AVAYA communication

# DEFINITY®
# Enterprise Communications Server
Release 9.5
Guide to ACD Call Centers

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Issue 4
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July 2001

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**Notice**
Every effort was made to ensure that the information in this book was complete and accurate at the time of printing. However, information is subject to change.

**Preventing Toll Fraud**
"Toll fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there may be a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

**Avaya Fraud Intervention**
If you suspect that you are being victimized by toll fraud and you need technical assistance or support, in the United States and Canada, call the Technical Service Center's Toll Fraud Intervention Hotline at 1-800-643-2353. Outside of the United States and Canada, contact your Avaya representative.

**Providing Telecommunications Security**
Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of your company's telecommunications equipment) by some party.

Your company's "telecommunications equipment" includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, "networked equipment").

An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

**Your Responsibility for Your Company's Telecommunications Security**
The final responsibility for securing both this system and its networked equipment rests with you - an Avaya customer's system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure your:

- Avaya-provided telecommunications systems and their interfaces
- Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products.

**Federal Communications Commission Statement**
**Part 15: Class A Statement.** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

**Part 68: Network Registration Number**. This equipment is registered with the FCC in accordance with Part 68 of the FCC Rules. It is identified by FCC registration number AS593M-13283-MF-E.

**Part 68: Answer-Supervision Signaling.** Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 Rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user.

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received.

**Canadian Department of Communications (DOC)**
**Interference Information**
This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Nomérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A préscrites dans le reglement sur le brouillage radioélectrique édicté par le ministére des Communications du Canada.

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**European Union Declaration of Conformity**
The "CE" mark affixed to the equipment described in this book indicates that the equipment conforms to the following European Union (EU) Directives:

- Electromagnetic Compatibility (89/336/EEC)
- Low Voltage (73/23/EEC)
- Telecommunications Terminal Equipment (TTE) i-CTR3 BRI and i-CTR4 PRI

For more information on standards compliance, contact your local distributor.

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# Contents

# Preface — About this document

## Overview

This document describes the Automatic Call Distribution (ACD) feature of the DEFINITY switches, including the DEFINITY Enterprise Communications Server, the DEFINITY Business Communications System (BCS), the DEFINITY ONE, the Prologix, and GuestWorks.

For details specific to what is new in Release 9 of the DEFINITY, see *DEFINITY ECS What's New for Release 9*, 555-233-766, and *DEFINITY What's New for Release 9.5*, 555-233-418.

DEFINITY is a family of cost-effective digital communication systems. These systems:

- Route voice and data information between various endpoints (telephones, terminals, computers)
- Provide highly robust networking capabilities
- Include an extensive set of standard features: attendant consoles, voice processing interface, call coverage, DS1 (T1 and E1) connectivity, hospitality support, recorded announcement, and trunk-to-trunk transfer
- Provide flexibility and allow for the addition of optional features and/or upgrades to the system as business needs change

This document explains the features that comprise the DEFINITY ACD. It provides an introduction to each call center feature and presents required forms for administration, detailed descriptions, considerations, and interactions between call center features. This document provides an overall reference for planning, operating, and administering your DEFINITY ACD Call Center.

## Contents and organization of the guide

This document is organized into chapters by subject. Features are in alphabetical order within each chapter. Pertinent forms follow the features. Basic features and forms are presented in a chapter with the same title.

The following table gives a brief description of each chapter and appendix in this book.

**Table 1. Contents of Document**

| | Title | Contents |
|---|---|---|
| Chapter 1 | Automatic Call Distribution (ACD) basics | Gives an overview of the ACD feature. |
| Chapter 2 | DEFINITY call center capacities for ACD software and related features | Includes tables that show the switch capacities for DEFINITY ECS R9.5, R9, R8, R7, R6, R5, DEFINITY G3V4, G3V3, G3V2, G3V1, and CentreVu CMS. Also includes information on measured extensions, splits, and trunks. |
| Chapter 3 | DEFINITY ACD call center features | Contains information about the call center features available on the DEFINITY ECS |
| Chapter 4 | DEFINITY ACD call center forms | Contains all of the forms required to administer basic call center features on the DEFINITY ECS, descriptions of the fields on each form, and special notes about usage. |
| Appendix A | Recorded announcements | Describes the use and requirements around using recorded announcements in a call center environment. |
| Appendix B | Appendix B, ‘‘Administering VRUs/IVRs as station ports’’ | Provides information on how to administer VRUs and IVRs as station ports on the DEFINITY. |
| | Glossary and Abbreviations | Provides a glossary and list of abbreviations for this and other related DEFINITY ECS documents |
| | Index | Provides an index for the document. |

## Audience

This document is intended for the DEFINITY system administrators and managers, end-users interested in information about specific features, and Avaya support personnel responsible for planning, designing, configuring, selling, and supporting the system.

## Reason for reissue

This document and the DEFINITY ECS Vectoring/EAS Guide, 555-230-521, are updated to include the DEFINITY Release 9.5 (R9.5) and other information, including:

- Improvements to Network Call Redirection (NCR),
- New system capacities for DEFINITY R9.5
- The addition of path replacement for QSIG/DCS ISDN calls
- The addition of voice announcements over the LAN capability using the TN2501AP circuit pack
- Corrections to the available treatments in the *wait-time* command
- Addition of information regarding Look Ahead Routing and how it interacts with BSR and LAI
- Addition of information regarding the use of the asterisk (*) telephone key instead of the pound (#) telephone key to define that a customer has completed entering digits for a *collect* step.
- Improved definition of CMS and measured trunks versus unmeasured facilities

## How to use this document

This document is designed to be used as a reference document. If you are interested in information about a particular feature, use the index or table of contents to locate the page number where the feature is described. Forms also can be located this way. They are listed alphabetically in each chapter in the table of contents. The title that appears on the form is the form name.

## Conventions used in this document

This document uses the following conventions:

**NOTE:**
Draws attention to information that you must heed.

**CAUTION:**
*Denotes possible harm to software, possible loss of data, or possible service interruptions.*

**WARNING:**
*Denotes possible harm to hardware or equipment.*

**SECURITY ALERT:**
*Indicates when system administration may leave your system open to toll fraud.*

## Trademarks

The following trademarked names may be used in this document.

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- DEFINITY® is a registered trademark of Avaya and Lucent Technologies.
- GuestWorks® is a registered trademark of Avaya and Lucent Technologies
- UNIX® is a registered trademark of Novell, Inc. in the United States and other countries, licensed exclusively through X/Open Corporation.

## Related documents

The following documents may include information related to the ACD feature.

### Administration documents

The primary audience for these documents consists of switch administrators who work for external customers and for Avaya's dealers. The satisfaction and needs of our external customers is the primary focus for the documentation.

**DEFINITY ECS Administrator's Guide, 555-233-506**

Provides complete step-by-step procedures for administering the switch, plus feature descriptions and reference information for SAT screens and commands.

**DEFINITY System's Little Instruction Book for basic administration, 555-233-756**

Provides step-by-step procedures for performing basic switch administration tasks. Includes managing phones, managing features, and routing outgoing calls.

**DEFINITY System's Little Instruction Book for advanced administration, 555-233-757**

Provides step-by-step procedures for adding trunks, adding hunt groups, writing vectors and recording announcements.

#### DEFINITY System's Little Instruction Book for basic diagnostics, 555-233-758

Provides step-by-step procedures for baselining your system, solving common problems, reading alarms and errors, using features to troubleshoot your system, and contacting Avaya.

#### DEFINITY ECS Overview, 555-233-767

Provides a brief description of the features available with DEFINITY ECS. This book does not provide a general overview of the switch nor of basic telephony.

#### DEFINITY ECS Reports, 555-233-505

Provides detailed descriptions of the measurement, status, security, and recent change history reports available in the system and is intended for administrators who validate traffic reports and evaluate system performance. Includes corrective actions for potential problems.

#### DEFINITY ECS System Description, 555-233-200

Provides hardware descriptions, system parameters, lists of hardware required to use features, system configurations, and environmental requirements.

#### DEFINITY ECS Change Description

Provides a detailed overview and information on basic administration for the new functionality in this release.

### Installation, upgrades, and maintenance documents

Avaya technicians, design center employees, and customer self-maintainers are the primary audiences for these documents.

#### DEFINITY ECS Administration for Network Connectivity, 555-233-504

Describes the main types of switch-to-switch connections that use Overlan hardware and software, and the procedures required to administer these connections.

#### DEFINITY ECS ATM Installation, Upgrades, and Administration, 555-233-124

Step-by-step instructions for how to install, upgrade, and administer ATM switches.

#### DEFINITY ECS Installation and Maintenance for Survivable Remote EPN, 555-233-121

Describes how to install, cable, test, and perform maintenance on a Survivable Remote Expansion Port Network (SREPN). Provides power, ground, and fiber connections.

### DEFINITY ECS Installation and Test for Multi-Carrier Cabinets, 555-233-114

Provides procedures and information for hardware installation and initial testing of multi-carrier cabinets.

### DEFINITY ECS Installation and Test for Single-Carrier Cabinets, 555-233-120

Provides procedures and information for hardware installation and initial testing of single-carrier cabinets.

### DEFINITY ECS Installation for Adjuncts and Peripherals, 555-233-116

Provides procedures and information for hardware installation and initial testing of ECS adjunct and peripheral systems and equipment.

### DEFINITY ECS Installation, Upgrades and Additions for Compact Modular Cabinets, 555-233-118

Provides procedures and information for hardware installation and initial testing of compact modular cabinets.

### DEFINITY ECS Maintenance for R9r, 555-233-117

Provides detailed descriptions of the procedures for monitoring, testing, troubleshooting, and maintaining the R9r ECS. Included are maintenance commands, step-by-step trouble-clearing procedures, the procedures for using all tests, and explanations of the system's error codes.

### DEFINITY ECS Maintenance for R9si, 555-233-123

Provides detailed descriptions of the procedures for monitoring, testing, troubleshooting, and maintaining the R9si ECS. Included are maintenance commands, step-by-step trouble-clearing procedures, the procedures for using tests, and explanations of the system's error codes.

### DEFINITY ECS Maintenance for R9csi, 555-233-119

Provides detailed descriptions of the procedures for monitoring, testing, troubleshooting, and maintaining the R9csi ECS. Included are maintenance commands, step-by-step trouble-clearing procedures, the procedures for using all tests, and explanations of the system's error codes.

### DEFINITY ECS Upgrades and Additions for R9r, 555-233-115

Provides procedures for an installation technician to convert an earlier release of the switch to DEFINITY ECS Release 9. Includes upgrade considerations, lists of required hardware, and step-by-step upgrade procedures. Also includes procedures to add control carriers, switch node carriers, port carriers, circuit packs, auxiliary cabinets, and other equipment.

### DEFINITY ECS Upgrades and Additions for R9si, 555-233-122

Provides procedures for an installation technician to upgrade an existing switch to DEFINITY ECS Release 9 Included are upgrade considerations, lists of required hardware, and step-by-step upgrade procedures. Also included are procedures to add control carriers, switch node carriers, port carriers, circuit packs, auxiliary cabinets, and other equipment. Task-oriented Technician Documentation New electronic information for customer service engineers who perform G3r upgrades.

## Call center documents

These documents are issued for DEFINITY Call Center applications. The intended audience is DEFINITY administrators.

### DEFINITY ECS Vectoring/EAS Guide, 555-230-521

Provides information on how to write, use, and troubleshoot vectors, which are command sequences that process telephone calls in an Automatic Call Distribution (ACD) environment.

### DEFINITY ECS Guide to ACD Call Centers, 555-233-503

Provides feature descriptions and some implementation guidance for call center features.

### CentreVu Call Management System Switch Connections and Administration, 585-215-876

Contains switch-to-CMS hardware connection diagrams and procedures to administer the switch-to-CMS link on the switch. It does not contain the administration of the CMS,

### DEFINITY ECS Basic Call Management System (BCMS) Operations, 555-230-706

Provides information on the use of the BCMS feature for ACD reporting.

### DEFINITY BCS and GuestWorks Call Vectoring Guide, 555-231-744

Provides information on how to write, use, and troubleshoot vectors on the smaller DEFINITY systems.

## End users

The primary audience for these documents consists of people who use the phones and attendant consoles.

### DEFINITY ECS Console Operations, 555-230-700

Provides operating instructions for the attendant console. Included are descriptions of the console control keys and functions, call-handling procedures, basic system troubleshooting information, and routine maintenance procedures.

### DEFINITY ECS Console Operations Quick Reference, 555-230-890

Provides operating instructions for the attendant console. Included are descriptions of the console control keys and functions, call handling, basic system-troubleshooting information, and routine maintenance procedures.

# How to get help

For those times when you need additional help, the following help services are available. You may need to purchase an extended service agreement to use some of these help services. See your Avaya representative for more information.

- Avaya Centers of Excellence
  - Asia/Pacific
    65-872-8686
  - Western Europe/Middle East/South Africa
    441-252-391-889
  - Central/Eastern Europe
    361-270-5160
  - Central/Latin America/Caribbean
    1-303-538-4666
  - North America
    1-800-248-1111
- DEFINITY Helpline
  1-800-225-7585
- Avaya Toll Fraud Intervention
  1-800-643-2353
- Avaya National Customer Care Center Support Line
  1-800-242-2121
- Avaya Corporate Security
  1-800-822-9009

# How to make comments about this document

We provide a comment sheet at the front of this document. While we have tried to make this document fit your needs, we are interested in your suggestions for improving it and urge you to complete and return a comment sheet. If the comment sheet has been removed from this document, please send your comments to:

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# Automatic Call Distribution (ACD) basics

# 1

## Introduction

This chapter gives an overview of the Automatic Call Distribution (ACD) feature. It describes basic ACD capabilities for the following Avaya switches:

- DEFINITY Enterprise Communications Server and DEFINITY ProLogix (known as Category A)
- DEFINITY BCS and GuestWorks (known as Category B).

> **NOTE:**
> The DEFINITY BCS and GuestWorks systems use the ACD feature, but do not support EAS, CAS, or the CMS.

This chapter addresses ACD terminology, switches and switch features, how the ACD processes calls, split queues, distributing and handling calls, and the ACD and call management systems.

- ACD terminology defines common terms that are used throughout this book.
- The Switches and Switch Features section defines switches and ACDs and explains how the following features work: trunks, trunk groups, and extensions; automatic-in processing; switch attendant; and Direct Inward Dialing (DID) processing.
- The What the ACD does section discusses how the ACD uses Automatic-in and Direct Inward Dialing (DID) to process calls.
- Split Queues defines a split queue and explains how to set up call processing to a split, including announcements for calls in a split queue; answer supervision and abandoned calls, intraflow and interflow, and night service for the ECS and Generic 3.

- Distributing and Handling Calls describes how calls are distributed to agents and how agents handle the calls. It also defines the split supervisor telephone buttons.
- ACD and call management systems — CMS and BCMS describes how CentreVu CMS collects measured data on splits/skills, extensions, trunks, trunk groups, VDNs, and vectors. This section also includes switch features that affect CMS data, such as Hold, Conference, Transfer, Multiple Call Handling, and so forth.

### Category A versus Category B

The ACD feature is available with switches that are sized differently and allow for different features to be implemented. These differences fall into two categories:

- **Category A** — includes all varieties of the DEFINITY ECS and DEFINITY ProLogix. Category A allows for all ACD-related features to be implemented, according to what the customer purchases. Category A supports the CMS and CAS adjuncts.
- **Category B** — includes the DEFINITY BCS and GuestWorks switch. Category B allows for all basic ACD-related features to be implemented except for EAS and CentreVu Advocate and CentreVu Supervisor. Category B does not support the CMS and CAS adjuncts.

## ACD terminology

The following terms will provide general familiarity with the ACD environment.

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| Agent | An agent is a person assigned to one or more splits/skills and handles calls to/from an extension in those splits/skills. |
| Agent In Multiple Splits/Skills | Depending on the ACD software, an agent can be a member of multiple splits/skills. |
| Agent State | Agent state is a term or code that represents the current availability status of an agent. The term agent state also represents a user ability to change an agent's availability within the system. |
| Announcements | An announcement is a pre-recorded message delivered to a caller in queue requesting the caller to remain on-line, prompting the caller for information or directing the caller to another destination. When a call is in queue, depending on the length of time in queue, an automatic recording can encourage the caller to hang on, call back later, call another number, leave a message or can be used with call prompting to direct the caller to specific destinations. These announcements can be scheduled to occur periodically. |
| CAS | Centralized Attendant Service.<br>CAS is a system feature used when more than one switch is employed. CAS is an attendant or group of attendants that handles the calls for all switches in that particular network.<br>Available only with Category A. |

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| CMS | Call Management System.<br>CMS is an adjunct (basic software package or optional enhanced software package) that collects call data from a switch resident ACD. CMS provides call management performance recording and reporting. It can also be used to perform some ACD administration. CMS allows users to determine how well their customers are being served and how efficient their call management operation is.<br>Available only with Category A. |
| Call Center | A call center provides a centralized location where a group of agents or company representatives communicate with customers via incoming or outgoing calls. |
| Call Distribution Methods | The ACD can distribute calls to agents in a split/skill in the following ways:<br>— Direct (linear) Hunting<br>— EAD-LOA (Expert Agent Distribution-Least Occupied Agent)<br>— EAD-MIA (Expert Agent Distribution-Most Idle Agent)<br>— UCD-LOA (Uniform Call Distribution-Least Occupied Agent)<br>— UCD-MIA (Uniform Call Distribution-Most Idle Agent)<br>— PAD (Percent Allocation Distribution) (Available with CentreVu Advocate only.) |
| Call Prompting | Call Prompting is a call management method that uses specialized call vector commands to provide flexible handling of incoming calls based on information collected from the caller. One example would be where the caller receives an announcement and is then prompted to select (via dialed number selection) a department or an option that was listed in the announcement. |
| Call Vectoring | Call Vectoring is an optional software package that allows processing of incoming calls according to a programmed set of commands. Call Vectoring provides a flexible service allowing direct calls to specific and/or unique call treatments. |
| CentreVu Advocate | CentreVu Advocate is a collection of ECS features that provide new flexibility in the way a call is selected for an agent in a call surplus situation and in the way that an agent is selected for a call in an agent surplus situation. Advocate also includes methods for automating staffing adjustments.<br>Available only with Category A. |
| DID | Direct Inward Dialing.<br>DID is a process involving calls coming into the switch from the CO. The switch than routes the calls directly to the appropriate extension (as identified by the last four digits). |

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| DNIS | Dialed Number Identification Service.<br>DNIS is a feature of the 800 number service that sends the dialed digits to the called destination. This can be used with a display telephone to indicate the type of call to an agent. For example, the call by its destination can be classified as a certain type of call or caller (e.g., a Gold Card caller) depending on a product or service the destination number is associated with. |
| EAS | Expert Agent Selection.<br>An optional feature available with G2.2 and newer switches that uses Call Vectoring and ACD in the switch to route incoming calls to the correct agent on the first try based on skills.<br>Available only with Category A. |
| Extensions | Telephones connected to a PBX/switch via telephone lines are referred as extensions. Extensions is also the term used to define the 3, 4, or 5 digit numbers used to identify the telephone to the PBX/switch software for call routing purposes. |
| Hunt Groups | A group of trunks/agents selected to work together to provide specific routing of special purpose calls. |
| Interflow | Interflow is used when a split's/skill's queue is heavily loaded or when a call arrives after normal work hours.<br>Interflow redirects a call to a destination outside the local switch network (a different switch system). |
| Intraflow | Intraflow is used when a split's/skill's queue is heavily loaded or when a call arrives after normal work hours. Intraflow involves redirecting a call to a destination within the local switch network (the same switch system). |
| LAI | Look Ahead Interflow.<br>LAI allows users to balance the call work load between multiple call centers on separate switching systems. LAI uses ISDN to allow multiple switches to communicate and interflow when appropriate.<br>Available only with Category A. |
| Leave Word Calling | Leave Word Calling is a system feature that allows messages to be stored for any ACD split/skill and allows for retrieval by a covering user of that split/skill or a system wide message retriever. |
| MCT | Malicious Call Trace.<br>MCT allows an agent to notify a predefined party a malicious caller is on the line. It also involves enabling a recording device to record the call. |
| Night Service | Night Service is used when a call arrives after normal work hours. The call can be redirected to another destination such as another split/skill, an extension, the attendant, an announcement with forced disconnect, or a message center. Night Service can take one of three forms:<br>— Hunt Group (Split/Skill) Night Service<br>— Trunk Group Night Service<br>— System Night Service |

| | |
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| Priority Queue | The priority queue is a segment of a split's/skill's queue from which calls are taken first. |
| QDN | Queue Directory Number.<br>QDN is an associated extension number of a split. It is not normally dialed to reach a split. The split can be accessed by dialing the QDN. The QDN is also referred to as a split group extension. |
| Queues (split/skill and/or attendant) | If calls cannot be answered immediately, they are routed to a call collection point (split/skill queue or attendant queue) where calls are held until a split/skill agent or attendant can answer them. Calls are ordered as they arrive and they are served in that order. Depending on the time delay in answering the call, announcements, music, or prepared messages may be employed until the call is answered. |
| Service Observing | Service observing is a feature used to train new agents and observe in-progress calls. The observer (split/skill supervisor) can toggle between a listen-only mode or a listen/talk mode during calls in progress. |
| Skill | An ability given to an agent to meet a specific customer requirement or a call center business requirement.<br>Available only with Category A and EAS active. |
| Split | A group of extensions/agents that can receive standard calls and/or special purpose calls from one or more trunk groups. |
| Split/Skill Administration | Split/Skill administration is the ability to assign, monitor, or move agents to specific splits/skills. It also involves changing reporting parameters within the system. |
| Split/Skill Supervisor | A split/skill supervisor is assigned to monitor/manage each split/skill and split/skill queue to accomplish specific split/skill objectives. A supervisor can assist agents on ACD calls, be involved in agent training, and control call intra/interflow. |
| Threshold | A threshold is a point in time or criteria that determines a certain action by the system. For example, the number of calls in queue or the time calls spend in queue determines specific call treatments, or you can set the number of rings prior to announcements or call answers. |
| Trunk/Trunk Group | Trunks are communication channels between two switching systems or offices. Trunks grouped together to provide identical communications characteristics are called trunk groups. Trunks within trunk groups can be used interchangeably between two communications systems or central offices in order to provide multi-access capability. |
| Trunk state | A term or code that represents the current status of a particular trunk. |

# Switches and switch features

This section defines switches and ACDs and explains how they work. The section contains the following topics:

- Trunks, trunk groups, and extensions
- Automatic-in processing definition
- The attendant
- Switch with attendant and extensions
- Direct Inward Dialing processing with an example
- Automatic-in processing of ACD calls
- DID processing of ACD calls
- Call processing on an ACD switch.

## What a switch does

A switch is an electronic device that processes incoming, outgoing, and internal calls and connects them to the proper destinations. The telephone company switch in your local area is called a Central Office (CO). A switch owned by a company or organization processes incoming, outgoing, and internal calls. Throughout this chapter, the term switch is used to refer to a company or organization's switch.

## Trunks, trunk groups, and extensions

Incoming calls to a company first pass through the CO. The CO sends calls to the company switch over trunks (telephone lines that carry calls between two switches, between a CO and a switch, or between a CO and a phone).

The CO receives dialed digits from the caller, processes the digits, and seizes a trunk that is assigned those digits. After the CO seizes a trunk, it sends a continuing transmission to the destination phone or switch, and no other calls can be sent over that trunk until the current call disconnects.

Since a trunk can carry only one call at a time, trunk groups are usually created. A trunk group is a group of trunks that are assigned to the same digits. With a trunk group, the CO receives the digits of a dialed phone number and checks the trunk group assigned to that number to see if any of the trunks are available. The CO then seizes an available trunk. As many simultaneous calls can be made over a trunk group as there are trunks in that trunk group. A trunk group, therefore, can carry multiple calls for the same phone number. When a trunk group carries incoming calls (that is, calls made outside the company's switch location) to the switch, the switch then connects the calls to their proper destinations within the company.

The switches previously listed, in addition to connecting incoming calls to the proper destinations, are also like private COs for company employees. That is, employee phones are connected to a switch by telephone lines called extensions. Extensions are then assigned 3- 4- or 5-digit numbers within the switch software, and these numbers become the employee phone numbers for internal (intra-company) calls.

## Automatic-in processing

Automatic-in processing is one type of call processing. With automatic-in processing, the CO processes all of the digits of an incoming call. The CO then seizes a trunk from the trunk group, but since processing is complete, the call connects directly to a destination identified in the switch software. That destination can be a phone, a queue (in which callers wait to be answered in the order in which their call was received), or special treatment like an announcement.

## Switch attendant

Incoming calls can also go to a switch attendant. A switch attendant is a person who manually routes calls to their proper destinations using an attendant console (which is like a call switchboard). Normally an attendant serves as an internal operator who transfers calls to the proper extensions. Often, a switch will have more than one attendant, and all of the switch's attendants will answer calls directed to the attendant queue, which holds calls until an attendant is available. The attendant queue receives internal calls made from employee extensions, and also receives incoming calls through DID processing and automatic-in processing. Attendant call handling varies, depending on the company's needs. However, if the attendant has an automatic-in number, it will normally be the number published in the phone book, and the DID number will most likely be used by off-site employees who know only the attendant's extension number.

Centralized Attendant Service (CAS) is a switch feature that enables attendants to be consolidated at one private-network location. The attended location is called the CAS main and each unattended location is called a CAS branch. At branch locations, calls requiring attendant services route by way of Release Link Trunks to the main location.

## Direct inward dialing processing

With Direct Inward Dialing (DID) processing, incoming trunks do not connect the CO directly to an employee's phone; instead, the incoming trunks are pooled by the switch, and this pool of trunks is then shared by employee phones. Extension numbers may serve as the final digits of employee phone numbers for incoming calls. That is the CO may assign a 2- 3- or 4- digit prefix to a trunk group. Then, when a 7-digit employee phone number is dialed, the call is processed as follows:

1. The CO processes the prefix of the dialed number, and then seizes a trunk in the trunk group that is assigned that prefix.
2. The CO passes the remaining digits of the dialed number to the switch.
3. The switch recognizes the remaining digits as an employee extension number and sends the call to that extension.

### DID processing example

As an example of DID processing, say that Employee A has the external phone number 538-1000 and the extension number 1000. Employee B has the phone number 538-9999 and the extension number 9999. The steps in completing calls to Employees A and B might be as follows:

1. Employee A's client dials 538-1000.
2. The CO serving Employee A's company identifies the digits 538 (the common prefix for all phone numbers to that company) and seizes Trunk 1 in the trunk group assigned the digits 538.
3. The CO passes the digits 1000 to the switch at Employee A's company.
4. The switch identifies the digits 1000 as Employee A's extension number and sends the call to Employee A's extension.
5. Employee A's phone rings and Employee A answers.
6. Meanwhile, Employee B's client dials 538-9999.
7. The CO identifies the digits 538 and seizes Trunk 2 in the trunk group assigned the digits 538.
8. The CO passes the digits 9999 to the switch.
9. The switch identifies the digits 9999 as Employee B's extension number and sends the call to Employee B's extension.
10. Employee B's phone rings and Employee B answers.

While Employees A and B continue to talk, Trunks 1 and 2 in the 538 trunk group will not accept any more calls, so another call beginning with the digits 538 will seize yet another trunk in the trunk group.

## What the ACD does

Automatic Call Distribution (ACD) is a switch software feature that processes high-volume incoming, outgoing, and internal calls and distributes them to groups of extensions called hunt groups or splits. The switch also sends information about the operation of the ACD to the CentreVu CMS which stores and formats the data and produces real-time and historical reports on ACD activity. For more detailed information about ACD, read the feature description in the product documentation that came with your switch.

ACD is used by a call center to route incoming calls to specifically assigned splits/skills and agents. ACD allows a system administrator to create an efficient call management environment. This administrator can add or remove splits/skills from the system, add or remove announcements, add or remove agents, add trunk groups and route calls to the appropriate splits/skills. The administrator can also specify ACD measurement criteria and use an optional CMS package to provide reports on ACD efficiency.

### Things to know before you start

A voice response port or a person who answers ACD calls is called an agent. Companies that operate high-volume call-answering centers, for example, a catalogue sales center, a reservations center, or a customer service center, use the ACD feature to process incoming calls and distribute them to agents. In addition to agents, each ACD split can be assigned a split supervisor. The split supervisor uses various switch and CentreVu CMS features to monitor split and agent performance and to provide assistance if necessary. Maintaining trunks from the CO to the switch and hiring agents to answer calls costs money. However, if customers who call to purchase goods or services have difficulty reaching an agent and, therefore, stop trying to get through, the call center loses revenue. Call center management needs, therefore, to determine how many trunks and agents are necessary to minimize costs and maximize the ability of customers to purchase goods or services. Management can then set up and maintain the ACD accordingly.

### Automatic-in processing of ACD calls

Through switch administration, each automatic-in trunk group is assigned to an ACD split. All calls that come in on an automatic-in trunk group are directed to the assigned split. Then the ACD software distributes the calls to the agent extensions assigned to the split according to the assigned call distribution method (described later).

### DID processing of ACD calls

The switch enables you to dial directly to various extensions such as a VDN, a hunt group, an agent, or a login ID. Each extension can be assigned to a split as a DID extension.

For DID processing, trunk groups are not assigned to the split. The creation of associated extensions is sufficient to send calls arriving over DID trunk groups to the appropriate split. Each split can receive incoming calls through DID processing, automatic- in processing, or both. Automatic-in trunk groups carry calls only to the split, whereas DID trunk groups carry calls to any extension identified in the switch software, not just a split.

## Split queues

This section defines a split queue and explains how to up call processing to a split. The section contains the following topics:

- Split queue call processing
- Announcements for calls in a split queue
- Answer supervision and abandoned calls
- Intraflow and interflow
- Night service for the switch.

## Split queue call processing

A split queue is a holding area for calls waiting to be answered, usually in the order in which they were received. When a call is put into queue, the caller may hear one or more delay announcements, music, and/or silence, depending on the treatment assigned for the split. (Treatment of calls in queue is assigned through switch administration.)

### Things to know before you start

Calls enter the queue at the bottom and move toward the top or head of the queue. After a call reaches the head of the queue, it connects to the next available agent.

For switches with the Call Vectoring feature, all call treatment including routing, queuing, announcements, and music is specified by call vectors. When a call arrives at a split, the ACD software checks to see if an agent is available to handle the call. If an agent is not available (that is, all agents are busy), the call enters the split's queue.

Calls queue only if no agents are available, a queue is assigned to the split, and the queue is not full. If the queue is full, the caller hears a busy tone or the call goes to coverage. If the split is vector controlled, then this step will fail. Furthermore, if no agents are logged into the split or if all agents are in AUX work mode (described later), calls do not queue.

### Priority and normal split queues

Each split can have two queues: a normal queue and a priority queue. A split always has a normal queue and can also be assigned a priority queue. The ACD distributes all calls in the priority queue before it distributes any calls in the normal queue. Therefore, the priority queue, if one exists, must be empty before the ACD distributes calls in the normal queue.

Priority queuing may be assigned in the Class of Restriction (COR) associated with the split extension number. A split may also be assigned Priority Queuing on Intraflow, which means that calls to that split, if rerouted to another local split, will enter the destination split's priority queue.

### Split queue size

Queue size is established through switch administration. Calls arriving after the administered queue limit is reached receive a busy signal or go to the split's busy coverage if administered. (If the split is vector controlled, then this step will fail.) Or, calls can be redirected to a local or remote destination. See the Intraflow and Interflow for more information.

## Announcements for calls in a split queue

When a call enters a split queue, the caller hears ringing until the call is connected to an agent or an announcement. Depending on the treatment assigned to a split, the caller may hear one or two announcements, music, or silence. An announcement is a recorded message that provides information such as the destination the call has reached or a company's business hours, or it tries to persuade the caller to stay on the line.

### Things to know before you start

Announcements and delay time are assigned to splits through switch administration. Delay time is the amount of time a call will wait in queue before receiving an announcement. If a call connects to an agent before the delay time expires, the caller does not hear the announcement. If a call connects to an agent while an announcement is playing, the announcement stops. After the first announcement plays, the caller hears music or silence until the second announcement plays or the call connects to an agent. The type of caller feedback (music or silence) is also assigned to a split through switch administration.

For switches with the Call Vectoring feature, announcement capabilities are more flexible than those described in this section. See ‘‘Call Vectoring’’.

### Related features

The switch supports both internal and external announcement devices.

The announcement delay time can be from 0 to 99 seconds. A 0-second delay time causes a forced announcement, which means callers always hear the entire first announcement, whether an agent is available or not. A second announcement can be administered to recur each time the announcement delay time expires.

#### Rules for announcements

The announcement is played from beginning to end unless an agent becomes available. In such a case, the announcement is interrupted and (if manual answering operation is assigned to the agent, or if calls are delivered to the agent on a manual answering basis) ringback is provided. If the call is queued, the call remains as such while the announcement is played. Any feedback that is provided before an announcement (for example, a wait with music or ringback) continues until the announcement is played.

**Without vectoring** — If an announcement queue is full, the system continues to try to connect the call to the proper announcement until the call connects to an agent, connects to an announcement, or enters the announcement queue. The following rules apply to announcements without vectoring implemented:

- Calls directly entering a split queue always receive a forced first announcement if assigned. The caller also hears first and second delay announcements if administered and delay intervals are met.
- Calls that reach a split by way of Call Coverage from another split (Intraflow) or a station do not receive a forced or delay first announcement at the destination split. The caller hears a second delay announcement if administered and the delay interval is met.
- Calls that reach a split by way of Call Forwarding from another split (Interflow) or station do receive delay first and second announcements if administered and the delay intervals are met.

**With vectoring** — If the announcement's queue is full, the call retries the announcement step for an indefinite period of time before any new vector steps are processed. If an *announcement* command follows a failed *adjunct routing* command, the announcement is interrupted. If the *adjunct routing* command succeeds (that is, the switch receives a destination from the ASAI adjunct), the announcement terminates immediately. The *announcement* command step is skipped, and vector processing continues at the next vector step, whenever any of the following conditions exist:

- Requested announcement is busied out, not available, or not administered.
- Integrated board is not installed.
- External aux trunk or analog equipment is not attached.

## Announcement queuing

External and internal announcement units are available. The number of calls that can be queued to an announcement depends on the size of the switch you have. The capacity tables in the System Description have details for each switch model. Queuing for internal announcements is quite different. Internal announcements are delivered by a 16-channel announcement board, and a call receives an announcement only when it connects to one of the 16 announcement channels. Therefore, all calls wait in a single queue to access a channel on the announcement board regardless of the split announcement they are waiting to receive. The same announcement can be delivered over multiple channels. Announcements are delivered on demand, so a call that connects to a channel receives an announcement immediately and does not have to wait for the announcement to finish and start again.

## Answer supervision and abandoned calls

Answer supervision is a signal sent by the switch to the serving Central Office (CO). This signal tells the CO that an incoming call has been answered and that the CO should begin tracking toll charges for the call (if they apply). Answer supervision is sent immediately before a call connects to an agent's telephone, to music, or to an announcement.

## Abandoned calls

An abandoned call is a call that reaches a call center, but does not connect to an agent because the caller hangs up. A call can abandon while in queue or while ringing at an agent position. Abandoned calls represent lost sales or lost good will. Adequate split staffing and effective use of announcements can reduce the number of abandoned calls. Splits should be staffed so that calls do not have to wait in queue for an unreasonable amount of time, and announcements can be used to persuade the caller to wait until someone answers the call.

### Abandoned call search

If answer supervision is sent before a caller abandons, ghost calls can occur. A ghost call is a call that is sent to an agent after the caller hangs up. Ghost calls occur because, after a caller hangs up, some COs wait 2 to 25 seconds before sending a disconnect signal to the switch. Ghost calls are a problem because they waste agents' time, and they can delay or prevent other calls from connecting to an agent. To minimize this problem, Abandoned Call Search can be assigned to specific trunk groups for the switch.

With Abandoned Call Search, the switch checks the incoming trunk before delivering an ACD call to an agent. If the trunk is on-hook at the CO (the call has been abandoned), the switch releases the trunk and does not deliver the call. If a call is still in progress on the trunk, the switch delivers the call to an agent.

## Intraflow and interflow

Intraflow and interflow allows you to redirect ACD calls to another split or other local or remote destinations. Redirecting calls to a local destination is called intraflow. Redirecting calls to a destination outside the switch is called interflow.

## Things to know before you start

Intraflow and interflow are set up differently on the Generic 3 and newer switches. If Call Vectoring is active on the switch, redirection of calls differs significantly from the following intraflow/interflow descriptions.

## Description

As many as three intraflow destinations OR one interflow destination can be established for a split through switch administration. Intraflow uses the Call Coverage feature to redirect ACD calls to a coverage path that contains one, two, or three of the following internal destinations:

- An extension
- An ACD split (including AUDIX® and Message Center splits) or Hunt Group. The term “Hunt Group” refers to groups of extensions that receive distributed calls. The term “split” refers to a hunt group that is measured by CentreVu CMS.
- An attendant group
- An announcement followed by a forced disconnect.

Call Forwarding and ACD splits can be set up to intraflow calls unconditionally.

Interflow destinations are the same as those listed above for intraflow (plus the CAS attendant), except interflow sends calls to destinations outside the switch.

## Setting up splits

If a split is assigned more than one intraflow destination, the switch tries each destination in the order in which it was assigned. If no destination can accept the call, the switch leaves the call in the original split’s queue. If an interflow destination is specified and activated, the switch tries only that destination. If the interflow destination cannot accept the call, the caller hears a busy signal. ACD splits can be set up to intraflow calls unconditionally. Unconditional intraflow redirects all calls to the specified destination. Unconditional intraflow is normally used to redirect calls when a split is not staffed.

Splits can also be set up to intraflow calls when one or all of the following criteria are met:

- Don’t Answer

  Calls redirect if not answered within the assigned Don’t Answer Interval (1 to 99 ringing cycles).

- Busy

  Calls redirect when the split’s queue is full; that is, when the number of calls in queue equals the administered queue length.

- No Agents Staffed or All Agents in AUX Mode

  Call redirect if there are no agents staffed or if all agents are in the AUX work mode.

## Assigning queue status

If an intraflow destination has a queue, that queue may be assigned an inflow threshold. The inflow threshold, which is established through switch administration, is the length of time the oldest call in queue has waited. Once the inflow threshold is reached, that queue does not accept intraflowed calls and the switch tries the next administered destination.

Through switch administration, a split can be assigned Priority Queuing on Intraflow which allows intraflowed calls to enter the priority queue at the destination split.

## Types of calls for a split

The following types of intraflow/interflow can be used for a split:

- Don't Answer Time Interval intraflow (using the Call Coverage feature)
- Busy intraflow (using the Call Coverage feature)
- Unconditional intraflow (using the Call Forwarding-All feature).

When calls are intraflowed using the Call Coverage feature, CentreVu CMS only reports inflowed and outflowed calls if the call queues to the original split. For example, a call that covers using the busy criterion will not be recorded as in/outflowed since it could not queue to the original split. Calls that queue before covering using the Don't Answer criteria are recorded as in/outflowed calls.

## Setting up intraflow/interflow

A split can have either intraflow or interflow active, but not both. However, both conditional (Call Coverage) and unconditional (Call Forwarding) intraflow can be active for a split at the same time. In this case, unconditional intraflow is first invoked for the split's incoming calls. Then, after the switch forwards a call to the unconditional destination, the switch uses the conditional intraflow criteria to determine whether to redirect the call to the next destination. Thus, when unconditional and conditional intraflow are used together, the conditional intraflow criteria are applied to the forwarded-to destination, not to the original split.

This combination of unconditional and conditional intraflow allows Dialed Number Identification Service (DNIS) numbers to appear on agent display telephones. In this case, the DNIS number is actually a dummy split extension (that is, the split extension has no assigned agent extensions). The intraflow destinations are the real splits (with staffed agents). With such a configuration, CentreVu CMS will count incoming calls for the DNIS number (that redirected via unconditional intraflow to real splits) as outflows. CentreVu CMS will also count the calls to the destination splits as ACD calls and inflowed calls. And regardless of the split where calls actually connect to agents, the agents will see the DNIS (dummy split) number on their display terminals.

The intraflow criteria and destinations are assigned through switch administration. Console permissions and the Call Forwarding dial access code are also assigned through switch administration. Unconditional intraflow or interflow can be activated by entering the Call Forwarding dial access code from a station with console permission, the split's extension, and the interflow or intraflow destination number.

The split supervisor cannot establish conditional intraflow from a telephone. Furthermore, CentreVu CMS cannot be used to set up or activate intraflow/interflow.

## Night Service

The DEFINITY offers an alternative form of call routing called Night Service. Night Service redirects all calls to one of the following internal destinations:

- An ACD split
- An extension
- An attendant group
- An announcement with forced disconnect.

Night service is available for a hunt group, a trunk group, or a system. These types of night service are explained below.

### Hunt Group Night Service

Hunt Group Night Service redirects all calls arriving at a split to an internal destination. The Night Service destination for the split and the telephone button used to activate the feature are assigned through switch administration.

### Trunk Group Night Service

Trunk Group Night Service redirects all calls arriving over a split's assigned trunk groups to an internal destination. The Night Service destination for the trunk group and the telephone button used to activate the feature are assigned through switch administration.

Trunk Group Night Service by itself does not guarantee that all calls to a split will be redirected. Calls from local extensions and DID calls will still connect to the split.

Trunk Group Night Service and Hunt Group Night Service can both be active at the same time. If the Trunk Group Night Service is active, its destination will be used for calls that come in over the trunk group even if they go to a split that has a Hunt Group Night Service destination assigned.

### System Night Service

System Night Service redirects all calls arriving over all trunk groups to the Night Service destination. System Night Service overrides any Hunt Group Night Service set up for an individual split. If Trunk Group Night Service is active for a particular trunk group, System

Night Service does not affect that trunk group. When any type of Night Service becomes effective, calls already in a split's queue are not redirected. To avoid dissatisfied callers, agents should continue to staff the split until the queue is empty.

## Distributing and handling calls

This section describes how calls are distributed to agents and how agents handle the calls. The section contains the following topics:

- Call distribution methods without EAS
- Call distribution methods with EAS
- How agents handle calls
- Split supervisor telephone buttons.

ACD calls are delivered to agents according to the type of call distribution (also known as hunting) that is assigned to the split/skill. This section explains the different types of call distribution.

When the ACD and Queue field on the Hunt Group form (see the *DEFINITY ECS Administrator's Guide,* 555-233-506, for information on completing this form) are set to y, queues for agents and queues for calls are established in the switch. These queues are used to handle incoming calls based on the type of call distribution that is implemented. The types of call distribution available for use depend on whether or not EAS is used by the call center.

### Call distribution methods without EAS

Without EAS, the following call distribution methods are available:

- Direct Department Calling
- Uniform Call Distribution-Most Idle Agent (UCD-MIA)

**NOTE:**
The following descriptions of ACD call distribution assume that the Multiple Call Handling (MCH) feature is not assigned. Agent availability is different for splits assigned the MCH feature.

### Direct

ACD software searches for an available agent in the order that extensions were assigned to the split (through switch administration), starting with the first extension assigned to the split. This type of call distribution is most useful when management wants the most effective or most experienced agents to handle more calls. Agents are rank-ordered from most to least effective and then are assigned to the split in that order. Direct call distribution is called Direct Department Calling (DDC).

If you administer a split for DDC, an incoming call is routed to the first available agent extension in the administered sequence. If the agent is not available, the call routes to the next available agent, and so on. Incoming calls are always routed to the first agent in the sequence, so calls are not evenly distributed among agents.

### UCD-MIA

When the UCD-MIA call distribution method is used, the switch searches for the agent extension that has been idle (waiting) the longest and delivers the call to that extension if the agent is available to handle an ACD call. This type of call distribution ensures a high degree of equity in agent workloads even when call-handling times vary.

The ACD software determines which agent extension has been idle the longest by maintaining an ordered list (queue) of agents who are eligible to receive the next ACD call. Eligible agents enter the queue at the bottom and move toward the top of the queue. The agent who has been in queue the longest receives the next ACD call unless the agent is not available at the time the call is to be distributed. If the agent at the top of the queue is not available, the ACD software checks the availability of the next agent in queue until an available agent is found.

When an agent completes an ACD call, the agent is added to the bottom of the eligible-agent queue for the split/skill associated with the call. DEFINITY also offers the option called “MIA across splits/skills” to put an agent at the bottom of all split/skill queues the agent is logged in to when the agent completes any ACD call. Agents move toward the top of the eligible-agent queue as long as they remain staffed and available or on AUXIN or AUXOUT extension calls from the available state, or on an ACD call for another split (unless the “MIA across splits/skills” option is turned on). Agents in ACW are in eligible agent queues on Generic 3 switches. You can choose whether these agents are or are not in the eligible-agent queues for the DEFINITY.

An agent is marked as unavailable to take an ACD call if the agent:

- is in ACW,
- is on an AUXIN or AUXOUT extension call from the available state, or
- is on an ACD call for another split or skill.

The agent remains in queue moving toward the top of the queue. Agents in multiple splits enter multiple eligible-agent queues. The agents’ progress in each queue is independent of any activity in other queues. Agents in the AUX state are not in the eligible- agent queue.

You can set the DEFINITY to maintain a separate queue for available agents in each split/skill, or you can create one combined queue for agents in all splits/skills. If the MIA Across Splits/Skills? field on the Feature-Related System Parameters form is set to **n**, the switch maintains available agent queues for each split/skill. When agents answer a call, they are only removed from the available agent queue for the split/skill at which that call arrived. If the field is set to **y**, then the agent is removed from all split/skill queues that the agent is logged in to whenever they answer a call for any of their assigned splits/skills.

The agent is returned to the agent queues, based on how you administer the following:

- If forced Multiple Call Handling applies, the agent is placed in the queue when the call stops alerting.
- If the ACW Agents Considered Idle? on the Feature-Related System Parameters form is **y**, the agent is queued when the call completes.
- If ACW Agents Considered Idle? is **n**, the agent is queued when ACW completes.

**NOTE:**
If you are using an Expert Agent Distribution method (EAD-MIA or EAD-LOA), then the agent is put back in queue(s) after completing an ACD call based on skill level.

If you are not using an EAD call distribution method, then the agent is put at the bottom of the queue(s) after completing an ACD call.

## Call distribution methods with EAS

With EAS, the following call distribution methods are available:

- Uniform Call Distribution-Most Idle Agent (UCD-MIA)
- Expert Agent Distribution-Most Idle Agent (EAD-MIA)
- Uniform Call Distribution-Least Occupied Agent (UCD-LOA)
- Expert Agent Distribution-Least Occupied Agent (EAD-LOA)

**NOTE:**
When CentreVu Advocate is used, an additional call distribution method, Percent Allocation Distribution (PAD) is available. See the *CentreVu Advocate User's Guide*, 585-215-953, for details on using PAD.

The following table summarizes the different call distribution methods, which are further defined in the sections below.

| WHEN agents are available, a call arrives, and the agent selection method is . . . | THEN the DEFINITY selects. . . |
|---|---|
| EAD-MIA | the highest skill level, most idle agent. |
| UCD-MIA | the most idle agent, without regard to skill level. |
| EAD-LOA | the highest skill level agent with the lowest occupancy. |
| UCD-LOA | the least occupied agent, without regard to skill level. |
| PAD | the agent with the lowest ratio of adjusted work time and target allocation for the skill. |

## UCD-MIA

UCD-MIA works the same in the EAS environment as it does without EAS, except that the switch searches for the most idle agent with the required skill.

UCD-MIA does not select an agent based on skill level. Therefore, if an agent is the most idle agent with the required skill, even if the skill is assigned a secondary skill level for that agent, the call is delivered to that agent.

## EAD-MIA

The EAD-MIA call distribution method selects the most idle agent with the required skill to handle the call and the highest skill level.

This method of call distribution adds a layer of processing on top of the Most Idle Agent distribution call processing. EAD-MIA sorts the agents in the eligible-agent queue into multiple queues based on skill level. Agents with the skill assigned at higher-priority levels appear in the eligible-agent queue ahead of agents with the skill assigned at lower-priority levels. The call is delivered to the most idle, most expert agent available.

When you are using EAS Preference Handling Distribution (EAS-PHD), the agent can enter the MIA queue at one of 16 levels. The lower the level, the higher the level of expertise; so an agent with skill level 1 is the most qualified to answer a call to that skill. Without EAS-PHD, agents enter the MIA queue as either level 1 or level 2 agents. When agents with a lower skill level become idle, they enter the MIA queue in front of agents with a higher skill level. See ‘‘Expert Agent Selection (Category A only)’’ in the ‘‘DEFINITY ACD call center features’’ chapter for more information about EAS Call Distribution.

### UCD-LOA

When the UCD-LOA call distribution method is in use, the switch delivers the call to the least occupied agent, without regard to skill level.

The least occupied agent is the agent who has spent the lowest percentage of their time on ACD calls since logging in. The agent's place in the queue of available agents is determined by this percentage. The agent occupancy (the percentage of time on calls) is always calculated separately for each skill an agent is logged into, so there is an available agent queue for each skill.

### EAD-LOA

When the EAD-LOA call distribution method is in use, the switch delivers the call to the least occupied agent with the highest skill level.

The agent occupancy is calculated as described in the UCD-LOA section.

## How agents handle calls

An agent can receive split calls and, in most cases, personal calls that are not related to a split. Calls distributed to an agent's telephone by the ACD feature on the switch are considered ACD calls. Calls dialed directly to an individual agent using the agent's extension number (such as internal calls and DID extension calls) are called extension-in (EXT- IN) calls. Outgoing calls the agent makes are called extension-out (EXT-OUT) calls. EXT-IN and EXT-OUT calls are considered non-ACD calls.

### Things to know before you start

The capability of a telephone to receive EXT-IN calls or to make EXT-OUT calls can be restricted through switch administration. The following descriptions of agent call handling assume that the Multiple Call Handling (MCH) feature is not assigned. Agent availability and call handling are different for splits assigned the MCH feature.

ACD calls are distributed only to available agent extensions. To be considered available, an agent must first staff an agent extension and then select a call-answering mode (automatic in or manual in).

### Staffing agent extensions without EAS

To staff an agent extension on the switch without the EAS feature, an agent must dial a login access code or press the LOGIN button on the agent's telephone. The agent must then dial a split number and a login ID. The login ID length, the login dial access code, and, if desired, the LOGIN button are assigned through switch administration. The split number may also be assigned to the LOGIN button or to another telephone button.

### Staffing multiple splits

An agent can log in from any extension assigned to a split. An agent can log into as many as four splits. To the switch and CentreVu CMS, each login counts toward the maximum number of agent members that can be measured. That is, if four agents are each logged into three splits, the agent member count is 12.

### Agent login

Agent login lets ACD (and CMS) know an extension is active and logged into the system (AUX work mode). Pressing the login button and then following the appropriate system login procedure makes the extension staffed in AUXWORK. This procedure varies with the type system you have.

### Agent logout

Agent logout lets ACD (and CMS) know an extension is no longer active.

### Agent request for supervisor assistance

When supervisor assistance is needed, an agent can press the ASSIST button or dial the ASSIST feature access code and the split/skill group number brings the designated person on line. On G2 the agent must place the current call on hold before pressing ASSIST. On G3 pressing ASSIST automatically places the current call on hold.

## Agent states and call answering modes

Agent State is the current status of an agent. Work modes are the work function(s) the agent is performing at a given time.

When the agent is engaged in an ACD call, the agent is in the ACD agent state.

After staffing an extension, the agent is in the auxiliary work (AUX-WORK) mode, which is considered non-ACD work.

## AUTO-IN versus MANUAL-IN

In AUX-WORK mode, the agent is not yet available to receive ACD calls. To become available for ACD calls, the agent must press the MANUAL-IN or AUTO-IN button to select a call answering mode.

**Table 1-1. Auto-In versus Manual-In**

| | |
|---|---|
| AUTO-IN | Like the MANUAL-IN button, the AUTO-IN button tells the ACD that the agent is available for an ACD call. However, when the call ends, the agent is immediately available for another ACD call according to the established call distribution method. The agent does not have to press any buttons to receive another ACD call. This type of call answering increases the number of calls that agents can answer in a given period of time and is most effective if agents have little or no call-related work to do after finishing each ACD call. The DEFINITY Release 5 has a timed ACW feature for AUTO-IN operation. This option automatically puts the agent into ACW for a preset length of time at the end of an AUTO-IN call. When the time is up, the agent automatically becomes available to take an ACD call. MANUAL-IN and AUTO-IN dial access codes and telephone buttons are assigned through switch administration. |
| MANUAL-IN | The MANUAL-IN button tells the ACD that the agent extension is available for an ACD call. The ACD then distributes a call to the agent according to the established call distribution method. When the call ends, the agent automatically enters the After-Call-Work (ACW) state. While in ACW, the agent is not available to receive ACD calls. When ACW ends, the agent presses MANUAL-IN to receive another ACD call. The manual-in mode is most effective if an agent must perform call-related tasks after finishing each ACD call. MANUAL-IN dial access codes and telephone buttons are assigned through switch administration. |

## Ringing versus zip tone for incoming calls

When a call arrives at a telephone, the agent may hear ringing or zip tone (beeping), depending on how the telephone is administered. Ringing is recommended when an agent answers calls using the handset. When a call connects to the agent's telephone, the telephone rings, and the agent picks up the handset to answer the call.

Zip tone is recommended when the agent uses a headset to answer calls. (Zip tone can also be used with a handset, but the agent must hold the handset and listen for the zip tone.) When a call connects to an agent's telephone, the agent hears one burst of zip tone for calls dialed directly to the split (or agent extension on the switch) and, without pushing any buttons, the agent greets the caller.

Ringing (called "manual answer" in switch administration) or zip tone (called "automatic answer" in switch administration) is established on a per-telephone basis through switch administration.

## Auxiliary Work (AUXWORK) and After-Call-Work (ACW)

To temporarily stop ACD calls from arriving at an agent's telephone, an agent can press the Auxiliary Work (AUXWORK) or After-Call-Work (ACW) button.

| | |
|---|---|
| **AUXWORK** | The agent is involved in non-ACD work, is on break, in a meeting or at lunch. CMS recognizes the extension as staffed but does not want ACD to route calls there for an extended time. AUX-IN implies that the extension received an extension-in call while in AUX. AUX-OUT implies that the agent placed an outgoing call while in AUX.<br><br>The AUXWORK button temporarily stops ACD calls from arriving at the agent's telephone. The agent normally presses this button before doing non-ACD-related work such as taking a break or doing personal business. Instead of unstaffing the extension or logging off, an agent can press this button which places the agent in the auxiliary-work state. To receive ACD calls again, the agent presses the MANUAL-IN or AUTO-IN button.<br><br>The AUXWORK button (or the dial access code, if no button is available) is assigned through switch administration. If an agent is normally logged into more than one split, an AUXWORK button for each split may be assigned. Then, when the agent presses the AUXWORK button for a particular split, the agent will not receive calls from that split. However, the agent will still be available for calls from the other splits the agent is logged into.<br><br>Also, if an agent is logged into more than one split/skill and receives an ACD call for one split/skill, the agent is unavailable for calls for other splits/skills. |
| **ACW** | The agent is engaged in work associated with a call, but not on a call. ACW-IN implies that the station received a call while in ACW. ACW-OUT implies that the agent made an outgoing call while in ACW.<br><br>The ACW (After Call Work) button is only available with the DEFINITY ECS and Generic 3 switches. This button temporarily stops ACD calls from arriving at the agent's telephone. An agent who is in Auto-In mode presses this button during a call so that when the call is finished, the agent will not receive another ACD call and can, instead, do ACD call-related work such as filling out a form, completing data entry, or making an outgoing call. The lamp indicator next to the ACW button lights when the agent is in after- call-work. When in the manual-in mode, an agent automatically enters ACW when the call ends. However, if the agent needs to get out of Auto-In mode or the auxiliary work state to do additional call-related work, the agent can press the ACW button (or dial the appropriate access code). On the DEFINITY ECS and Generic 3 switches an agent can press the MANUAL-IN button (or dial the appropriate access code) while on an ACD call to automatically enter ACW when the call ends. If an agent is logged into more than one split, pressing the ACW button makes the agent unavailable for calls in all splits. CentreVu CMS considers the agent to be in the OTHER state for all splits other than the split in which the agent is currently in ACW. |

### Additional agent state/work modes

The following table lists additional agent states/work modes that may display.

| Agent state/ work mode | Description |
|---|---|
| **UNSTAF** | Unstaffed (Agent State).<br>The agent is not logged in and being tracked by CMS. |
| **DACD** | The agent is on a direct agent ACD call. |
| **DACW** | The agent is in the after call work state for a direct agent ACD call. |
| **OTHER** | The agent is doing other work. If an agent is working in three splits/skills and receives a call from one, the ACD puts the agent in OTHER for the other two. |
| **UNKNOWN** | CMS does not recognize the current state. Unknown remains until the condition is cleared, and/or the agent completes the current ACD call and any current ACW, or a current agent state message is sent to CMS from the switch. |
| **RING** | The time a call rings at an agent's telephone after leaving the queue and before the agent answers. |

### Trunk states

Trunk State indicates the current status of a specific trunk, or the ability to change that state. Trunk states are:

| Trunk State | Description |
|---|---|
| **Idle** | The trunk is waiting for a call. |
| **Seized** | The trunk is seized by an incoming or outgoing call. |
| **Queued** | An ACD caller has the trunk and is waiting for the agent to answer. |
| **Conn** | The agent and caller are connected in an ACD call. |
| **Abandoned** | The queued caller has just abandoned the call. |
| **Fwrd** | A queued call has been intraflowed outside the ACD or has been interflowed to another PBX/Switch. |
| **Mbusy** | Maintenance Busy, or out of service for maintenance purposes. |
| **Hold** | The agent has put the call on hold. |

## Other telephone buttons

This section describes other buttons that can be assigned to an agent's telephone.

| | |
|---|---|
| **CALL APPEARANCE** | These buttons are used to place (originate) and answer calls. Two status lamps (red and green) are next to each call appearance button. The red lamp lights when an agent presses an appearance button to make or answer a call. The green lamp flashes to indicate an incoming call.<br>Except with Multiple Call Handling, incoming ACD calls always arrive at the first call appearance. However, telephones may be assigned more appearances to provide additional call-handling capabilities. For example, an agent can use a second call appearance to transfer or place calls since the line will be free of ACD calls. On a two-appearance telephone, the second appearance can only be used to originate calls. |
| **ADD SKILL** | For switches with EAS, logged-in agents or telephone users with console permissions can press this button to add a skill. |
| **ALERT CHANGE** | The lamp associated with this telephone button flashes when another user changes an agent's assigned skills or moves an agent from his or her current split to a different split. The lamp does not flash when an agent changes his or her own skills from the telephone. |
| **ASSIST** | Press this button to request help from the split supervisor. The ASSIST button automatically dials the split supervisor's extension and connects the agent to the supervisor. Pressing the ASSIST button automatically puts the current call on hold. |
| **AUDIO TROUBLE** | Agents press this button to report a call with poor transmission quality to CentreVu CMS. The message the switch sends CentreVu CMS includes the agent's extension, the trunk being used, and the time of day the trouble occurred. This information is reported in CentreVu CMS exception reports and is useful for trouble-shooting trunk and extension problems. For more information, see *CentreVu CMS Administration*, 585-214-015.<br>Stroke count button 0 is used for reporting audio difficulty. |
| **CONFERENCE** | Press this button to add another person to a two-person call. An agent with a multi- appearance telephone can add up to four additional people to a 2-person call. For single-appearance telephones, only one person can be added. Single appearance telephones do not have a CONFERENCE button. Agents must use the RECALL button to conference a call. If an agent adds another agent into a conference call, the resulting conference is not considered an ACD call for the added agent. The ACD considers the added agent to be on an extension-in call. |
| **CALL WORK CODE** | Agents press this button and enter up to 16 digits to record the occurrence of a customer-defined event. Call Work Codes are stored on CentreVu CMS, not on the switch. |
| **CALLER-INFO** | With the Call Prompting feature, agents press this button to display the digits collected by the last **collect digits** *vector command.* |
| **EMERGENCY** | Press this button to report a malicious call to the controller. The controller can then trace the call. |

| | |
|---|---|
| **HOLD** | Press this button to put a call on hold. The ACD will not send any more calls to an agent who has a call on hold. For switches with Multiple Call Handling, an agent can put an ACD or non-ACD call on hold and receive an ACD call by pressing the AUTO-IN or MANUAL-IN button. With Multiple Call Handling, multiple ACD calls can be delivered automatically to an agent in Auto-In or Manual-In work mode, provided that an unrestricted line appearance is available on the telephone.<br><br>Single appearance telephones do not have a HOLD button. Agents must use the RECALL button or the terminal's switch-hook to put a call on hold. A single appearance telephone cannot be used to handle multiple ACD calls. |
| **LOGOUT** | Press this button to unstaff the extension and end CentreVu CMS collection of agent data. If an agent pressed STAFFED to staff a telephone, pressing STAFFED again unstaffs the telephone. |
| **RECALL** | Agents using single-appearance telephones press the RECALL button to put calls on hold, transfer calls, and create conference calls. |
| **RELEASE** | Press this button to disconnect a call. |
| **REMOVE SKILL** | With EAS, logged-in agents or telephone users with console permissions can press this button to remove a skill. |
| **STROKE COUNT** | As many as nine STROKE COUNT buttons can be assigned. Agents press these buttons to record call events of interest. CentreVu CMS records and reports stroke-count information. Stroke count button 0 is reserved for audio difficulty. |
| **TRANSFER** | Agents normally press the TRANSFER button to transfer calls to other agents or the split supervisor. This button is only available on multi-appearance telephones.<br><br>Single-appearance terminal users must use the button or the terminal's switch-hook.<br><br>Agents can also use the TRANSFER button to transfer calls to external destinations. External transfer must be assigned to a telephone as a feature over and above the normal transfer feature. If an agent transfers a call to another agent, the call is not considered an ACD call for the agent receiving the call unless the transferring agent dialed a split extension, VDN, or agent login ID (an EAS capability known as Direct Agent calling). The ACD considers the agent receiving the transfer to be on an extension-in call. For the agent transferring a call, the call is counted as an EXT-OUT call. |
| **VUSTATS** | Agents with display telephones press this button to display agent, split/skill, VDN, or trunk group data similar to that reported by CentreVu CMS. |

### Queue status lamps

The lamps associated with the queue status buttons provide the following information:

| | |
|---|---|
| **NQC** | The lamp associated with the NQC (Number of Queued Calls) button tells the agent that calls are in queue and when the number of calls in queue has met or exceeded the assigned queue threshold for the split. If no calls are in the split's queue, the status lamp associated with the button is dark. When one or more calls are in queue, the lamp lights steadily. When the number of calls in queue reaches the assigned queue threshold, the lamp flashes on and off. |
| **OQT** | The lamp associated with the OQT (Oldest Queued Time) button tells the agent that calls are in queue and when the oldest call in queue has been waiting longer than the assigned wait time threshold (0 to 999 seconds) for the split. If no calls are in the split's queue, the status lamp is dark. When calls are in queue, the lamp lights steadily. When the assigned wait time threshold has been met or exceeded by the oldest call in queue, the lamp flashes on and off. A flashing queue status lamp tells agents they need to handle calls more quickly. The thresholds that cause the lamps to flash and the telephone buttons are assigned through switch administration. |
| **Auxiliary queue status lamps** | An auxiliary queue status lamp indicates that either the Number of Queued Calls threshold or the Oldest Queued Time threshold has been reached. The lamp lights when the assigned threshold is met or exceeded. Unlike the lamps on a telephone, the auxiliary queue status lamp does not indicate when calls queue to the split. |

### Display buttons

The following telephone buttons control the information that appears on the display:

| | |
|---|---|
| **NORMAL** | Press this button to display information about the active call appearance. Press this button to display incoming call information (either an extension-in call or an intraflowed/interflowed call) for a different call appearance.telephone |

## Split supervisor telephone buttons

A split supervisor is normally assigned to each split. The capabilities that allow monitoring of agent performance, adding and removing agents, and performing other split-related activities must be assigned with separate switch administration procedures.

### Telephone button definitions

The following telephone buttons are available only to the split supervisor's extension:

| | |
|---|---|
| **NIGHT SERVICE** | The split supervisor presses this button to send all calls to night service. The Night Service may be Trunk Group Night Service or Split Night Service. Also, a separate button for each type of night service may be available. |
| **RECORD ANNCT** | The supervisor presses this button to either listen to or to record an announcement for the split. |
| **SERVICE OBSERVE** | The supervisor presses this button and dials an agent extension number to listen to conversations on the telephone. The Service Observe feature permits the supervisor to check an agent's call- handling technique. An agent's telephone may also be assigned the SERVICE OBSERVE button so that the agent can listen to another agent's conversations. This capability is especially useful for agent training. Service observing can be set up for listening only or for both listening and talking.<br>The following enhancements were made to service observing, effective with DEFINITY G3V3:<br>• For switches with EAS, a logical agent ID, which is associated with an agent, not the telephone the agent is currently using, can be service observed.<br>• For switches with Call Vectoring, VDNs can be service observed.<br>• Feature Access Codes which allow service observing from an external location or from a telephone that does not have feature buttons can be assigned through switch administration. |
| **VU STATS** | For the DEFINITY G3V3 and newer switches, split supervisors and agents with display telephones press this button to display agent, split/skill, VDN, or trunk group data similar to that reported by CentreVu CMS. |

## ACD and call management systems — BCMS and CentreVu CMS

This section does the following:

- Describes BCMS (Basic Call Management System)
- Describes R3 CMS (Release 3 - Call Management System)
- Lists what CMS records and reports
- Describes the four main ACD reporting databases.

## Basic Call Management System (BCMS)

BCMS is an optional software package (residing on the PBX/switch) used to provide real-time and historical reports to assist in managing ACD splits/skills, agents (extensions), trunk groups and VDNs (G3 only). These reports, provided by the system, are a subset of those reports available with the CMS adjunct.

## CentreVu Call Management System (CMS) (Category A only)

The CentreVu CMS is an adjunct that collects specific ACD data on measured splits/skills, measured agents, measured extensions, measured trunks and measured trunk groups for reporting purposes. If Call Vectoring is purchased, ACD will report on measured VDNs and Vectors. CMS provides call management performance recording and reporting. It can also be used to perform some ACD administration. CMS is used by customers to determine how well their customers are being served (i.e., speed of call answers, number of calls) and how efficient their call management operation is (i.e., agents versus traffic requirements).

## How CMS works with ACD

To collect information on ACD, CMS must be able to communicate with the ACD resident in the switch. The Switch to CMS Platform communication consists of electronic messages sent back and forth between the ACD switch and the CMS Platform via a data link. There are two types of messages:

- **Translations**

  Translations tell CMS the configuration of the ACD. This includes what data is measured (to be collected) and the ACD assignments.

- **Status Changes**

  Status Changes tell CMS when the states of agents or trunks change due to call activity. Occurrences are counted and durations are tracked.

**NOTE:**
CMS can also be used to change configurations within the ACD. Therefore, CMS can at times send translations back to the PBX.

## What CMS measures

CMS measures data on ACD splits, agents, extensions, trunks and trunk groups. If Call Vectoring is purchased, ACD will report on VDNs and Vectors.

- Main ACD reporting databases
  - — Agents

    Agent states
  - — Splits/Skills

    Events

    Workload

    Distribution

    Split/Skill call totals
  - — Trunks

    Trunk states
  - — Trunk Groups

    Events

    Workload

    Distribution

    Trunk call totals

## ACD measurement

This section describes how CentreVu CMS collects measured data on splits/skills, extensions, and so forth. The section contains the following topics:

- Assigning CentreVu CMS measurement of the ACD
- Switch features that affect CentreVu CMS data.

### Assigning CentreVu CMS measurement of the ACD

CentreVu CMS collects data on splits/skills, agents, extensions, trunks, trunk groups, VDNs, and vectors. However, for CentreVu CMS to collect data, the appropriate items (splits/skills, extensions, and so on) must be identified as measured on the switch.

Individual splits and trunk groups are assigned to CentreVu CMS measurement through switch administration. Extensions are measured by virtue of their assignment to measured splits. Trunks are measured by virtue of their assignment to measured trunk groups. The number of measured splits cannot be changed using the CentreVu CMS ACD Status screen.

Measured splits need not be numbered sequentially. VDNs are measured individually. All vectors are measured.

## Things to know before you start

The CentreVu CMS ACD Status window (see *CentreVu CMS Administration*, 585-214-015, document for more information) lists the total number of measured splits/skills, extensions (Agent Positions), trunks, and trunk groups established in an ACD.

Effective with the DEFINITY G3V2 and newer switches, you can add, delete, or change measured trunks, trunk groups, agent extensions, agent login IDs, VDN extensions, splits, and skills without busying out the link to CentreVu CMS and losing CentreVu CMS data.

## Switch features that affect CentreVu CMS data

There are several switch features that affect CMS data, such Conference, Transfer, Multiple Call Handling, Call Pickup, Intraflow, Interflow, Redirection on No Answer, Phantom Abandon Call Timer, Move Agent While Staffed, Expanded Agent Capabilities, Best Service Routing, and Universal Call ID. These features are explained below.

### Hold, Conference, and Transfer

CentreVu CMS tracks any type of call an agent puts on hold by pressing the Hold button, dialing the hold access code, pressing the Conference or Transfer button, or flashing the switchhook. Information on all calls (split/skill ACD, direct agent ACD, and extension calls) and the time spent on hold is stored in agent database tables. Information on split/skill calls only and the time spent on hold is stored in split/skill tables.

### Multiple Call Handling (MCH)

The DEFINITY G3V4 and newer switches have options to the Multiple Call Handling feature that can force agents to receive one or more ACD calls with other ACD calls or extension (non-ACD) calls on hold or active. For these forced options, talk time (and not ringing time) accumulates until the agent puts the current call on hold or releases it.

DEFINITY G3V3 and newer switches with Multiple Call Handling, an agent can put a call on hold and press the MANUAL-IN or AUTO-IN button to receive another ACD call. When multiple calls are on hold at the same time, hold time accumulates for each call on hold, and the total hold time can exceed clock time. For example, if two calls are on hold for 5 minutes each, 10 minutes of hold time accumulates.

### Call Pickup

When an agent uses the Call Pickup feature to pick up an ACD call that rings at another agent's extension, CentreVu CMS tracks the call as an AUX-IN call for the agent picking up the call. The split/skill of the agent originally called is credited with an outflow call, even if the agent who picked up the call is in the same split/skill. If an agent is logged into more than one split/skill, the call is counted for the split/skill the agent has been logged into the longest. Thus, when Call Pickup is used, CentreVu CMS does not count the call as an ACD call, even though the call queued to a split/skill and was answered. Various other types of data associated with ACD calls (for example, "Percent Answered Within Service Level" and "Average Speed of Answer") will also not include data on calls answered using the Call Pickup feature. Because the split/skill of the agent originally called is credited with an outflow call, the call counts against the "Percent Answered Within Service Level" for that split/skill.

### Intraflow and interflow

When a call is intraflowed or interflowed from a split/skill, CentreVu CMS counts the call as an outflow call for the split/skill. If a call is intraflowed into a split/skill, CentreVu CMS counts the call as an inflow call for the split/skill. CentreVu CMS counts interflowed calls as ordinary incoming calls for the split/skill. However, because calls can be intraflowed/interflowed to destinations that are not splits/skills or are not measured by CentreVu CMS, an outflow call from a split/skill will not always show a corresponding inflow call for another split/skill. Conversely, because calls can be intraflowed/interflowed into a split/skill from originating locations that are not measured by CentreVu CMS, an inflow call to a split/skill may not show a corresponding outflow from another split/skill.

If an intraflowed/interflowed call connects to an agent in the destination split/skill, that call is counted as an ACD call for the split/skill.

On the DEFINITY Generic 3 and ECS, a dummy split/skill may be established which intraflows calls to another split/skill. For CentreVu CMS to count outflow calls for dummy splits/skills, intraflow should be established using the Call Forwarding feature. If Call Coverage is used to intraflow calls, at least one agent must log into the dummy split/skill and go into ACW, and the call must queue to the dummy split/skill for at least one ring cycle for an outflow call to be counted.

For switches with the Call Vectoring feature, intraflow and interflow work differently, and CentreVu CMS data related to intraflow and interflow are recorded differently.

### Redirection on No Answer (RONA)

For the DEFINITY G3V2 and newer switches, when a ringing call times out and is requeued to the same split/skill by the Redirection On No Answer feature, CentreVu CMS counts an outflow and an inflow for the split/skill. That is, the redirected call appears as two offered calls to the split/skill. For the DEFINITY ECS, if the call redirects from ringing to a VDN, there is outflow from the initial VDN and from the split/skill. If the call was in another VDN prior to redirection to another VDN, then there is inflow to that VDN.

Also, NOANSREDIR is incremented for the split/skill and the VDN. For CMS R3V2 and newer, the database item NOANSREDIR is also incremented for split/skill and for VDN, if the call is in a VDN. If a split/skill is set up so that split/skill calls do not redirect back to the split/skill except by way of the Redirection On No Answer feature, the unique calls offered to the split/skill can be calculated by subtracting the value of NOANSREDIR from CALLSOFFERED.

Effective with DEFINITY G3V4, if a call redirects from ringing to a VDN, there is outflow from the split/skill and, if the call was in another VDN, there also is inflow to the new VDN and outflow from the initial VDN. The NOANSREDIR is incremented for split/skill and VDN.

### Phantom abandon call timer

CentreVu CMS can collect information about phantom abandon calls. When this capability is enabled, calls with a talk time (duration) shorter than the administered value (1 - 10 seconds) are counted as phantom abandon calls. Setting the timer to zero disables it. CentreVu CMS uses the PHANTOMABNS database item to store the number of phantom abandon calls.

This capability is important in areas where the public network switches do not provide disconnect supervision. Without this capability, short-duration calls that queue to a split/skill and are answered by an ACD agent or other answering position are counted as ACD calls, even if the calling party hangs up before the call is answered. This type of call is called a phantom or ghost call.

### Move agent while staffed

DEFINITY G3V4 and newer switches support moving a staffed agent between splits or changing the skill assignments for staffed agents. If the agent has any call on the telephone or is in ACW, then the move cannot take place immediately, but is pending the agent telephone going idle (all calls have been terminated), or the agent changing out of the ACW mode.

CMS provides two real-time database items in the agent data, MOVEPENDING and PENDINGSPLIT, that can be accessed by using custom reports to provide information about whether agent have moves pending and, if so, the split or skill to which they are being moved. Note that in the case that the agent’s skills are being changed and the change adds more than one skill, the PENDINGSPLIT item will show the first skill that is being added. It is also possible for MOVEPENDING to be set, but for PENDINGSAPLIT to be blank (or 0). This can happen, for example, when the link to the switch comes up and a move is pending for an agent. CMS will be notified by the switch that the move is pending, but PENDINGSPLIT will not be set.

## Expanded agent capabilities (Category A only)

DEFINITY R5 and newer switch releases support Expanded Agent Capabilities. This feature allows EAS agents to have up to 20 skills assigned. Each skill may be assigned a level from 1 to 16, where Reserve 1 and Reserve 2 are the highest levels and 16 is the lowest. (The numeric level replaces the skill type p or s used in earlier G3 EAS releases.) Agents may have a call handling preference based either on the skill level, meaning that the agent will serve calls waiting for his or her highest level skill before serving calls waiting for any lower level skills; or based on greatest need, meaning that the agent will serve the highest-priority, oldest call waiting for any of his or her skills, or percent allocation, based on the percent distribution of calls among the agent's skills.

The expanded agent capabilities feature also allows the specification of the skill to be used for the agent's direct calls. This also allows specification of the level for the direct agent skill, which, in conjunction with the agent's call handling preference, may affect the order in which a direct agent call is delivered to an agent. That is, direct agent calls need to be delivered for all skill ACD calls. A concept introduced in R3V5 CMS, that of the top skill, can be useful in EAS implementations that use skill level call handling preference for agents. An agent's first administered, highest level skill is the agent's top skill, since it is for this skill that the agent is most likely to handle calls. This is the skill that can count on the agent.

Database items track the number of top agents in skills, as well as the time top agents spent available and in AUX.

The expanded agent capabilities on the switch include an increased number of measured splits/skills to 600 and an increase in the number of measured agent/split or agent/skill pairs to 10,000 for the G3r processor, as well as new options for Most Idle Agent (MIA) call distribution. The new options allow selection of MIA distribution across skills, rather than for each skill, and selection of whether agents in ACW are or are not included in the agent free list. These options have no direct impact on CMS, since CMS does not keep track of the most idle agent.

## Best Service Routing (BSR) (Category A only)

DEFINITY ECS R6 and newer switch releases support Best Service Routing (BSR). BSR allows calls to be balanced at a single site or between multiple sites. BSR is enhanced multi-site routing that provides new call vectoring functions that build upon the Look-Ahead Interflow feature to route a call to the "best" split/skill on a single ECS or to the best split/skill in a network of DEFINITY ECSs.

The "best" split/skill is defined as the local split/skill or remote ECS that offers the shortest waiting time for the call in a call surplus (calls queued) situation for the application. The waiting time is calculated using the DEFINITY ECS's Expected Wait Time (EWT) predictor, and can be adjusted by the user. In an agents available situation, the "best" split/skill is determined based on the assigned available agent strategy. BSR data is tracked in the vector, VDN, and call history tables.

### Universal Call ID

DEFINITY ECS R6 and newer switch releases support Universal Call ID (UCID). UCID is a unique tag that is assigned to a call. The tag allows call-related data to be collected and aggregated from multiple sources (for example, DEFINITY and Intuity Conversant) and multiple sites. The UCID may then be used to group all the data from various sources about a particular call.

CMS will receive the UCID assigned to calls by a DEFINITY ECS R6 and newer switch releases with this feature enabled. The UCID is then stored, along with data about the call itself, by the call history feature (which includes both internal and external call history). The data will be available to both Custom Reports and the Report Designer. UCID data is stored in the call history and agent trace tables.

### CentreVu Advocate (Category A only)

CentreVu Advocate is available on the DEFINITY ECS Release 6 and newer switch releases. CentreVu Advocate is a collection of ECS features that provide flexibility in the way a call is selected for an agent in a call surplus situation and in the way that an agent is selected for a call in an agent surplus situation. Advocate also includes methods for automating staffing adjustments.

# DEFINITY call center capacities for ACD software and related features

# 2

## Introduction

This chapter describes the ACD capacities of Avaya products. It contains the following topics:

- Capacity tables for DEFINITY and CentreVu CMS
- Measured extensions and multiple splits on a non-EAS switch
- CMS and measured trunks and unmeasured facilities.

The tables in this appendix show:

1. Capacities for DEFINITY Release 9.5 and DEFINITY Release 10.1
2. Capacities for DEFINITY Release 9
3. Capacities for DEFINITY Release 8
4. Capacities for DEFINITY ECS Release 7 and Release 6.3
5. Capacities for DEFINITY ECS Releases 5 and 6
6. Capacities for DEFINITY Generic 3 Versions 2 to 4 switches
7. Capacities for DEFINITY Generic 3 Version 1 switches
8. Maximum capacities supported on CentreVu CMS.

**NOTE:**
Your switch and CentreVu CMS are probably configured differently than the maximum values shown in the capacities tables. Note these differences. You need to know your particular CentreVu CMS values before administering CentreVu CMS. Furthermore, if you have multiple ACDs, you cannot exceed the maximum capacities supported by CentreVu CMS across all ACDs.

# DEFINITY R9.5 and DEFINITY R10.1 capacities

This table shows the capacities that are related to Call Center on the DEFINITY R9.5 and the DEFINITY R10.1.

Capacities shown are for both Category A (ECS and ProLogix) and Category B (BCS and GuestWorks) except when a Category B is specified in the Item callout. ProLogix or DEFINITY ONE hardware limitations apply for some csi capacities, as indicated by Footnote *. EAS, ASAI, CMS, and CVX1 limits do not apply with Category B since EAS,ASAI, and CMS are not supported with the Category B configurations. Only Vectoring (Basic) and Vectoring ((Prompting) are provided with Category B (no advanced vectoring features are available).

**Table 2-1. DEFINITY R9.5 and DEFINITY R10 Call Center Capacities**

| Item | R9.5/ R10.1 csi | R9.5/ R10.1 si | R9.5/ R10.1 r |
|---|---|---|---|
| **Automatic Call Distribution (ACD) (Traditional ACD -- without EAS[1]** | | | |
| Announcements per Split | 2 | 2 | 2 |
| Announcements per System | 128 | 128 | 1000 |
| Splits | 99 | 99 | 999 |
| ACD Members per Split | 200 | 200 | 1500 |
| Maximum Administered ACD members[2] (Category A only) | 1000* | 1000 | 10000 |
| Maximum Administered ACD members (Category B) | 150 | 150 | 150 |
| Logged-in splits per agent[3] | 4 | 4 | 4 |
| Maximum ACD Agents (per system) When Each Logs Into:[4] (Category A only) | | | |
| 1 Split | 500* | 500 | 5200 |
| 2 Splits | 500* | 500 | 5000 |
| 3 Splits | 333* | 333 | 3333 |
| 4 Splits | 250* | 250 | 2500 |

*Continued on next page*

**Table 2-1. DEFINITY R9.5 and DEFINITY R10 Call Center Capacities *(Continued)***

| Item | R9.5/ R10.1 csi | R9.5/ R10.1 si | R9.5/ R10.1 r |
|---|---|---|---|
| Maximum ACD Agents (per system) When Each Logs Into: (Category B) | | | |
| 1 Split | 150 | 150 | 150 |
| 2 Splits | 75 | 75 | 75 |
| 3 Splits | 50 | 50 | 50 |
| 4 Splits | 37 | 37 | 37 |
| Queue Slots per Group[5] | 200 | 200 | 999 |
| Queue Slots per System[6] | 1500 | 1500 | 25000 |
| **Basic Call Management System (BCMS)** | | | |
| Measured Agents or Login IDs | 400 | 400 | 2000 |
| Measured Agents per Split | 200 | 200 | 999 |
| Measured Splits | 99 | 99 | 600 |
| Measured Trunk Groups | 32 | 32 | 32 |
| Measured VDNs | 99 | 99 | 512 |
| Maximum Agents Displayed by Monitor BCMS Split Command[7] | 100 | 100 | 100 |
| Maximum BCMS Terminals | 3 | 3 | 4 |
| Maximum Active Maintenance Commands for System | 1 | 1 | 5 |
| Maximum Simultaneous BCMS Terminals in Monitor Mode[8] | 1 | 1 | 3 |
| Reporting Periods | | | |
| Intervals | 25 | 25 | 25 |
| Days | 7 | 7 | 7 |
| **Call Vectoring** | | | |
| BSR application routing tables (forms) (Category A only) | 256 | 256 | 256 |
| BSR application routing table entries (app-loc pairs) (Category A only) | 1000 | 1000 | 1000 |
| Collected digits for Call Prompting | 16 | 16 | 16 |
| Dial-ahead digits for Call Prompting | 24 | 24 | 24 |

***Continued on next page***

**Table 2-1. DEFINITY R9.5 and DEFINITY R10 Call Center Capacities *(Continued)***

| Item | R9.5/ R10.1 csi | R9.5/ R10.1 si | R9.5/ R10.1 r |
|---|---|---|---|
| Holiday tables | 10 | 10 | 10 |
| Maximum skills a to which a call can simultaneously queue | 3 | 3 | 3 |
| Priority levels | 4 | 4 | 4 |
| Recorded Announcements/Audio Sources for Vector Delay | 128 | 128 | 1000 |
| Steps per Vector | 32 | 32 | 32 |
| Vector Directory Numbers (VDNs) administered on switch (Category A only) | 512 | 512 | 20000[9] |
| Vector Directory Numbers (VDNs) (Category B) | 30 | 30 | 40 |
| VDNs measured by CMS (Category A only) | 512 | 512 | 20000 |
| Vectors per System (Category A) | 256 | 256 | 999 |
| Vectors per System (Category B) | 15 | 15 | 20 |
| Vector Routing Tables (Category A only) | 10 | 10 | 100 |
| **CMS-to-Switch Links[10]** | 1 or 2 | 1 or 2 | 1 or 2 |
| **Dial Plan Related Limits** | | | |
| Extensions (total)[11] | 3500* | 3500* | 36065 |
| Station extensions[12] | 2416* | 2416* | 25028 |
| Miscellaneous extensions[13] | 900 | 900 | 20317 |
| **Expert Agent Selection (EAS)** | | | |
| Skill Groups | 99 | 99 | 999 |
| VDN Skill Preferences | 3 | 3 | 3 |
| Maximum Skills to which a Call Can Simultaneously Queue | 3 | 3 | 3 |
| Maximum Administered Agent Login IDs[14] | 1500 | 1500 | 10000 |
| Maximum Staffed Agent Login IDs[15] | 500* | 500 | 5200 |
| Max Administered ACD Members (Login ID-skill pairs)[16] | 6000 | 6000 | 65000 |
| Maximum Staffed ACD Members | 1000* | 1000 | 10000 |
| Maximum Skills per Agent | 20 | 20 | 20 |

***Continued on next page***

**Table 2-1. DEFINITY R9.5 and DEFINITY R10 Call Center Capacities *(Continued)***

| Item | R9.5/ R10.1 csi | R9.5/ R10.1 si | R9.5/ R10.1 r |
|---|---|---|---|
| Skill levels (preferences) per Agent Skill | 16 | 16 | 16 |
| Maximum logged in EAS Agents (per system) When Each Has:[17] | | | |
| 1 Skill | 500* | 500 | 5200 |
| 2 Skills | 500* | 500 | 5000 |
| 4 Skills | 250 | 250 | 2500 |
| 10 Skills | 100 | 100 | 1000 |
| 20 Skills | 50 | 50 | 500 |
| **Hunt Group Limits** | | | |
| Announcements per group | 1 | 1 | 1 |
| Announcements per system | 128 | 128 | 1000 |
| Splits/skills/hunt groups | 99 | 99 | 999 |
| Members per split/skill/hunt group | 200 | 200 | 1500 |
| Split/skill/hunt group queue slots for system | 1500 | 1500 | 25000 |
| Split/skill/hunt group queue slots per group | 200 | 200 | 999 |
| **Recorded Announcements or Audio Sources for Vector Delay** | | | |
| Announcement/audio sources | 128 | 128 | 1000 |
| Analog and AUX Trunk | | | |
| Queue slots per announcement | 150 | 150 | 1000 |
| Queue slots per system | 150 | 150 | 1000 |
| Calls connected to same announcement | 150 | 150 | 1000 |
| Integrated Announcements | | | |
| Queue slots for system | 200 | 200 | 4000 |
| Calls connected to same announcement | 50 | 50 | 1000 |
| TN750 and/or TN2501AP boards | 5 | 5 | 10 |
| TN750C boards | | | |
| Channels per board (playback ports) | 16 | 16 | 16 |
| Maximum announcements per board | 256 | 256 | 256 |

***Continued on next page***

**Table 2-1. DEFINITY R9.5 and DEFINITY R10 Call Center Capacities *(Continued)***

| Item | R9.5/ R10.1 csi | R9.5/ R10.1 si | R9.5/ R10.1 r |
|---|---|---|---|
| Board contents saved | 1 | 1 | 1 |
| Recording time at 16 KB per pack | 8:32 | 8:32 | 8:32 |
| Recording time as 32 KB per pack | 4:16 | 4:16 | 4:16 |
| Recording time at 64 KB per pack | 2:08 | 2:08 | 2:08 |
| TN2501AP (VAL) boards | | | |
| Channels per board (playback ports) | 31 | 31 | 31 |
| Maximum announcements per board | 256 | 256 | 256 |
| Board contents saved[18] | all active boards | all active boards | all active boards |
| Recording time per board in minutes | | | |
| Low-end option (maximum 1 board) | 10 | 10 | 10 |
| High-end option[19] | 60[20] | 60[20] | 60[21] |
| Integrated SSP Announcements for DEFINITY ONE/IP600 | | | |
| SSP boards | 1 | 1 | NA |
| Channels per SSP board | 8 | 8 | NA |
| Maximum announcements per board | 128 | 128 | NA |
| Board contents saved | all | all | NA |
| Recording time at 16 KB per board in minutes | 240 | 240 | NA |
| Recording time at 32 KB per board in minutes | 120 | 120 | NA |
| Recording time at 64 KB per board in minutes | 60 | 60 | NA |
| **Trunks and Trunk Groups** | | | |
| Trunk groups | 99 | 99 | 666 |
| Trunks (measured + unmeasured) | 400* | 400 | 4000 |
| **VuStats** | | | |
| Measured agents or Login IDs | 400 | 400 | 2000 |
| Measured splits | 99 | 99 | 600 |

***Continued on next page***

**Table 2-1. DEFINITY R9.5 and DEFINITY R10 Call Center Capacities *(Continued)***

| Item | R9.5/ R10.1 csi | R9.5/ R10.1 si | R9.5/ R10.1 r |
|---|---|---|---|
| Measured trunk groups | 32 | 32 | 32 |
| Measured VDNs | 99 | 99 | 512 |
| Interval reporting periods | 25 | 25 | 25 |
| Days reporting periods | 1 | 1 | 1 |
| Display formats | 50 | 50 | 50 |
| Simultaneous updating displays | 100 | 100 | 500 |
| **CallVisor ASAI** | | | |
| Adjunct control associations per call | 1 | 1 | 1 |
| Active adjunct control associations | 800 | 800 | 7000[22] |
| Active adjunct route requests system-wide[23] | 300 | 300 | 2000 |
| Active adjunct route requests per link[19] | 300 | 300 | 2000 |
| Active notifications per call | 3 | 3 | 6 |
| Active notifications per split domain | 3 | 3 | 6 |
| Call controllers per call | 1 | 1 | 1 |
| Call monitors per call | 28 | 28 | 28 |
| CRVs ECS to adjunct | 500 | 500 | 4000 |
| Domain control associations per call | 12 | 12 | 24 |
| Domain control station associations | 2000 | 2000 | 6000 |
| Domain control split/skill associations | 300 | 300 | 2000 |
| Domain controllers per station domain | 2 | 2 | 4 |
| Domain-controllers per split/skill domain | 4 | 4 | 8 |
| Notification requests (Monitors) | 300 | 300 | 10000 |
| Maximum calls with send DTMF active | 16 | 16 | 32 |
| Number of CallVisor ASAI links (open and proprietary)[24] (Category A only) | 8 | 8 | 16 |
| Number of CallVisor ASAI links (open and proprietary) (Category B) | 1 | 1 | 16 |
| Maximum simultaneous calls being classified | 80 | 80 | 600 |
| Monitors per VDN or split | 6 | 6 | 6 |

***Continued on next page***

**Table 2-1. DEFINITY R9.5 and DEFINITY R10 Call Center Capacities *(Continued)***

| Item | R9.5/ R10.1 csi | R9.5/ R10.1 si | R9.5/ R10.1 r |
|---|---|---|---|
| Split/skill domain controls system wide | 300 | 300 | 2000 |
| Simultaneous billing (MultiQuest) request | 100 | 100 | 1000 |
| Station controllers per station | 4 | 4 | 4 |
| Selected listen-disconnected paths | 75 | 75 | 300 |
| Messages per second per ASAI/BRI link (Category A only) | 20 | 20 | 30 |
| Messages per second per ASAI/BRI link (Category B) | 30 | 30 | 30 |
| Messages per second per MAPD LAN Gateway link | not known | not known | 180 |
| Messages per second per system | 80 | 80 | 240 |
| LAN Gateway links per multifunction board | 4 | 4 | 4 |
| LAN Gateway Links per MAPD | 8 | 8 | 8 |

1. AAS ports are to be included in the ACD Members, Logged-In Agents, and Logged-In IDs Staffed counts on DEFINITY ECS. Only measured logged-in ACD agent-split/skill pairs (including AAS ports) are counted toward the CMS limits. Category B does not offer EAS (so EAS limits are not applicable for Category B offers)
2. Also called administered agent-split pairs. Member capacity is used by ACD agents, Auto-Available Splits (AAS) ports (e.g., VRUs), non-ACD hunt groups (hunting groups with or without queues, Message Center Service, INTUITY/AUDIX, Remote AUDIX, etc.).
3. An agent can be assigned more splits during administration but only this number can be simultaneously logged into.
4. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned
5. Queue slots are shared across non-ACD, ACD (splits/skills) and AAS hunt groups.
6. See previous note.
7. The Monitor Split command will only display status for the first 100 agents logged into the split regardless of how many additional agents log into the split.
8. 12.2 BCMS monitoring, being a maintenance command, is limited by the active maintenance commands limit, reduced by 2 in the “r” system configuration (since 2 active command slots are reserved for the INADS and SAT logins respectively).
9. VDNs are counted as part of the miscellaneous extensions capacity. The total of VDNs, hunt groups, announcements, LDNs, TEGs, PCOL groups, access endpoints, administered TSCs and Code Calling IDs extensions and common shared extensions cannot exceed 20,317 for DEFINITY G3r. In addition, the total of stations (station extensions including ACD agent physical set extensions, Logical Agent IDs, and AWOH) assigned and the VDNs assigned can not exceed 25,000 for DEFINITY G3r. Also, the total of all extensions assigned for any purpose cannot exceed 36,065 for DEFINITY G3r.
10. Required Clan TCP/IP.

11. Total extensions is the count of all extension assignments for any use. Included in this count are “station extensions”, “miscellaneous extensions”, data extension groups (800 for csi and 7500 for r), PRI endpoint groups (8 for csi, 25 for si, and 50 for r) and trunk group extensions (99 for csi/si and 666 for r).
12. Station extensions consist of attendant extensions (maximum 28 for r), station set assignments (including ACD agent physical sets), a WOH (administered without hardware) and administered Logical Agent IDs.
13. Miscellaneous extensions consist of VDNs, hunt groups, announcements, LDNs, PCOL groups, common shared extensions, access endpoints, administered TSCs, Code Calling IDs, TEGs, and Phantom ACAs.
14. Total of the administered Login ID skill-pair members (total of the agent skills and AAS ports). This limit can be reached only if 4 skills or less are assigned per Login ID due to the ACD Members Administered (Login ID-skill pair) limits. The following shows this (for DEFINITY R6.3.3 or newer).

    Max. Login IDs With: csi/si r

    | | | |
    |---|---|---|
    | • 1 to 4 Skills Each | 1,500 | 10,000 |
    | • 10 Skills Each | 600 | 6,500 |
    | • 20 Skills Each | 300 | 3,250 |

15. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned.
16. Total of the administered Login ID-skill pair members (for agents and AAS ports).
17. The number of agents that can log into the same skill is limited by the Maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered.
18. With VAL (TN2501AP) boards, announcements are recorded as MS Windows wave files and can be transferred via FTP to and from the board on a per file basis to a client PC using LAN connectivity. Backup and restore is accomplished via FTP of all the files on each board to and from the client PC.
19. The TN2501AP VAL boards do not use compression to store announcements. All announcement files are 64KB PCM wave files 8 KHz sampling, 8-bit mono).
20. Up to 5 board on the G3csi/si
21. Up to 10 boards on the G3r
22. Requires 2 byte CRVs.
23. Adjunct route not supported with the DEFINITY ONE offer.
24. DEFINITY ONE only supports 1 adjunct link.

* This software capacity cannot be reached on the ProLogix or DEFINITY ONE platform (for csi memory configurations) due to station and trunk hardware limits (500/600 maximum ports for ProLogix and168 ports for DEFINITY ONE). See the ProLogix or DEFINITY ONE Offer Definitions for details.

## DEFINITY R9 capacities

This table shows the capacities that are related to Call Center on the DEFINITY R9.

Capacities shown are for both Category A (ECS and ProLogix) and Category B (BCS and GuestWorks) except when a Category B is specified in the Item callout. ProLogix or DEFINITY ONE hardware limitations apply for some csi capacities, as indicated by Footnote *. EAS, ASAI, CMS, and CVX1 limits do not apply with Category B since EAS,ASAI, and CMS are not supported with the Category B configurations. Only Vectoring (Basic) and Vectoring ((Prompting) are provided with Category B (no advanced vectoring features are available).

**Table 2-2. DEFINITY R9 Call Center Capacities**

| Item | R9csi | R9si | R9r |
|---|---|---|---|
| **Automatic Call Distribution (ACD) (Traditional ACD -- without EAS[1]** | | | |
| Announcements per Split | 2 | 2 | 2 |
| Announcements per System | 128 | 128 | 1000 |
| Splits | 99 | 99 | 999 |
| ACD Members per Split | 200 | 200 | 1500 |
| Maximum Administered ACD members[2] (Category A only) | 1000* | 1000 | 10000 |
| Maximum Administered ACD members (Category B) | 150 | 150 | 150 |
| Logged-in splits per agent[3] | 4 | 4 | 4 |
| Maximum ACD Agents (per system) When Each Logs Into:[4] (Category A only) | | | |
| 1 Split | 500* | 500 | 5200 |
| 2 Splits | 500* | 500 | 5000 |
| 3 Splits | 333* | 333 | 3333 |
| 4 Splits | 250* | 250 | 2500 |
| Maximum ACD Agents (per system) When Each Logs Into: (Category B) | | | |
| 1 Split | 150 | 150 | 150 |
| 2 Splits | 75 | 75 | 75 |
| 3 Splits | 50 | 50 | 50 |
| 4 Splits | 37 | 37 | 37 |

*Continued on next page*

**Table 2-2. DEFINITY R9 Call Center Capacities *(Continued)***

| Item | R9csi | R9si | R9r |
|---|---|---|---|
| Queue Slots per Group[5] | 200 | 200 | 999 |
| Queue Slots per System[6] | 1500 | 1500 | 25000 |
| **Basic Call Management System (BCMS)** | | | |
| Measured Agents or Login IDs | 400 | 400 | 2000 |
| Measured Agents per Split | 200 | 200 | 999 |
| Measured Splits | 99 | 99 | 600 |
| Measured Trunk Groups | 32 | 32 | 32 |
| Measured VDNs | 99 | 99 | 512 |
| Maximum Agents Displayed by Monitor BCMS Split Command[7] | 100 | 100 | 100 |
| Maximum BCMS Terminals | 3 | 3 | 4 |
| Maximum Active Maintenance Commands for System | 1 | 1 | 5 |
| Maximum Simultaneous BCMS Terminals in Monitor Mode[8] | 1 | 1 | 3 |
| Reporting Periods | | | |
| Intervals | 25 | 25 | 25 |
| Days | 7 | 7 | 7 |
| **Call Vectoring** | | | |
| BSR application routing table entries (app-loc pairs) (Category A only) | 1000 | 1000 | 1000 |
| Collected digits for Call Prompting | 16 | 16 | 16 |
| Dial-ahead digits for Call Prompting | 24 | 24 | 24 |
| Holiday Tables | 10 | 10 | 10 |
| Maximum Skills a to which a Call Can Simultaneously Queue | 3 | 3 | 3 |
| Priority Levels | 4 | 4 | 4 |
| Recorded Announcements/Audio Sources for Vector Delay | 128 | 128 | 1000 |
| Steps per Vector | 32 | 32 | 32 |
| Vector Directory Numbers (VDNs) administered on switch (Category A only) | 512 | 512 | 20000[9] |
| Vector Directory Numbers (VDNs) (Category B) | 10 | 10 | 20 |

***Continued on next page***

**Table 2-2. DEFINITY R9 Call Center Capacities *(Continued)***

| Item | R9csi | R9si | R9r |
|---|---|---|---|
| VDNs measured by CMS (Category A only) | 512 | 512 | 20000 |
| Vectors per System (Category A) | 256 | 256 | 999 |
| Vectors per System (Category B) | 10 | 10 | 20 |
| Vector Routing Tables (Category A only) | 10 | 10 | 100 |
| **CMS-to-Switch Links[10]** | 1 or 2 | 1 or 2 | 1 or 2 |
| **Dial Plan Related Limits** | | | |
| Extensions (total)[11] | 3500* | 3500* | 36065 |
| Station extensions[12] | 2416* | 2416* | 25028 |
| Miscellaneous extensions[13] | 900 | 900 | 20317 |
| **Expert Agent Selection (EAS)** | | | |
| Skill Groups | 99 | 99 | 999 |
| VDN Skill Preferences | 3 | 3 | 3 |
| Maximum Skills to which a Call Can Simultaneously Queue | 3 | 3 | 3 |
| Maximum Administered Agent Login IDs[14] | 1500 | 1500 | 10000 |
| Maximum Staffed Agent Login IDs[15] | 500* | 500 | 5200 |
| Max Administered ACD Members (Login ID-skill pairs)[16] | 6000 | 6000 | 65000 |
| Maximum Staffed ACD Members | 1000* | 1000 | 10000 |
| Maximum Skills per Agent | 20 | 20 | 20 |
| Skill levels (preferences) per Agent Skill | 16 | 16 | 16 |
| Maximum logged in EAS Agents (per system) When Each Has:[17] | | | |
| 1 Skill | 500* | 500 | 5200 |
| 2 Skills | 500* | 500 | 5000 |
| 4 Skills | 250 | 250 | 2500 |
| 10 Skills | 100 | 100 | 1000 |
| 20 Skills | 50 | 50 | 500 |
| **Hunt Group Limits** | | | |
| Announcements per group | 1 | 1 | 1 |
| Announcements per system | 128 | 128 | 1000 |
| Splits/skills/hunt groups | 99 | 99 | 999 |

***Continued on next page***

**Table 2-2. DEFINITY R9 Call Center Capacities *(Continued)***

| Item | R9csi | R9si | R9r |
|---|---|---|---|
| Members per split/skill/hunt group | 200 | 200 | 1500 |
| Split/skill/hunt group queue slots for system | 1500 | 1500 | 25000 |
| Split/skill/hunt group queue slots per group | 200 | 200 | 999 |
| **Recorded Announcements or Audio Sources for Vector Delay** | | | |
| Announcement/audio sources | 128 | 128 | 1000 |
| Analog and AUX Trunk | | | |
| Queue slots per announcement | 150 | 150 | 1000 |
| Queue slots per system | 150 | 150 | 1000 |
| Calls connected to same announcement | 150 | 150 | 1000 |
| Integrated Announcements | | | |
| Announcement circuit packs (TN750C) | 5 | 5 | 10 |
| Channels per pack | 16 | 16 | 16 |
| Pack contents saved | 1 | 1 | 1 |
| Queue slots for system | 200 | 200 | 4000 |
| Calls connected to same announcement | 50 | 50 | 1000 |
| Recording time at 16 KB per pack | 8:32 | 8:32 | 8:32 |
| Recording time as 32 KB per pack | 4:16 | 4:16 | 4:16 |
| Recording time at 64 KB per pack | 2:08 | 2:08 | 2:08 |
| **Trunks and Trunk Groups** | | | |
| Trunk groups | 99 | 99 | 666 |
| Trunks (measured + unmeasured) | 400* | 400 | 4000 |
| **VuStats** | | | |
| Measured agents or Login IDs | 400 | 400 | 2000 |
| Measured splits | 99 | 99 | 600 |
| Measured trunk groups | 32 | 32 | 32 |
| Measured VDNs | 99 | 99 | 512 |
| Interval reporting periods | 25 | 25 | 25 |
| Days reporting periods | 1 | 1 | 1 |
| Display formats | 50 | 50 | 50 |
| Simultaneous updating displays | 100 | 100 | 500 |

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**Table 2-2. DEFINITY R9 Call Center Capacities *(Continued)***

| Item | R9csi | R9si | R9r |
|---|---|---|---|
| **CallVisor ASAI** | | | |
| Adjunct control associations per call | 1 | 1 | 1 |
| Active adjunct control associations | 800 | 800 | 7000[18] |
| Active adjunct route requests system-wide[19] | 300 | 300 | 2000 |
| Active adjunct route requests per link[19] | 300 | 300 | 2000 |
| Active notifications per call | 3 | 3 | 6 |
| Active notifications per split domain | 3 | 3 | 6 |
| Call controllers per call | 1 | 1 | 1 |
| Call monitors per call | 28 | 28 | 28 |
| CRVs ECS to adjunct | 500 | 500 | 4000 |
| Domain control associations per call | 12 | 12 | 24 |
| Domain control station associations | 2000 | 2000 | 6000 |
| Domain control split/skill associations | 300 | 300 | 2000 |
| Domain controllers per station domain | 2 | 2 | 4 |
| Domain-controllers per split/skill domain | 4 | 4 | 8 |
| Notification requests (Monitors) | 300 | 300 | 10000 |
| Maximum calls with send DTMF active | 16 | 16 | 32 |
| Number of CallVisor ASAI links (open and proprietary)[20] (Category A only) | 8 | 8 | 16 |
| Number of CallVisor ASAI links (open and proprietary) (Category B) | 1 | 1 | 16 |
| Maximum simultaneous calls being classified | 80 | 80 | 600 |
| Monitors per VDN or split | 6 | 6 | 6 |
| Split/skill domain controls system wide | 300 | 300 | 2000 |
| Simultaneous billing (MultiQuest) request | 100 | 100 | 1000 |
| Station controllers per station | 4 | 4 | 4 |
| Selected listen-disconnected paths | 75 | 75 | 300 |
| Messages per second per ASAI/BRI link (Category A only) | 20 | 20 | 30 |
| Messages per second per ASAI/BRI link (Category B) | 30 | 30 | 30 |

***Continued on next page***

**Table 2-2. DEFINITY R9 Call Center Capacities *(Continued)***

| Item | R9csi | R9si | R9r |
|---|---|---|---|
| Messages per second per MAPD LAN Gateway link | not known | not known | 180 |
| Messages per second per system | 80 | 80 | 240 |
| LAN Gateway links per multifunction board | 4 | 4 | 4 |
| LAN Gateway Links per MAPD | 8 | 8 | 8 |

1. AAS ports are to be included in the ACD Members, Logged-In Agents, and Logged-In IDs Staffed counts on DEFINITY ECS. Only measured logged-in ACD agent-split/skill pairs (including AAS ports) are counted toward the CMS limits. Category B does not offer EAS (so EAS limits are not applicable for Category B offers)
2. Also called administered agent-split pairs. Member capacity is used by ACD agents, Auto-Available Splits (AAS) ports (e.g., VRUs), non-ACD hunt groups (hunting groups with or without queues, Message Center Service, INTUITY/AUDIX, Remote AUDIX, etc.).
3. An agent can be assigned more splits during administration but only this number can be simultaneously logged into.
4. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned
5. Queue slots are shared across non-ACD, ACD (splits/skills) and AAS hunt groups.
6. See previous note.
7. The Monitor Split command will only display status for the first 100 agents logged into the split regardless of how many additional agents log into the split.
8. 12.2 BCMS monitoring, being a maintenance command, is limited by the active maintenance commands limit, reduced by 2 in the “r” system configuration (since 2 active command slots are reserved for the INADS and SAT logins respectively).
9. VDNs are counted as part of the miscellaneous extensions capacity. The total of VDNs, hunt groups, announcements, LDNs, TEGs, PCOL groups, access endpoints, administered TSCs and Code Calling IDs extensions and common shared extensions cannot exceed 20,317 for DEFINITY G3r. In addition, the total of stations (station extensions including ACD agent physical set extensions, Logical Agent IDs, and AWOH) assigned and the VDNs assigned can not exceed 25,000 for DEFINITY G3r. Also, the total of all extensions assigned for any purpose cannot exceed 36,065 for DEFINITY G3r.
10. Required Clan TCP/IP.
11. Total extensions is the count of all extension assignments for any use. Included in this count are “station extensions”, “miscellaneous extensions”, data extension groups (800 for csi and 7500 for r), PRI endpoint groups (8 for csi, 25 for si, and 50 for r) and trunk group extensions (99 for csi/si and 666 for r).
12. Station extensions consist of attendant extensions (maximum 28 for r), station set assignments (including ACD agent physical sets), a WOH (administered without hardware) and administered Logical Agent IDs.
13. Miscellaneous extensions consist of VDNs, hunt groups, announcements, LDNs, PCOL groups, common shared extensions, access endpoints, administered TSCs, Code Calling IDs, TEGs, and Phantom ACAs.
14. Total of the administered Login ID skill-pair members (total of the agent skills and AAS ports). This limit can be reached only if 4 skills or less are assigned per Login ID due to the ACD Members Administered (Login ID-skill pair) limits. The following shows this (for DEFINITY R6.3.3 or newer).

    Max. Login IDs With: csi/si r

    - 1 to 4 Skills Each 1,500 10,000
    - 10 Skills Each 600 6,500
    - 20 Skills Each 300 3,250

15. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned.
16. Total of the administered Login ID-skill pair members (for agents and AAS ports).
17. The number of agents that can log into the same skill is limited by the Maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered.
18. Requires 2 byte CRVs.
19. Adjunct route not supported with the DEFINITY ONE offer.
20. DEFINITY ONE only supports 1 adjunct link.

* This software capacity cannot be reached on the ProLogix or DEFINITY ONE platform (for csi memory configurations) due to station and trunk hardware limits (500/600 maximum ports for ProLogix and168 ports for DEFINITY ONE). See the ProLogix or DEFINITY ONE Offer Definitions for details.

# DEFINITY R8 capacities

This table shows the capacities that are related to Call Center on the DEFINITY R8.

**Table 2-3. DEFINITY R8 Call Center Capacities**

| Item | R8csi | R8si | R8r |
|---|---|---|---|
| **Automatic Call Distribution (ACD)** | | | |
| Announcements per Split | 2 | 2 | 2 |
| Announcements per System | 128 | 128 | 1000 |
| Splits | 99 | 99 | 999 |
| ACD Members per Split | 200 | 200 | 1500 |
| Maximum Administered ACD members[1] | 1000* | 1000 | 10000 |
| Maximum ACD Agents (per system) When Each Logs Into:[2] | | | |
| 1 Split | 500 | 500 | 5200 |
| 2 Splits | 500 | 500 | 5000 |
| 3 Splits | 333 | 333 | 3333 |
| 4 Splits | 250 | 250 | 2500 |
| Logged-in Splits per Agent[3] | | | |
| No CMS | 4 | 4 | 4 |
| R2 or R3V1 CMS | 3 | 3 | 3 |
| R3V2 or newer CMS | 4 | 4 | 4 |
| Queue Slots per Group[4] | 200 | 200 | 999 |
| Queue Slots per System[5] | 1500 | 1500 | 25000 |
| **Call Vectoring** | | | |
| Maximum Skills a to which a Call Can Simultaneously Queue | 3 | 3 | 3 |
| Priority Levels | 4 | 4 | 4 |
| Recorded Announcements/Audio Sources for Vector Delay | 128 | 128 | 256 |
| Steps per Vector | 32 | 32 | 32 |
| Vector Directory Numbers (VDNs) | 512 | 512 | 20000[6] |
| CMS Measured VDNs[7] | 512 | 512 | 20000 |
| Vectors per System | 256 | 256 | 999 |

*Continued on next page*

**Table 2-3. DEFINITY R8 Call Center Capacities *(Continued)***

| Item | R8csi | R8si | R8r |
|---|---|---|---|
| Number of Collected Digits for Call Prompting or CINFO | 16 | 16 | 16 |
| Number of Dial-Ahead Digits for Call Prompting | 24 | 24 | 24 |
| Vector Routing Tables | 10 | 10 | 100 |
| BSR Application-Location Pairs[8] | 1000 | 1000 | 1000 |
| **Expert Agent Selection (EAS)** | | | |
| Skill Groups | 99 | 99 | 999 |
| VDN Skill Preferences | 3 | 3 | 3 |
| Maximum Skills to which a Call Can Simultaneously Queue | 3 | 3 | 3 |
| Maximum Administered Agent Login IDs[9] | 1500 | 1500 | 10000 |
| Maximum Staffed Agent Login IDs[10] | 500* | 500 | 5200 |
| Max Administered ACD Members (Login ID-skill pairs)[11] | 6000 | 6000 | 65000 |
| Maximum Staffed ACD Members | 1000* | 1000 | 10000 |
| Maximum Skills per Agent | | | |
| No CMS | 20 | 20 | 20 |
| R3V2 through R3V4 CMS | 4 | 4 | 4 |
| R3V5 or newer CMS | 20 | 20 | 20 |
| Skill levels (preferences) per Agent Skill | 16 | 16 | 16 |
| Maximum logged in EAS Agents (per system) When Each Has:[12] | | | |
| 1 Skill | 500* | 500 | 5200 |
| 2 Skills | 500* | 500 | 5000 |
| 4 Skills | 250 | 250 | 2500 |
| 10 Skills | 100 | 100 | 1000 |
| 20 Skills | 50 | 50 | 500 |
| **Trunks and Trunk Groups** | | | |
| DS1 Circuit Packs | 30* | 30 | 166 |
| Queue Slots for Trunks | 198 | 198 | 1332 |
| Measured Trunks in System | 400* | 400 | 4000 |

***Continued on next page***

**Table 2-3. DEFINITY R8 Call Center Capacities *(Continued)***

| Item | R8csi | R8si | R8r |
|---|---|---|---|
| Trunk Group Hourly Measurements | 25 | 25 | 75 |
| Trunk Groups in the System | 99 | 99 | 666 |
| Trunk Members in Trunk Groups | 99 | 99 | 256 |
| **Basic Call Management System (BCMS)** | | | |
| Measured Agents or Login IDs | 400 | 400 | 2000 |
| Measured Agents per Split | 200 | 200 | 999 |
| Measured Splits | 99 | 99 | 600 |
| Measured Trunk Groups | 32 | 32 | 32 |
| Measured VDNs | 99 | 99 | 512 |
| Maximum Agents Displayed by Monitor BCMS Split Command[13] | 100 | 100 | 100 |
| Maximum BCMS Terminals | 3 | 3 | 4 |
| Maximum Active Maintenance Commands for System | 1 | 1 | 5 |
| Maximum Simultaneous BCMS Terminals in Monitor Mode[14] | 1 | 1 | 3 |
| Reporting Periods | | | |
| Intervals | 25 | 25 | 25 |
| Days | 7 | 7 | 7 |

1. Also called administered agent-split pairs. Member capacity is used by ACD agents, Auto-Available Splits (AAS) ports (e.g., VRUs), non-ACD hunt groups (hunting groups with or without queues, Message Center Service, INTUITY/AUDIX, Remote AUDIX, etc.).
2. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned
3. An agent can be assigned more splits during administration but only this number can be simultaneously logged into.
4. Queue slots are shared across non-ACD, ACD (splits/skills) and AAS hunt groups.
5. See Note 4.
6. VDNs are counted as part of the miscellaneous extensions capacity. The total of VDNs, hunt groups, announcements, LDNs, TEGs, PCOL groups, access endpoints, administered TSCs and Code Calling IDs extensions and common shared extensions cannot exceed 20,317 for DEFINITY G3r. In addition, the total of stations (station extensions including ACD agent physical set extensions, Logical Agent IDs, and AWOH) assigned and the VDNs assigned can not exceed 25,000 for DEFINITY G3r. Also, the total of all extensions assigned for any purpose cannot exceed 36,065 for DEFINITY G3r.

7. With CentreVu CMS R3V8 (and earlier) when more than 2,000 VDNs are activated, permission checking is made inactive for viewing and modifying individual VDNs. All other permission checking continues for other entities, such as vectors. The 2-GB file size limit imposed by Informix SE (Standard Database Engine) limits the number of intervals of historical VDN data that can be collected for large numbers of VDNs. The limits can be determined using: Days=8, 158/VI where V=number VDNs (in thousands and I=number of collection intervals in a day (I=60h/i where h=collection hours per day and i=interval period in minutes).
8. BSR application numbers and location numbers are limited to a range of 1 to 255 (i.e., each is limited to 255).
9. Total of the administered Login ID skill-pair members (total of the agent skills and AAS ports). This limit can be reached only if 4 skills or less are assigned per Login ID due to the ACD Members Administered (Login ID-skill pair) limits. The following shows this (for DEFINITY R6.3.3 or newer).

   Max. Login IDs With: csi/si r

   - 1 to 4 Skills Each 1,500 10,000
   - 10 Skills Each 600 6,500
   - 20 Skills Each 300 3,250
10. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned.
11. Total of the administered Login ID-skill pair members (for agents and AAS ports).
12. The number of agents that can log into the same skill is limited by the Maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered.
13. The Monitor Split command will only display status for the first 100 agents logged into the split regardless of how many additional agents log into the split.
14. 12.2 BCMS monitoring, being a maintenance command, is limited by the active maintenance commands limit, reduced by 2 in the “r” system configuration (since 2 active command slots are reserved for the INADS and SAT logins respectively).

* Software capacity limit cannot be achieved due to hardware capacity limits for this platform.

# DEFINITY ECS R7 and DEFINITY ECS R6.3 capacities

This table shows the capacities that are related to Call Center on the DEFINITY ECS R7 and on the DEFINITY ECS R6.3.

**Table 2-4. DEFINITY ECS R7 and DEFINITY ECS R6.3 Call Center Capacities**

| Item | R6.3/R7 csi | R6.3/R7 si | R6.3/R7 r |
|---|---|---|---|
| **Automatic Call Distribution (ACD)** | | | |
| Announcements per Split | 2 | 2 | 2 |
| Announcements per System | 128 | 128 | 256 |
| Splits | 99 | 99 | 600 |
| ACD Members per Split | 200 | 200 | 999 |
| Maximum Administered ACD members[1] | 1000* | 1000 | 10000 |
| Maximum ACD Agents (per system) When Each Logs Into:[2] | | | |
| 1 Split | 500 | 500 | 5200 |
| 2 Splits | 500 | 500 | 5000 |
| 3 Splits | 333 | 333 | 3333 |
| 4 Splits | 250 | 250 | 2500 |
| Logged-in Splits per Agent[3] | | | |
| No CMS | 4 | 4 | 4 |
| R2 or R3V1 CMS | 3 | 3 | 3 |
| R3V2 or newer CMS | 4 | 4 | 4 |
| Queue Slots per Group[4] | 200 | 200 | 999 |
| Queue Slots per System[5] | 1500 | 1500 | 15000 |
| **Call Vectoring** | | | |
| Maximum Skills a to which a Call Can Simultaneously Queue | 3 | 3 | 3 |
| Priority Levels | 4 | 4 | 4 |
| Recorded Announcements/Audio Sources for Vector Delay | 128 | 128 | 256 |
| Steps per Vector | 32 | 32 | 32 |

*Continued on next page*

**Table 2-4. DEFINITY ECS R7 and DEFINITY ECS R6.3 Call Center Capacities *(Continued)***

| Item | R6.3/R7 csi | R6.3/R7 si | R6.3/R7 r |
|---|---|---|---|
| Vector Directory Numbers (VDNs) | 512 | 512 | 20000[6] |
| CMS Measured VDNs[7] | 512 | 512 | 8000 |
| Vectors per System | 256 | 256 | 512 |
| Number of Collected Digits for Call Prompting or CINFO | 16 | 16 | 16 |
| Number of Dial-Ahead Digits for Call Prompting | 24 | 24 | 24 |
| Vector Routing Tables | 10 | 10 | 100 |
| BSR Application-Location Pairs[8] | 1000 | 1000 | 1000 |
| **Expert Agent Selection (EAS)** | | | |
| Skill Groups | 99 | 99 | 600 |
| VDN Skill Preferences | 3 | 3 | 3 |
| Maximum Skills to which a Call Can Simultaneously Queue | 3 | 3 | 3 |
| Maximum Administered Agent Login IDs[9] | 1500 | 1500 | 10000 |
| Maximum Staffed Agent Login IDs[10] | 500* | 500 | 5200 |
| Max Administered ACD Members (Login ID-skill pairs)[11] | 6000 | 6000 | 65000 |
| Maximum Staffed ACD Members | 1000* | 1000 | 10000 |
| Maximum Skills per Agent | | | |
| No CMS | 20 | 20 | 20 |
| R3V2 through R3V4 CMS | 4 | 4 | 4 |
| R3V5 or newer CMS | 20 | 20 | 20 |
| Skill levels (preferences) per Agent Skill | 16 | 16 | 16 |
| Maximum logged in EAS Agents (per system) When Each Has:[12] | | | |
| 1 Skill | 500* | 500 | 5200 |
| 2 Skills | 500* | 500 | 5000 |
| 4 Skills | 250 | 250 | 2500 |
| 10 Skills | 100 | 100 | 1000 |
| 20 Skills | 50 | 50 | 500 |

***Continued on next page***

**Table 2-4. DEFINITY ECS R7 and DEFINITY ECS R6.3 Call Center Capacities *(Continued)***

| Item | R6.3/R7 csi | R6.3/R7 si | R6.3/R7 r |
|---|---|---|---|
| **Trunks and Trunk Groups** | | | |
| DS1 Circuit Packs | 30* | 30 | 166 |
| Queue Slots for Trunks | 198 | 198 | 1332 |
| Measured Trunks in System | 400* | 400 | 4000 |
| Trunk Group Hourly Measurements | 25 | 25 | 75 |
| Trunk Groups in the System | 99 | 99 | 666 |
| Trunk Members in Trunk Groups | 99 | 99 | 256 |
| **Basic Call Management System (BCMS)** | | | |
| Measured Agents or Login IDs | 400 | 400 | 2000 |
| Measured Agents per Split | 200 | 200 | 999 |
| Measured Splits | 99 | 99 | 600 |
| Measured Trunk Groups | 32 | 32 | 32 |
| Measured VDNs | 99 | 99 | 512 |
| Maximum Agents Displayed by Monitor BCMS Split Command[13] | 100 | 100 | 100 |
| Maximum BCMS Terminals | 3 | 3 | 4 |
| Maximum Active Maintenance Commands for System | 1 | 1 | 5 |
| Maximum Simultaneous BCMS Terminals in Monitor Mode[14] | 1 | 1 | 3 |
| Reporting Periods | | | |
| Intervals | 25 | 25 | 25 |
| Days | 7 | 7 | 7 |

1. Also called administered agent-split pairs. Member capacity is used by ACD agents, Auto-Available Splits (AAS) ports (e.g., VRUs), non-ACD hunt groups (hunting groups with or without queues, Message Center Service, INTUITY/AUDIX, Remote AUDIX, etc.).
2. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned
3. An agent can be assigned more splits during administration but only this number can be simultaneously logged into.
4. Queue slots are shared across non-ACD, ACD (splits/skills) and AAS hunt groups.
5. See Note 4.

6. VDNs are counted as part of the miscellaneous extensions capacity. The total of VDNs, hunt groups, announcements, LDNs, TEGs, PCOL groups, access endpoints, administered TSCs and Code Calling IDs extensions and common shared extensions cannot exceed 20,317 for DEFINITY G3r. In addition, the total of stations (station extensions including ACD agent physical set extensions, Logical Agent IDs, and AWOH) assigned and the VDNs assigned can not exceed 25,000 for DEFINITY G3r. Also, the total of all extensions assigned for any purpose cannot exceed 36,065 for DEFINITY G3r.
7. With CentreVu CMS R3V8 (and earlier) when more than 2,000 VDNs are activated, permission checking is made inactive for viewing and modifying individual VDNs. All other permission checking continues for other entities, such as vectors. The 2-GB file size limit imposed by Informix SE (Standard Database Engine) limits the number of intervals of historical VDN data that can be collected for large numbers of VDNs. The limits can be determined using: Days=8, 158/VI where V=number VDNs (in thousands and I=number of collection intervals in a day (I=60h/i where h=collection hours per day and i=interval period in minutes).
8. BSR application numbers and location numbers are limited to a range of 1 to 255 (i.e., each is limited to 255).
9. Total of the administered Login ID skill-pair members (total of the agent skills and AAS ports). This limit can be reached only if 4 skills or less are assigned per Login ID due to the ACD Members Administered (Login ID-skill pair) limits. The following shows this (for DEFINITY R6.3.3 or newer).

   Max. Login IDs With: csi/si r

   - 1 to 4 Skills Each 1,500 10,000
   - 10 Skills Each 600 6,500
   - 20 Skills Each 300 3,250
10. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned.
11. Total of the administered Login ID-skill pair members (for agents and AAS ports).
12. The number of agents that can log into the same skill is limited by the Maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered.
13. The Monitor Split command will only display status for the first 100 agents logged into the split regardless of how many additional agents log into the split.
14. 12.2 BCMS monitoring, being a maintenance command, is limited by the active maintenance commands limit, reduced by 2 in the “r” system configuration (since 2 active command slots are reserved for the INADS and SAT logins respectively).

* Software capacity limit cannot be achieved due to hardware capacity limits for this platform.

# DEFINITY ECS R5, DEFINITY ECS R6.1, and DEFINITY ECS R6.2 capacities

This table shows the capacities that are related to Call Center on the DEFINITY ECS R5 and on the DEFINITY ECS R6.1/6.2.

**Table 2-5. DEFINITY ECS R5 and DEFINITY ECS R6.1/6.2 Call Center Capacities**

| Item | R5vs/si | R5si+M | R5r | R6r |
|---|---|---|---|---|
| Agents per System | 150 | 500 | 5200 | 5200 |
| Agents per Split | 150 | 200 | 999 | 999 |
| Agent Login IDs | 450 | 500 | 10000 | 10000 |
| Skill Groups | 24 | 99 | 600 | 600 |
| Splits | 24 | 99 | 600 | 600 |
| Trunk Groups | 32 | 99 | 665 | 665 |
| Trunks | 100 | 400 | 4000 | 4000 |
| Vectors | 48 | 256 | 512 | 512 |
| Vector Routing — Tables | 5 | 0 | 100 | 100 |
| Vector Routing — Entries per Table | 100 | 100 | 100 | 100 |
| Vectoring Audio/Music Sources[1] | 128 | 128 | 256 | 256 |
| VDNs — Total | 100 | 512 | 20000 | 20000 |
| VDNs — Measured | 100 | 512 | 2000 | 8000 |
| Priority Levels — without Vectoring | 2 | 2 | 2 | 2 |
| Priority Levels — with Vectoring | 4 | 4 | 4 | 4 |
| Queue Slots per Split | 200 | 200 | 999 | 999 |
| Queue Slots (Split) per System | 200 | 1500 | 15000 | 15000 |
| Recorded Announcements | 128 | 128 | 256 | 256 |
| Integrated Announcement Boards | 1 | 5 | 10 | 10 |
| Recorded Announcement Queue Slots — Integrated Announcement Board | 25 | 200 | 4000 | 4000 |
| Recorded Announcement Queue Slots — Analog and Auxiliary Trunk | 50 | 150 | 1000 | 1000 |

*Continued on next page*

**Table 2-5. DEFINITY ECS R5 and DEFINITY ECS R6.1/6.2 Call Center Capacities *(Continued)***

| Item | R5vs/si | R5si+M | R5r | R6r |
|---|---|---|---|---|
| Recorded Announcement Queue Slots — Integrated Announcement Board | 25 | 50 | 1000 | 1000 |
| Recorded Announcement Queue Slots — Analog Port | 50 | 150 | 1000 | 1000 |
| Recorded Announcement Queue Slots — Auxiliary Trunk | 50 | 150 | 1000 | 1000 |

1. 128 is the system maximum for recorded announcements and music sources. Each announcement subtracts one from the maximum number of music sources and vice versa.

# DEFINITY G3V2, DEFINITY G3V3, and DEFINITY G3V4 switch capacities

This table shows the capacities of Generic 3 Version 2 to Version 4 switches. “ABP” is the Advantage Business Package; “PBP” is the Premier Business Package.

**Table 2-6. DEFINITY G3V2, DEFINITY G3V3, and DEFINITY G3V4 Call Center Capacities**

| Item | G3V/s | | G3i | | G3r | |
|---|---|---|---|---|---|---|
| | V2 & V3 ABP/PBP | V4 ABP/PBP | V2&V3 | V4 | V2&V3 | V4 |
| Agents per System | 150 | 150 | 500 | 500 | 5200 | 5200 |
| Agents per Split | 150 | 150 | 200 | 200 | 999 | 999 |
| Agent Login IDs | NA/450 | NA/450 | 1500 | 1500 | 10000 | 10000 |
| Skill Groups | NA/24 | NA/24 | 99 | 99 | 255 | 255 |
| Splits | 12/24 | 12/24 | 99 | 99 | 255 | 255 |
| Trunk Groups | 16/32 | 16/32 | 99 | 99 | 665 | 665 |
| Trunks | 50/100 | 50/100 | 400 | 400 | 4000 | 4000 |
| Vectors | NA/48 | NA/48 | 256 | 256 | 512 | 512 |
| Vector Routing — Tables | NA | 5 | NA | 10 | NA | 100 |
| Vector Routing — Entries per Table | NA | 100 | NA | 100 | NA | 100 |
| Vectoring Audio/Music Sources[1] | 1 | 128 | 1 | 128 | 1 | 256 |
| VDNs — Total | NA/100 | NA/100 | 512 | 512 | 20000 | 20000 |
| VDNs — Measured | NA/100 | NA/100 | 512 | 512 | 2000 | 2000 |
| Priority Levels — without Vectoring | 2 | 2 | 2 | 2 | 2 | 2 |
| Priority Levels — with Vectoring | 4 | 4 | 4 | 4 | 4 | 4 |
| Queue Slots per Split | 200 | 200 | 200 | 200 | 999 | 999 |
| Queue Slots (Split) per System | 200 | 200 | 200 | 1000 | 10500 | 10500 |
| Recorded Announcements | 128 | 128 | 128 | 128 | 256 | 256 |
| Integrated Announcement Boards | 1 | 1 | 1 | 5 | | 10 |
| Recorded Announcement Queue Slots — Integrated Announcement Board | 50 | 25 | 50 | 50 | 1000 | 4000 |
| Recorded Announcement Queue Slots — Analog and Auxiliary Trunk | 50 | 50 | 150 | 150 | 128 | 1000 |

*Continued on next page*

**Table 2-6. DEFINITY G3V2, DEFINITY G3V3, and DEFINITY G3V4 Call Center Capacities *(Continued)***

| Item | G3V/s | | G3i | | G3r | |
|---|---|---|---|---|---|---|
| Recorded Announcement Calls Connected per Announcement — Integrated Announcement Board | 5 | 25 | 25 | 50 | 255 | 1000 |
| Recorded Announcement Calls Connected per Announcement — Analog Port | 5 | 50 | 25 | 150 | 128 | 1000 |
| Recorded Announcement Calls Connected per Announcement — Auxiliary Trunk | 5 | 50 | 25 | 150 | 255 | 1000 |

1. 128 is the system maximum for recorded announcements and music sources. Each announcement subtracts one from the maximum number of music sources and vice versa.

# DEFINITY G3V1 switch capacities

This table shows the capacities that are related to Call Center on the DEFINITY G3V1.

**Table 2-7. DEFINITY G3V1 Call Center Capacities**

| Item | G3Vs/s ABP/PBP | G3i | G3r |
|---|---|---|---|
| Agents per System | 150 | 500 | 3000 |
| Agents per Split | 150 | 200 | 999 |
| Skill | NA/24 | NA | NA |
| Splits | 12/24 | 99 | 99 |
| Trunk Groups | 16/32 | 99 | 666 |
| Trunks | 50/100 | 400 | 4000 |
| Vectors | NA/48 | 256 | 512 |
| VDNs | NA/100 | 500 | 3000 |
| Priority Levels — without Vectoring | 2 | 2 | 2 |
| Priority Levels — with Vectoring | 4 | 4 | 4 |
| Queue Slots per Split | 200 | 200 | 999 |
| Queue Slots (Split) per System | 200 | 1000 | 6000/10500 |
| Recorded Announcements — without Vectoring | 128 | 128 | 256 |
| Recorded Announcements — with Vectoring | NA/128 | 128 | 256 |
| Integrated Announcement Boards | 1 | 1 | 1 |
| Recorded Announcement Queue Slots — Integrated Announcement Board | 50 | 50 | 300 |
| Recorded Announcement Queue Slots — Analog and Auxiliary Trunk | 50 | 150 | 300 |
| Recorded Announcement Calls Connected per Announcement — Integrated Announcement Board | 5 | 5 | 255 |
| Recorded Announcement Calls Connected per Announcement — Analog Port | 5 | 5 | 128 |
| Recorded Announcement Calls Connected per Announcement — Auxiliary Trunk | 5 | 5 | 255 |

## CentreVu CMS maximum capacities

This table shows the maximum capacities of data that the CentreVu CMS can accept from the DEFINITY ECS.

**Table 2-8. CentreVu CMS R3V6, R3V8, and R3V9 Capacities**

| Item | R3V6 | R3V8 | CMS R3V9 | CMS R3V9.1 |
|---|---|---|---|---|
| **Automatic Call Distribution (ACD)** | | | | |
| Maximum Number of ACDs (multi-ACD configuration) | 8 | 8 | 8 | 8 |
| Maximum Staffed ACD members | 10000 | 10000[1] | 10000[1] | 32000 |
| Maximum administered Agent Login IDs | 10000 | 10000 | 10000 | 10000 |
| Logged-in agent -skill pairs over 8 ACDs | | | | 32000[1] |
| Admin log records | | | | 30000 |
| Maximum Splits | 1000 | 1000 | 1000 | 1000 |
| Maximum ACD Agents (per system) when each logs into:[2] | | | | |
| 1 Split | 10000 | 10000[3] | 10000[3] | 32000[3] |
| 2 Splits | 5000 | 5000 | 5000 | 32000 |
| 3 Splits | 3333 | 3333 | 3333 | 26664 |
| 4 Splits | 2500 | 2500 | 2500 | 20000 |
| **Call Vectoring** | | | | |
| Steps per Vector | 32 | 32 | 32 | 32 |
| Vector Directory Numbers (VDNs) | 8000 | 20000 | 20000 | 20000 |
| CMS Measured VDNs[4] | see footnote 4 | see footnote 4 | 20000 | 20000 |
| Vectors per System | 4096 | 7992 | 7992 | 7992 |
| **Expert Agent Selection (EAS)** | | | | |
| Skill Groups | 1000 | 1000 | 1000 | 1000 |
| Maximum Skills | 1000 | 1000 | 1000 | 1000 |
| Maximum Administered Agent Login IDs[5] | 10000 | 10000 | 10000 | 10000 |
| Maximum Staffed Agent Login IDs[6] | 10000 | 10000 | 10000 | 10000 |
| Maximum Skills per Agent | 20 | 20 | 20 | 20 |
| Skill levels (preferences) per Agent Skill | 16 | 16 | 16 | 16 |

*Continued on next page*

**Table 2-8. CentreVu CMS R3V6, R3V8, and R3V9 Capacities (Continued)**

| Item | R3V6 | R3V8 | CMS R3V9 | CMS R3V9.1 |
|---|---|---|---|---|
| Maximum logged in EAS Agents (per system) When Each Has:[7] | | | | |
| 1 Skill | 10000 | 10000 | 10000 | 32000 |
| 2 Skills | 5000 | 5000 | 5000 | 32000 |
| 4 Skills | 2500 | 2500 | 2500 | 20000 |
| 10 Skills | 1000 | 1000 | 1000 | 8000 |
| 20 Skills | 500 | 500 | 500 | 4000 |
| **Trunks and Trunk Groups** | | | | |
| Trunks (measured + unmeasured) | 4000 | 20000 | 20000[8] | 20000[9] |
| Trunks (measured) | | | | 4000[10] |
| Trunk Groups in the System | 666 | 666 | 666 | 666 |
| **Other Capacities** | | | | |
| Agent Traces Active | 250 | 400 | 400 | 400 |
| Agent Trace Records | 500000 | 500000 | 500000 | 500000 |
| BHCC | 40000 | 40000 | 40000 | 40000 |
| Call Records (internal) | NA | 5000 | 5000 | 5000 |
| Call Work Codes (CWCs)[11] | — | 1999 | 1999 | 1999 |
| Exception Records | — | 2000 | 2000 | 2000 |
| Login/Logout Records | — | 999999 | 999999 | 999999 |
| Simultaneous active client sessions[12] | — | 250 | 400 | 400 |
| CMS-switch links[13] | 1 | 1 or 2 | 1 or 2 | 1 or 2 |

1. This CMS limit is the maximum number of CMS measured agent-split/skill pairs (including AAS ports) that can be logged in.
2. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned
3. This CMS limit is the maximum number of CMS measured agent-split/skill pairs (including AAS ports) that can be logged in.
4. With CentreVu CMS R3V8 (and earlier) when more than 2,000 VDNs are activated, permission checking is made inactive for viewing and modifying individual VDNs. All other permission checking continues for other entities, such as vectors. The 2-GB file size limit imposed by Informix SE (Standard Database Engine) limits the number of intervals of historical VDN data that can be collected for large numbers of VDNs. The limits can be determined using: Days=8, 158/VI where V=number VDNs (in thousands and I=number of collection intervals in a day (I=60h/i where h=collection hours per day and i=interval period in minutes).

5. Total of the administered Login ID skill-pair members (total of the agent skills and AAS ports). This limit can be reached only if 4 skills or less are assigned per Login ID due to the ACD Members Administered (skill-pair) limits. The following shows this.

   Max. Login IDs With: csi/si r

   - 1 to 4 Skills Each 1,500 10,000
   - 10 Skills Each 600 4,000
   - 20 Skills Each 300 2,000

6. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned.
7. The number of agents that can log into the same skill is limited by the Maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered.
8. CMS requires allocation of trunk data structures called “unmeasured facilities” for tracking agent-to-agent, bridging, conference and transfer call sequences, which use capacity from the 20,000 total available trunk groups. The recommended assignment per ACD for “unmeasured facilities” is 25% of the measured trunks. Prior to Release 8, the total combination of measured trunks and unmeasured facilities across all ACDs could not exceed 4,000. This total has been increased to 20,000 in CMS R3V8. Note that the maximum allowed number of measured trunks for a single ACD is still 4,000 for the r and 400 for the csi/si switches.
9. CMS requires allocation of trunk data structures called “unmeasured facilities” for tracking agent-to-agent, bridging, conference and transfer call sequences, which use capacity from the 20,000 total available trunk groups. The recommended assignment per ACD for “unmeasured facilities” is 25% of the measured trunks. Prior to Release 8, the total combination of measured trunks and unmeasured facilities across all ACDs could not exceed 4,000. This total has been increased to 20,000 in CMS R3V8. Note that the maximum allowed number of measured trunks for a single ACD is still 4,000 for the r and 400 for the csi/si switches.
10. This is the per ACD limit. See CMS-specific limits for the measured plus unmeasured limit across all ACDs.
11. Maximum number of call work codes that can be stored in the call work code tables on CMS. This is not the maximum number that can be collected in call records.
12. Each client session may include CMS ASCII terminals (maximum of 250), CentreVu Supervisor, CentreVu Visual Vectors, and CentreVu Network Reporting clients.
13. Dual links to CMS require CLan TCP/IP.

# Measured extensions and multiple splits on a non-EAS switch

You can assign an agent extension to as many splits as desired. Multiple split assignments are commonly used in one or both of the following scenarios:

- The customer has agents who log into multiple splits.
- The customer has more than one shift of agents, where the shifts use the same set of phones but the agents do not work in the same splits.

Each extension-split assignment requires additional storage in CentreVu CMS. Therefore, assigning extensions to multiple splits can quickly consume the agent storage capacity on CentreVu CMS.

### Example

On a G3i, you assign 50 agent extensions to six splits. The switch sends 300 extension-split assignments to CentreVu CMS. In this case, CentreVu CMS creates space in real-time data storage for 300 agent splits, even if the number of agents logged in is less than 100.

## When assignments exceed capacity

The maximum number of agent-split configurations CentreVu CMS can measure is defined at installation or in the Data Storage Allocation window. If that number is less than the split-extension assignments CentreVu CMS receives from the switch, then the link between the switch and CentreVu CMS fails to come up.

### Example

Your CentreVu CMS allows up to 400 measured agent-split configurations, but the G3i switch has 450 split-extension assignments. The link fails to come up.

## Assignments are not logins

In a non-EAS environment, do not confuse “agent extensions assigned to multiple splits” and “agents logged into multiple splits.” Even if an agent’s extension is assigned to six splits, the agent can be logged into only three splits simultaneously. CentreVu CMS always creates space in real-time data storage for six agent-split pairs (one for each split), even though the agent is not simultaneously logged into all six splits.

In a standard EAS environment, the agent can be logged into four skills. In an EAS-PHD environment, the agent can be logged into up to 20 skills. However, the agent can be assigned to many more skills.

## CMS and measured trunks versus unmeasured facilities

CMS requires allocation of trunk data structures called “unmeasured facilities” for tracking agent-to-agent, bridging, conference, and transfer call sequences, which use capacity from the 20,000 available unmeasured plus measured trunk limit.

**NOTE:**
The “unmeasured facilities” are not actual trunks on the DEFINITY but are tracking records on the CMS.

The unmeasured facilities on CMS are required for:

- Internal calls (intraswitch) to a measured split or agent
- Internal calls to VDNs
- Calls made by agents to internal destinations or on an unmeasured facility group
- Transfers and conferences until the transfer/conference is complete.

The recommended assignment of unmeasured facilities per ACD is 25% of the measured trunks. However, more unmeasured facilities per ACD may be required if there are many internal calls active simultaneously on the DEFINITY that use “unmeasured facilities” on the CMS. The limit for unmeasured-type calls for a DEFINITY is the maximum number of call records that are available on the DEFINITY platform minus the number of active incoming calls. For example, the DEFINITY Generic 3r has 7172 call records available. If there are 3000 incoming calls active (measured or unmeasured), the limit for internal calls is 7172 minus 3000, or 4172.

Prior to Release 9, the total combination of measured trunks and unmeasured facilities across all ACDs could not exceed 4,000. This total has been increased to 20,000 in CMS R3V8. Note that the number of measured trunks for a single ACD is still 4,000 for the r and 400 for the csi/si switches.

## Determining allocation of measured trunks and unmeasured facilities

Below are examples of how to determine the allocation.

- **Example 1**: A single large call center has 1,950 logged-in agents. They want to queue a call for every agent, so they need 2 x 1,950 or 3,900 trunks. They assign 25% of the total trunk requirements (.25 x 3,900 = 975) as unmeasured facilities. Therefore, a total of 3,900 + 975 or 4,875 of the total "unmeasured plus measured" capacity will be utilized.
- **Example 2**: Consider the needs of a multi-ACD environment:
  ACD1 with 3,500 trunks needs 875 unmeasured facilities (.25 x 3,500 = 875)
  ACD2 with 2,500 trunks needs 625 unmeasured facilities
  ACD3 with 1,000 trunks needs 250 unmeasured facilities
  The total "unmeasured plus measured" capacity used will be 8,750 from the 20,000, leaving 11,250 for other ACDs or additions.

# DEFINITY ACD call center features

# 3

## Introduction

This chapter contains the definitions of the ACD Call Center features that are administered on the DEFINITY.

The DEFINITY Call Center forms from which these features are administered are defined in the next chapter.

Features that apply to Category A only (DEFINITY ECS and ProLogix) are identified as such. These features cannon be used with Category B (DEFINITY BCS and GuestWorks).

## Feature-related information

The information for each feature is usually presented under five headings:

- **Feature title**

  Gives the name and a brief overview of the feature. Tells what it does or how it serves the system.

- **Administering**

  Provides a list of the forms that are used to administer a feature. Required fields on these forms also are identified.

- **Detailed description**

  Provides more detailed, technical information about a feature. When appropriate, additional guidelines and examples are provided. In some cases, expanded technical information is provided on one or several aspects of the feature.

- **Considerations**

  Discusses the applications and benefits of a feature and any other factors to be considered when using the feature.

- **Interactions**

  Lists and briefly discusses other features that may significantly affect a feature. Interacting features are those that:

  — Depend on each other — if one of the features is provided, the other also must be provided.

  — Cannot coexist — if one of the features is provided, the other cannot be provided.

  — Affect each other — the normal operation of one feature modifies, or is modified by, the normal operation of the other feature.

  — Enhance each other — the features, in combination, provide improved service to the user.

## List of call center features

**Table 3-1. Call center features**


| Feature | Page |
|---|---|
| Abandoned call search | 3-4 |
| Add/Remove Skills (Category A only) | 3-6 |
| Agent Call Handling | 3-8 |
| Auto-Available Split/Skill | 3-23 |
| Automatic Call Distribution | 3-26 |
| Basic Call Management System | 3-41 |
| Best Service Routing (Category A only) | 3-44 |
| Call Management System (Category A only) | 3-59 |
| Call Prompting | 3-61 |
| Call Vectoring | 3-64 |
| CentreVu Advocate (Category A only) | 3-72 |
| Expert Agent Selection (Category A only) | 3-81 |
| Inbound Call Management | 3-90 |
| Information Forwarding (Category A only) | 3-97 |


***Continued on next page***

**Table 3-1. Call center features (Continued)**

| Feature | Page |
|---|---|
| Intraflow and Interflow | 3-103 |
| Look-Ahead Interflow (Category A only) | 3-106 |
| Multiple Call Handling | 3-112 |
| Network Call Redirection (NCR) (Category A only) | 3-118 |
| Queue Status Indications | 3-134 |
| Reason Codes (Category A only) | 3-136 |
| Redirection on No Answer | 3-140 |
| Remote Logout of Agent | 3-153 |
| Service Observing | 3-159 |
| Universal Call ID | 3-174 |
| VDN in a Coverage Path | 3-189 |
| VDN of Origin Announcement (Category A only) | 3-194 |
| Voice Response Integration (Category A only) | 3-200 |
| VuStats (Category A only) | 3-208 |

## Related feature or form

Refer to the *DEFINITY ECS Administrator's Guide*, 555-233-506, for more information about the following related features or forms:

- Announcements/Audio Sources
- Calling Party/Billing Number.
- CallVisor Adjunct-Switch Application Interface.
- Class of Restriction.
- Hunt Groups.
- Malicious Call Trace.
- Recorded Announcements (additional information also available in the "Recorded Announcements" appendix of this book).
- Service Observing.
- Callmaster phones.
- 500, 2500, K2500, 7101A, 7102A, 7103A, 7104A, 8110, OPS, DS1FD, DS1SA, and VRU phones.

# Abandoned call search

Abandoned Call Search allows the switch to identify abandoned calls if the central office (CO) does not provide timely disconnect supervision. An abandoned call is one in which the calling party hangs up before the call is answered. Note that Abandoned Call Search is suitable only for older COs that do not provide timely disconnect supervision. Most COs provide timely disconnect supervision and do not require Abandoned Call Search.

Before an incoming Automatic Call Distribution (ACD) call rings a hunt group member or agent, the system checks to make sure that the calling party has not abandoned the call. If the calling party has abandoned the call, the call does not ring the hunt group member or agent.

If a call has been abandoned, the system determines if the calling party is still connected to the ground-start trunk at the CO. To do this, the system flashes (that is, opens the tip-ring loop for 150 to 200 ms) the CO end of the trunk. If the calling party is still connected, the CO does not respond. If the calling party has abandoned the call, the CO sends the system a disconnect signal within 800 ms. The system interprets this as an abandoned call, releases the trunk, and the call does not ring the hunt group member or agent.

Outside of the U.S., a flash of this duration may be handled differently. Refer to *DEFINITY ECS Administrator's Guide*, 555-233-506, for more information about trunk flash.

## Administering abandoned call search

**Table 3-2. Required forms**

| Form | Field |
|---|---|
| Trunk Group<br>— CO<br>FX<br>WATS | ■ Abandoned Call Search |

You administer Abandoned Call Search on a per-trunk-group basis. Administer each ground-start CO, FX, and WATS trunk group either having Abandoned Call Search or not having it. Abandoned Call Search is not supported for tie trunks.

## Considerations

**NOTE:**
Abandoned Call Search works with ground-start analog trunks that *do not* provide disconnect supervision and that *do* react to a 500-ms break.

Some older COs can take as long as two minutes to notify the switch of a disconnect. Thus, the switch must determine within one second whether the call has been abandoned, before extending the call. Even with Abandoned Call Search or disconnect supervision, there is a small probability that a call will be extended to the destination hunt group after the caller has hung up. Abandoned Call Search and disconnect supervision significantly reduce that probability.

Abandoned Call Search allows agents and hunt group members to answer more calls because time is not wasted on abandoned calls. In addition, call-handling statistics that the Call Management System (CMS) generates are more accurate because it is clear when a call is abandoned.

Abandoned Call Search adds an overhead of up to one second to each call delivered to an agent.

# Add/Remove Skills (Category A only)

Add/Remove Skills allows an agent using Expert Agent Selection (EAS) to add or remove skills. A skill is a numeric identifier in the switch that refers to an agent's specific ability. For example, an agent who is able to speak English and Spanish could be assigned a Spanish-speaking skill with an identifier of 20. The agent then adds skill 20 to his or her set of working skills. If a customer needs a Spanish-speaking agent, the system routes the call to an agent with that skill.

Each agent can have up to 20 skills active at any one time. Agents can dial feature access codes (FACs) to add or remove a skill. Or a supervisor with console permission can enter an agent's login ID and add or remove an agent's skill. If a supervisor adds or removes a skill for an agent, the agent receives a change notification.

To determine if they need to add or remove a skill, agents and supervisors can use queue-status indications, VuStats, or Call Management System (CMS) or Basic Call Management System (BCMS) information. When adding a skill, the agent must specify the skill priority level (1 — 16).

On phones with displays, the system prompts the agent through the process of adding or removing a skill and displays the updated set of skills.

## Administering Add/Remove Skills

**Table 3-3. Required forms**

| Form | Field |
|---|---|
| Class of Restriction (COR) | ■ Add/Remove Agent Skills |
| Feature Access Code (FAC) | ■ Add Agent Skills<br>■ Remove Agent Skills |
| Language Translations | ■ 41-44 on Page 5 |
| Hunt Group | ■ Skill |
| Class of Service | ■ Administer console permissions for supervisors |

## Considerations

- A skill cannot be removed from an agent's skill set if the agent is on a call for that skill or in the After-Call-Work (ACW) state for that skill.
- With EAS, agents cannot remove their Direct Agent Skill.

## Interactions

- Auto-Available Skills (AAS)

  If an agent adds a skill that is administered as Auto-Available, on the Agent Login ID form, you must set the AAS field to **y** for that agent's login ID.

- BCMS

  BCMS begins tracking a new skill as soon as it is added. When an agent removes a skill, the real-time agent information specific to that skill is removed from the real-time reports, but it still appears on the historical reports.

- EAS-PHD

  When EAS-PHD is set as an option, agents cannot remove their Direct Agent Skill. In an EAS environment, agents must have at least one skill assigned to them during a login session. With EAS-PHD, agents can specify up to 20 skills.

  If EAS-PHD is not enabled, agents can specify only 4 skills.

- VuStats

  Because VuStats displays information gathered by BCMS whether BCMS is enabled or not, the BCMS interaction above applies to VuStats.

# Agent Call Handling

Agent Call Handling allows you to administer functions that Automatic Call Distribution (ACD) agents use to answer and process ACD calls.

You define the following agent capabilities:

- Agent login and logout
- Agent answering options: Automatic Answer (zip tone) or Manual Answer
- ACD work modes: Auxiliary Work (AUX Work), Auto-In, Manual-In, or After Call Work (ACW)
- Timed ACW
- Agent request for supervisor assistance
- ACD call disconnect (Release button)
- Stroke counts
- Call work codes
- Forced entry of stroke counts and call work codes

''Agent capacity and related limits'' describes agent-capacity planning.

**NOTE:**
All of these agent capabilities are also supported through the CallVisor Adjunct/Switch Applications Interface (ASAI). Refer to *DEFINITY ECS Administrator's Guide*, 555-233-506, for more information about the CallVisor Adjunct-Switch Application Interface.

## Administering Agent Call Handling

**Table 3-4. Required forms**

| Form | Field |
|---|---|
| Feature Access Code (FAC) | ■ Feature Access Codes for ACD features |
| Hunt Group | ■ Forced Stroke Count or Call Work Code<br>■ Timed ACW Interval |
| Vector Directory Number | ■ VDN Timed ACW Interval |

***Continued on next page***

**Table 3-4. Required forms (Continued)**

| Form | Field |
|---|---|
| Station (multi-appearance) | ■ Button/Feature Button Assignments<br>— manual-in<br>— auto-in<br>— aux-work<br>— after-call<br>— assist<br>— release<br>— work-code<br>— stroke-cnt<br>■ Active Station Ringing (DCP, Hybrid)<br>■ Idle/Active Ringing (Callmaster)<br>■ VuStats |
| Stations (all) | ■ Auto Answer |
| Attendant Console | ■ Feature Button Assignments<br>— after-call<br>— assist<br>— auto-in<br>— aux-work<br>— manual-in<br>— release<br>— work-code<br>— stroke-cnt<br>■ Auto Answer |
| Agent LoginID<br>(EAS only) | ■ All |

## Detailed description

This section describes how the switch controls agents' work.

**NOTE:**
This information applies generally to ACD; see ‘‘Expert Agent Selection (Category A only)’’ for more information on EAS.

### Agent login and logout

To receive ACD calls, an agent must log into the system. An agent can be logged into multiple splits/skills. If a hunt group is measured by Call Management System (CMS) or Basic Call Management System (BCMS) or is a skill, an agent must enter a login ID; otherwise, the login ID is optional.

#### Login

To log in, an agent goes off-hook and dials the login feature access code (FAC), followed by the split/skill number and the login ID, if required. If login is successful, the agent automatically enters Auxiliary Work mode for that split/skill. The Auxiliary Work button lamp for that split/skill, lights steadily and the agent hears the confirmation tone.

If the split/skill is measured, the system sends messages to CMS or BCMS that the agent (identified by login ID) has logged in and has entered Auxiliary Work mode.

Login is canceled and the agent receives intercept tone if any of the following occur during login:

- The agent dials an invalid login FAC or split/skill number (that is, the number of a split/skill that does not exist or to which the agent is not assigned).
- The agent is already logged into the maximum number of splits/skills.
- The agent dials a split/skill number for a split/skill that he or she is already logged into.

#### Logout

The agent should log out when he or she leaves for an extended period of time and is unavailable for ACD calls. If the split/skill is measured by CMS or BCMS and an agent logs out, a message is sent to the CMS or BCMS so that the agent's status is no longer measured. In a non-EAS environment, if an agent is logged into multiple splits, the agent should log out of each split.

When temporarily unavailable for calls, an agent should use Auxiliary work mode, rather than logging out. CMS or BCMS can continue tracking the agent's auxiliary work time.

To log out of a split, an agent goes off-hook and dials the logout FAC followed by the split number. If logout is successful, the agent hears confirmation tone and work-mode button lamps darken. The logout is canceled and the agent receives an intercept if any of the following occur during logout:

- The agent dials an invalid logout FAC or split number.
- The agent dials a split number for a split that he or she is not logged into.

If an agent is using a handset in Automatic Answer mode, the agent can log out simply by hanging up or turning off the headset. (This does not mean pressing the release button on a Callmaster phone.) This does not apply to quick-disconnect. If the agent pulls the handset to log out, the agent is automatically logged out of all splits that he or she has logged into.

## Agent answering options

An agent can answer ACD calls by using either a headset, handset, or speakerphone. You can assign an agent as either Automatic Answer or Manual Answer.

**NOTE:**
Use Automatic Answer with a headset. See ‘‘Agents with Automatic Answer’’ for more information.

### Automatic Answer

The information in this section applies to ACD and EAS environments.

An agent assigned to Automatic Answer hears zip tone and connects directly to incoming calls without ringing.

**NOTE:**
You can administer Automatic Answer to apply only to ACD calls or to apply to all calls terminating to the agent’s set. If all calls are Automatic Answer and the agent receives direct-extension calls, he or she should always activate Call Forwarding, or Send All Calls when leaving temporarily or for an extended period, so that calls do not terminate to an unstaffed station.

### Manual Answer

An agent assigned to Manual Answer hears ringing, and then goes off-hook to answer the incoming call.

## ACD work modes

At any given time, an agent can be in one of four work modes:

- Auxiliary Work (AUX)
- Auto-In
- Manual-In
- After Call Work (ACW)

An agent can change work modes at any time.

To enter any work mode, an agent presses the button or dials the FAC for that mode, depending on what you have administered. If the agent has no active or held calls, the work-mode button lamp lights steadily and CMS or BCMS is informed of the agent's mode change. If the agent has active or held calls, the lamp flashes until all calls are dropped, then the new work mode's lamp lights steadily and CMS or BCMS is informed of the agent's mode change.

The attempt is cancelled and the agent receives an intercept if the agent:

- Tries to enter a work mode for an invalid split/skill
- Tries to enter the work mode for a split/skill of which he or she is not a member
- Dials an invalid FAC

### Auxiliary Work mode

An agent should enter Auxiliary Work mode whenever taking a temporary break. This makes the agent unavailable for ACD calls and removes them from the most-idle-agent queue. CMS and BCMS can continue to track the agent.

In a non-EAS environment, when an agent is in AUX Work mode for a particular split, the agent may be available for ACD calls to other splits that the agent is logged into, depending on the agent's state in those splits. Even in AUX, the agent is still available for non-ACD calls. CMS/BCMS is notified whenever an agent in AUX Work mode receives an incoming non-ACD call or makes an outgoing call. When an agent logs into a split, he or she automatically enters AUX Work mode for that split.

**NOTE:**
Agents in vector-controlled splits/skills can go into AUX Work mode even if they are the last agent and calls are queued to that split/skill.

### Auto-In mode

In Auto-In mode, the agent automatically becomes available for answering new ACD calls upon disconnecting from an ACD call.

### Manual-In mode

In Manual-In mode, the agent automatically enters ACW mode for the split/skill upon disconnecting from an ACD call and is not available for any ACD calls. To become available for ACD calls, the agent must manually reenter either Auto-In mode or Manual-In mode.

### After Call Work mode

An agent should enter ACW mode when he or she needs to perform ACD-related activities, such as filling out a form as a result of an ACD call. The agent is unavailable for ACD calls to all splits/skills while in ACW mode. Switch administration determines whether the agent remains in the Most Idle Agent queue while in ACW.

When an agent is in the Manual-In mode and disconnects from an ACD call, he or she automatically enters ACW mode. Although no longer available for ACD calls, the agent is still available for non-ACD calls. CMS or BCMS is notified whenever an agent in ACW mode receives an incoming non-ACD call or makes an outgoing call.

## Timed After Call Work

With Timed ACW administered, an Auto-In agent is immediately placed in ACW mode for a specific length of time after completing the currently-active ACD call. When the Timed ACW interval expires, the agent automatically returns to the Auto-In work mode. If the agent activates ACW while not on a call, the agent is placed in ACW (not timed) mode regardless of whether the agent is in Auto-In or Manual-In mode.

Use Timed ACW to allow agents to rest between incoming ACD calls, or to pace agents when they have to complete work from the previous call within an allotted time. In addition, if you have Home Agent, use Timed ACW to allow agents additional time to dial a FAC to place themselves in a different work mode after the current ACD call is completed.

### Timed ACW and VDN

You can administer Timed ACW for all calls to a split/skill and/or to a VDN. Any completed calls to the split/skill or to the VDN, including direct agent calls, are followed by a timed ACW when the answering agent is in Auto-In work mode. If a VDN call routes to a split/skill, the Timed ACW interval for the VDN overrides the Timed ACW interval for the hunt group. VDN override applies to VDN-Timed ACW.

### Cancelling Timed ACW

When an agent activates Auto-In or Manual-In mode during Timed ACW, the agent becomes available and timed ACW is cancelled. An agent can change to Manual-In mode before or during a call. The system cancels Timed ACW and applies ACW (not timed) mode when the call is released. The agent remains in ACW until he or she requests another mode. When the agent releases an ACD call, the ACW lamp (if provided) lights. At the end of the administered Timed ACW interval, the ACW lamp goes dark and the Auto-In lamp lights.

Timed ACW also is canceled when an agent presses the ACW button or dials the ACW FAC.

If an agent activates Auxiliary Work mode during Timed ACW, the agent is placed in that mode and Timed ACW is cancelled.

## Agent request for supervisor assistance

To request assistance from the split/skill supervisor, an agent, with or without an active ACD call, presses the Assist button or puts the call on hold and dials the Assist FAC plus the split/skill number. The agent must be logged into the split/skill. Assist generates 3-burst ringing at the supervisor's station. If a split/skill supervisor is not assigned, the agent receives intercept tone.

Attendants should press the Start button before pressing the Assist button. This allows them to later transfer the call. This rings like a priority call at the supervisor's set.

When the agent presses the Assist button, the following happens:

1. If the agent is active on an ACD call, the ACD call is automatically placed on hold and a call is placed to the split/skill supervisor. If the agent is not active on an ACD call, a call is automatically placed to the supervisor.
2. CMS or BCMS is notified of the request and the supervisor's display shows that the call is a request for assistance. This rings like a priority call at the supervisor's set.
3. The caller hears silence or music on hold.
4. After the agent has talked to the supervisor, the agent can drop the assist call and return to the ACD call, set up a conference call with the supervisor and the calling party, or transfer the call to the supervisor.

When the agent puts the call on hold and dials the Assist FAC plus the split/skill number, the system handles the request as if the agent pressed the Assist button, except that the Assist call does not follow the supervisor's coverage path.

## Stroke counts

Stroke counts allow you to record in CMS the number of times that a particular customer-related event occurs. For example, agents could press a button each time a customer requests information on a certain item.

Stroke counts are reported to CMS in real time. The system does not store stroke counts. Use stroke counts only when CMS is connected and you have defined ACD splits/skills to be measured by CMS.

Stroke counts allow agents to record up to nine administrator-defined events on a per-call basis. You can assign 10 Stroke Count button types. Stroke Count 0 is reserved for tracking Audio Difficulty or poor transmission quality.

For troubleshooting purposes, CMS records the equipment location of the trunk that the agent was using when he or she pressed the Audio Difficulty button. Make sure that agents are aware that pressing this does not improve audio transmission quality.

To enter a stroke count, an ACD agent presses a Stroke Count button while off-hook. The system validates that the agent is either active on an ACD call or in the ACW mode for an ACD split/skill. If yes, the feature lamp lights steadily for two seconds to indicate activation and the stroke count is sent to CMS. If not, the feature lamp flutters and no message is sent.

## Call work codes (Category A only)

Call work codes are up to 16-digit sequences that ACD agents enter to record such customer-related information as account codes, social security numbers, or phone numbers. You define the codes for your site. Codes that agents enter are sent to CMS for storage for splits/skills measured by CMS and only when the link to the CMS is up. Agents must have multiappearance phones (for example, Callmaster) to enter call work codes.

To enter call work codes, the agent must be off-hook and either:

- On an ACD call
- In ACW mode after disconnecting from a call while in Manual-In mode
- In Timed ACW after disconnecting from a call while in Auto-In mode
- In Auto-In mode and pending for ACW mode

The sequence of event is as follows:

1. The agent select Call Work Code (CWC) button.
2. The CWC lamp lights steadily and a C: prompt appears on the agent's display. The agent must wait for the ready indication before entering the call work code or the caller hears the touch-tone digits being dialed.
3. Agent enters up to 16 digits on the dial pad. The agent can press * to erase digits.
4. The agent presses # to send the code entry to CMS.
5. The Call Work Code lamp goes dark and the display returns to normal.
6. If the agent presses any feature button or hangs up during digit collection, the code entry is cancelled and data is sent to CMS. The CWC lamp goes dark and the display is cleared.

Call work codes may be used by as many as 100 agents simultaneously. If 100 agents are simultaneously using this function, and another agent attempts to enter a call work code, the agent receives a display message to try again later.

### Forced entry of stroke counts and call work codes

You can administer a split/skill so that agents must enter a stroke count and/or a call work code before becoming available for another call using Manual-In mode.

**NOTE:**
Multiappearance phones or an attendant console are required for agents to enter stroke counts or call work codes.

To enter a stroke count and/or call work code, the agent must be on a call, or in ACW mode after releasing a call in Manual-In mode.

After releasing a call, the agent automatically enters ACW mode and cannot return to Manual-In mode until entering a stroke count or call work code. If the agent presses the Manual-In button or FAC before entering a stroke count or a call work code, the Manual-In lamp flutters or intercept tone is given.

Once the agent enters a stroke count or call work code and presses the Manual-In button or FAC, he or she returns to Manual-In mode and the Manual-In lamp lights.

Any of the agent's splits/skills can have Forced Entry assigned. If the agent goes into Auxiliary Work mode in any split/skill, the Forced Entry requirement for all other splits/skills is removed.

## Expanded technical information

### Agent capacity and related limits

Agent Sizing adds an overriding capacity limit to the number of logged-in ACD agents. It can be used to limit the number of logged-in ACD agents to a number less than (or equal to) the maximum supported by the system configuration.

The logged-in ACD agents limit applies to ACD agents in traditional (or non-EAS) ACD splits or in Expert Agent Selection (EAS) skills. Auto-Available Split/Skill (AAS) agent ports are logged in and counted when they are first assigned, while the non-AAS agents are counted when they actually log in. Each logged-in agent is counted as a single agent independent of the number of splits/skills logged in to for the Logged-in ACD agents limit. AAS and non-AAS agents are counted towards this limit whether they are BCMS/CMS measured or not.

Effective with the DEFINITY R8 and CentreVu Advocate, the Logged-in Advocate Agent Count feature counts the number of CentreVu Advocate agents who are logged in at the call center. The feature bases the count on whether or not a logged-in agent has any CentreVu Advocate feature(s), except Predicted Wait Time, assigned or associated with the agent. With this feature, CentreVu Advocate counted agents are still counted as ACD agents.

The agent sizing limit is administered by authorized Avaya personnel via the Logged-in ACD Agents option (and Logged-in Advocate Agent Count) on the System-Parameters Customer-Options form. The maximum number of allowed logged-in ACD agents is set to correspond to the configuration you purchase.

For agent sizing, if you have agents working in shifts, you should purchase enough agent capacity to allow for a smooth shift change. If agents on a subsequent shift are logging in before agents in the previous shift have logged out, agents could be denied login because too many agents are currently logged in. Additionally, the non-ACD and/or non-agent (AAS/VRU) use of Hunt Group resources must be considered. Call Center managers need to be aware of their logged-in ACD agent and other related limits when adding agents to handle a traffic peak or when planning a special campaign. Some of the resource utilization is displayed dynamically on the Display Capacities form.

Note that under certain configurations, the limit set in the Logged-In Agents field cannot be reached due to some other system limit being reached. In particular, note that the DEFINITY R5r and later configurations with EAS only supports up to 500 agents logged in if each has the maximum 20 skills assigned due to the 10,000 Hunt Group member limit.

In addition to the logged-in ACD agents limit, the number of agents supported is dependent on the upper limits that the system platform supports. The following limits must also be considered.

- Maximum Hunt Group members
  - — Non-ACD members include hunting groups with or without queues, Message Center Service groups, INTUITY/AUDIX groups and Remote AUDIX groups (refer to *DEFINITY ECS Administrator's Guide*, 555-233-506, for more information about Hunt Groups). Each line or port in a group is counted once when assigned.
  - — ACD members (also called agent-split pairs or agent-skill pairs with EAS). For agents in multiple splits/skills, each combination (pair) is counted as a member (e.g., an EAS agent logged into 4 skills or a non-EAS agent assigned to 4 splits counts as 4 members). Non-EAS ACD members are counted when assigned (note that many more splits can be assigned to an agent than can be logged into but each agent-split pair is still counted towards the limit). EAS ACD members are counted when they log in.
  - — Advocate Agents.
    Each logged-in CentreVu Advocate agent is counted as both an ACD member and as a CentreVu Advocate agent.
- Hunt Group members per group — Count of non-ACD or ACD members within a split/skill. Counting is done as above for maximum Hunt Group members.
- Additional traditional ACD (non-EAS) agents limits:
  - — Maximum logged-in agents system limit
  - — Maximum splits an agent can log into

- Additional EAS limits:
  - — **ACD members (skill pairs) administered** — Limits skill assignments to agents (each AAS port is counted as one skill pair)
  - — **Agent Login IDs Administered** — Limits number of AAS ports and EAS agents that can be pre-assigned
  - — **Agent Login IDs Logged-In (staffed) system limit** — Upper limit on the number of EAS agents (and AAS ports) that can be logged-in simultaneously
  - — **Skills per Agent** — The maximum number of skills a particular agent can be assigned
- Call Management System (CMS) logged in ACD members (agent-split/skill pairs) limits assigned. Both a Avaya setup and customer-administered limit is assigned in CMS. These limits are related to the CMS memory/hardware configuration equipped and are passed over the link to the DEFINITY to reduce/set the externally measured logged-in ACD member component of the Hunt Group member limit to that supported by CMS.
- BCMS internally measured ACD agents system limit. Non-EAS ACD agents counted when assigned while EAS agents are counted when logged in.

When the maximum number of ACD agents are logged in or any of the other above limits are reached, an agent who attempts to log in hears reorder tone or is otherwise denied log in. Also with EAS, an agent logging in may not have all the assigned skills logged in if the ACD member limit is reached.

The administrator of a non-EAS system can be blocked from adding agents to splits via the Hunt Group form.

The administrator of an EAS system can be blocked from assigning additional Login IDs or skills to an agent via the Login ID form if the relevant system limits are reached.

## Considerations

### Release button

Agents using Automatic Answer are logged out of all splits/skills when they disconnect from an ACD call by hanging up. Therefore, agents should use the Release button, if provided. This button is in addition to the fixed Release button on the attendant console.

### Timed ACW

To prevent agents from canceling Timed ACW by pressing the Manual-In or ACW buttons, do not assign these buttons to the agents' phones. Timed ACW cannot be assigned to AAS, adjunct-controlled, AUDIX, Remote AUDIX, or Message Center splits/skills. In addition, VDN-Timed ACW does not apply to calls routed to a converse split/skill by way of the *converse-on* vector command. Timed ACW assigned to a converse hunt group applies.

BCMS and CentreVu CMS track Timed ACW as standard ACW work states. Time spent in Timed ACW is not specifically identified.

### Nonvector-controlled splits/skills

For nonvector-controlled splits/skills, the last available agent in a split/skill cannot enter Auxiliary Work mode if any calls remain in the queue. (However, the agent can log out.)

When the last available agent tries to enter Auxiliary Work mode, the following occurs:

- The Auxiliary Work button flashes indicating the change is pending.
- New calls on the ACD split/skill either receive busy tone or redirect to coverage. Calls in the queue continue to route to the last available agent until the queue is empty.
- At the last available phone or console, the Auxiliary Work button lamp flashes until the queue is empty. The telephone then enters Auxiliary Work mode and the associated lamp lights steadily.

### Agents logged into multiple splits/skills

If an agent is logged into multiple splits/skills, the agent may become unavailable for calls to one split/skill because of activity at another split/skill. For example, if an agent enters After Call Work mode for one split/skill, the agent becomes unavailable for calls to other splits/skills.

An agent should not log into a split/skill while a call is on hold at the extension.

### Agents with Automatic Answer

Agents who use Automatic Answer should use a headset. The agent hears zip tone through the headset and automatically connects to a call.

If either the incoming trunk group or the agent's extension is data-restricted, the agent does not hear zip tone. Therefore, do not assign data-restriction to a headset user's extension.

It is not recommended that you use Automatic Answer with a handset or speakerphone. The handset or speakerphone must be off-hook (handset lifted or speakerphone turned on) all the time for the agent to hear zip tone.

If automatic answer is assigned for all calls, when a non-ACD call arrives, non-ACD Auto-Answer agents hear Incoming Call ID tone, not ringing.

### Callmaster telephones

Calls for Callmaster digital phones and attendant stations are announced by double tones.The tones that are doubled are zip (Auto-Answer ACD agent calls) and Incoming Call ID (for End of VDN of Origin announcements and all other Auto-Answer calls). The user hears part of the first tone and all of the second tone.

### Agents assigned to hunt-group and ACD calls

Do not use agents for hunt-group calls and ACD split/skill calls simultaneously. Otherwise, all of the calls from one split/skill (either ACD or hunt-group) are answered first.

The oldest call-waiting termination is supported only for agents who are servicing ACD calls only.

## Interactions

- Abbreviated Dialing

  Assign Abbreviated Dialing buttons to make agent login easier. You can program an Abbreviated Dialing button to dial access code, split number, and/or agent login ID. With the DEFINITY (R4 or later) you can use Autodial feature buttons to assign login and logout feature buttons.

- Auto-Available Split/Skill (AAS)

  An AAS cannot be administered for Timed ACW.

- Bridging

  ACD split/skill calls are not bridged.

  Station calls are bridged and agents are able to bridge onto them. If an agent bridges onto a call, the call is considered a non-ACD extension-in call. The agent is not available for an ACD call unless the agent is a member of a many-forced, one-forced, or one-per-skill MCH split/skill. The agent can put the call on hold and become available to receive ACD calls even in non-MCH splits/skills if only bridged appearances are active.

- Call Coverage

  If an ACD call routes to an agent as a result of covering to a VDN (where the VDN is the last coverage point in the coverage path), Timed ACW applies as administered for the VDN or split/skill.

- Call Forwarding

  If an ACD call routes to an agent after being call-forwarded to a VDN, Timed ACW applies as administered for the VDN or split/skill.

- Call Pickup

  When an ACD agent answers a call via Call Pickup, the call is treated as an incoming non-ACD call. The agent can put the call on hold and become available for additional calls.

- Call Work Codes

  The CWC 100-agent limit is shared with Reason Codes. Therefore, no more than 100 agents can simultaneously enter either a call work code or reason code.

- CallVisor ASAI Adjunct

  If a split/skill hunt group has CallVisor ASAI as the controlling adjunct, you cannot administer Timed ACW for the split/skill. Additionally, if an ACD call is routed to an agent in an adjunct-controlled split/skill, the agent is not placed in Timed ACW when the call ends.

- CentreVu CMS

  Timed ACW is reported on CMS reports in the same way as any other ACW. CMS gives exception notification only on ACW intervals that are longer than the defined threshold.

- Conference

  If an agent receives an ACD call through a VDN and then conferences in other agents, the agents added to the call use the Timed ACW interval associated with the number dialed to conference them. An ACD agent on conference with more than three parties may cause inaccurate CMS measurements.

- Expert Agent Selection

  When EAS is active, all ACD hunt groups are assigned as vector-controlled skills. Agents log in using Logical Agent IDs. Skills can be preassigned to login IDs, however, assignment on the Login ID form does not actually assign a non-AAS login ID to the skills until the ID is logged in. When the login ID is logged in, each skill is counted as a hunt-group member towards the system hunt-group member limit, the per-group member limit, and each agent is counted as a logged-in ACD agent.

- Multiple Call Handling

  If MCH calls are on hold at an agent's telephone and the agent completes a call that normally is followed by Timed ACW, the agent is not placed in ACW. If no MCH calls are on hold, but one is alerting at the station when the Timed ACW call completes, the agent is placed in ACW.

  MCH affects when agents can enter different work modes and when calls are delivered to agents in Manual-In or Auto-In work modes. See ''Multiple Call Handling'' for detailed information.

- Transfer

  If an agent receives an ACD call through a VDN and then transfers the call to another agent, the second agent uses the Timed ACW interval assigned to the number that was dialed to transfer the call.

  For an EAS agent, this is the Timed ACW interval associated with his or her Direct Agent skill. For an agent receiving a call transferred to a second VDN, this is the VDN Timed ACW interval of the second VDN. The agent who originally transferred the call uses the ACW associated with the VDN or split/skill that first received the call.

- VDN Override

  If a VDN has VDN Override set to no and the vector routes a call to a second VDN, the first VDN's Timed ACW interval is used for Timed ACW. If VDN Override is set to yes, the second VDN's Timed ACW interval is used.

  If no interval is set for the second VDN, no Timed ACW is associated with the call.

- Voice Response Integration

  If an ACD call routes on a *converse* vector command, any VDN-Timed ACW associated with the call is ignored for agents in the converse split/skill. However, if the converse split/skill has an administered Timed ACW interval, the answering agent associated with the split/skill is placed in Timed ACW when *converse* vector command processing completes.

# Auto-Available Split/Skill

Auto-Available Split/Skill (AAS) allows members of an ACD split/skill to be in Auto-In work mode continuously. An agent in Auto-In work mode becomes available for another ACD call immediately after disconnecting from an ACD call.

Use AAS to bring ACD agents back into Auto-In work mode after a system restart. Although not restricted to such, this feature is intended to be used for splits/skills containing only nonhuman members — for example, recorders or voice response units (VRUs).

## Administering AAS

**Table 3-5. Required forms**

| Form | Field |
|---|---|
| Hunt Group | ■ AAS |
| Agent LoginID (EAS only) | ■ AAS |

Verify that the ACD field is set to **y** on the System Parameters Customer-Options screen. If this field is not set to **y**, contact your Avaya Services representative.

Verify that the ACD field form is set to **y** on the Hunt Group.

## Detailed description

- Agent login with AAS

  With AAS, ACD splits/skills generally operate as usual. The major difference is in how work modes are handled.

  For splits/skills with AAS, agents are automatically logged in under the following circumstances:

  — Call Management System (CMS) completes an Agent Move request into an Auto-Available split/skill.

  — A maintenance-busied-out port, which is defined as an agent in an Auto-Available split/skill, is released.

  — The system reinitializes and requires agents to log in again.

  — You administer a split/skill on the Hunt Group form as AAS = y.

  — You administer an agent into an existing AAS split/skill.

  Once an agent is logged into an Auto-Available split/skill, it is immediately moved to the Auto-In work mode and subsequent requests to change out of that mode are denied.

- Agent logout with AAS

  For splits/skills with AAS, agents are automatically logged out under the following circumstances:

  — CMS completes an Agent Move request out of an Auto-Available split/skill.

  — The Auto-Available agent's port is unavailable because maintenance is being performed.

  — You administer a split/skill as AAS = n.

  — You remove an agent from an existing AAS split/skill.

  — Redirection on No Answer (RONA) redirects a call that the agent has not answered after an administered number of rings.

## Considerations

- AAS is intended primarily for non-BX.25 and non-ASAI PBX adjuncts such as Conversant VIS, that require extra help in getting PBX ports back online after a restart. AUDIX is incompatible with AAS because it uses BX.25 messages to automatically activate its ACD agent ports after a PBX restart.
- Because AAS is intended for nonhuman agents, do not administer an Auto-Answer telephone as a member of an AAS.
- AAS is not intended for any agent port hardware that can change its work mode state since a request to move to any state other than AUTO-IN is denied; however, administration of such telephones is not blocked.

## Interactions

- Auto-Answer

  Do not administer an Auto-Answer telephone as a member of an AAS.

  Auto-Answer was originally implemented for human agents. If a nonanalog telephone is administered as Auto-Answer and that telephone is logged into a split/skill, when the telephone goes on-hook, it is logged out.

  Agents at analog telephones defined as Auto-Answer who are logged into a split/skill must dial a log-out FAC to log out. If a telephone is a member of an AAS, a log-out FAC is denied. To log the agent out, you must either remove the agent from the split/skill when not active on a call or busy-out the physical extension.

  If an agent in an AAS with an Auto-Answer telephone goes off-hook, the telephone is logged into any Auto-Available splits of which it is a member. To log out of the AAS splits/skills, the agent goes on-hook, is placed in AUX work mode, and then presses the RELEASE button on nonanalog sets or disconnects on analog sets. Because agents are not placed immediately in Auto-In work mode, they may place personal or emergency calls rather than answering ACD calls that may be in queue.

- CMS

  For each agent, AAS notifies CMS of any login, logout, or change into the Auto-In work mode. In a non-EAS environment, an AAS agent is identified to CMS with a login ID equivalent to the agent's administered extension. With EAS, the AAS login ID and port are assigned on the Login ID form.

  With CMS Move Agent, you can move a member from one AAS split/skill to another while that member is logged in.

## Automatic Call Distribution

Automatic Call Distribution (ACD) allows incoming calls to connect automatically to specific splits/skills. An ACD split/skill is simply a hunt group that is designed to receive a high volume of similar calls. Calls to a specific split/skill are automatically distributed among the agents, or hunt group members, assigned to that split/skill. Calls queue to the split/skill until an agent is available.

An ACD agent can be a physical telephone extension, an individual attendant extension, or, in an Expert Agent Selection (EAS) environment, an agent login ID. An agent can be logged into multiple splits/skills. However, in a non-EAS environment, agents can be logged into only one split if that split is administered for Multiple Call Handling (MCH).

You can assign a supervisor to each split/skill. The split/skill supervisor can listen in on agent calls, monitor the split/skill queue status, and assist agents on ACD calls. Although supervisors can assist agents on ACD calls, the supervisors do not normally receive ACD calls unless they are also members of the split/skill.

If you have Call Management System (CMS) or Basic Call Management System (BCMS), you can measure and create reports on the status of ACD agents, splits/skills, and trunks. See ''Agent Call Handling'' and ''Call Management System (Category A only)'' or ''Basic Call Management System'' before setting up your ACD splits. See ''Agent Call Handling'' for detail on administering agent functions and operations.

Figure 3-1 shows a typical ACD arrangement.

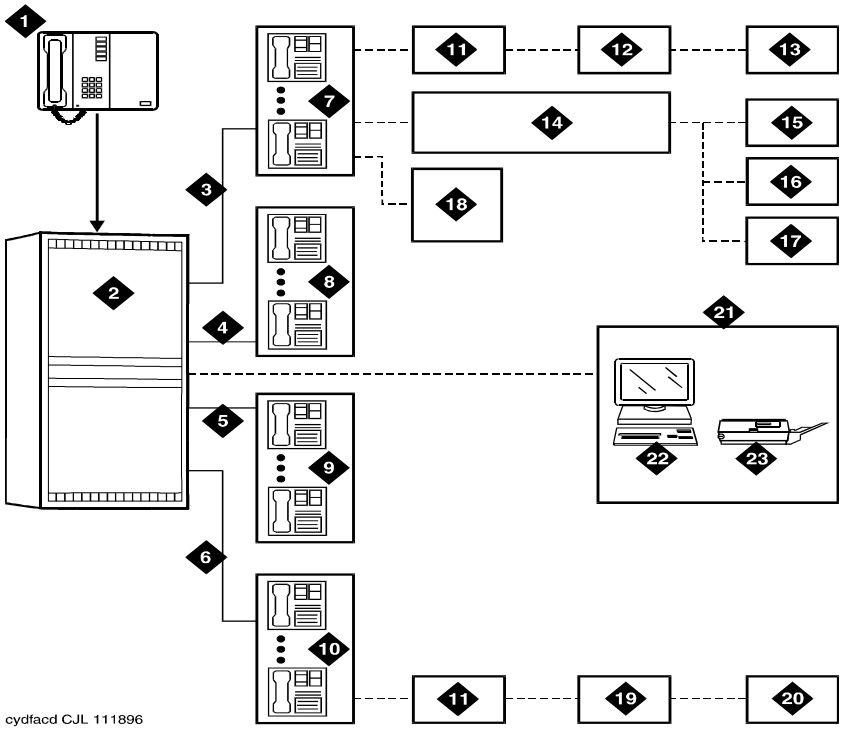



**Figure Notes**

1. Incoming calls
2. ACD switch
3. Trunk group 1
4. Trunk group 2
5. Trunk group 3
6. Trunk group 4
7. Split 1 Business Travel (10 agents)
8. Split 2 Personal Travel (8 agents)
9. Split 3 Group Travel (5 agents)
10. Split 4 General Information (15 agents)
11. Queues
12. Announcement 1
13. Announcement 2
14. Intraflow (Call Coverage)
15. Split 2 Personal Travel (3rd choice)
16. Split 3 Group Travel (2nd choice)
17. Split 4 General Information (1st choice)
18. Supervisor (with Service Observing)
19. Announcement
20. Disconnect
21. Call Management System (CMS)
22. Terminal
23. Printer

**Figure 3-1. Typical ACD arrangement**

## Administering ACD

**Table 3-6. Required forms**

| Form | Field |
|---|---|
| Trunk Groups<br>CO<br>FX<br>Tie<br>WATS | ■ Incoming Destination |
| Class of Restriction | ■ Can Be Service Observer? (optional)<br>■ Can Be Service Observed? (optional) |
| Attendant Console | ■ Headset, Auto Answer |
| Station | ■ Headset, Auto Answer<br>■ Button Assignments - Work-Mode, Queue Status, Call Info |
| Hunt Group | ■ All |
| Feature-Related System-Parameters | ■ Service Observing (optional)<br>— Service Observing Warning Tone<br>— Service Observing by FAC<br>■ Most Idle Agent<br>— MIA Across Splits/Skills<br>— ACW Agents on MIA List<br>■ Call Management System<br>— ACD Login Identification Length |
| Feature Access Code (FAC) | ■ Automatic Call Distribution page<br>■ Announcement Access Code<br>■ Service Observing Listen Only or Listen/Talk Access Code (optional) |
| Announcements/ Audio Sources | ■ All |

- **Trunk Group forms** — In the Group Number field, assign consecutive Group Numbers to trunk groups when you are using two or more trunk groups to support ACD applications.
- **Hunt Group form** — When the ACD field is set to **y**, complete the fields that apply. In the AAS field, enter **y** to enable Auto-Available Split/Skill. See ''Auto-Available Split/Skill'' for more information.

## Detailed description

For a detailed description of call distribution methods, refer to Chapter 1, ''Automatic Call Distribution (ACD) basics''.

The following table summarizes the different call distribution methods.

| WHEN agents are available, a call arrives, and the agent selection method is . . . | THEN the DEFINITY selects . . . | This distribution method is available with. . . |
|---|---|---|
| Direct Department Calling | the first available agent found in the hunt sequence. | Non-EAS |
| UCD-MIA | the most idle agent, without regard to skill level. | Non-EAS, EAS, Advocate |
| EAD-MIA | the highest skill level, most idle agent. | EAS, Advocate |
| UCD-LOA | the least occupied agent, without regard to skill level. | EAS, Advocate |
| EAD-LOA | the highest skill level agent with the lowest occupancy. | EAS, Advocate |
| PAD | the agent with the lowest ratio of adjusted work time and target allocation for the skill. | Advocate |

## Queuing and announcements

You create a queue for an ACD split/skill by setting Queue to **y** on the Hunt Group form. When all agents are active on calls or in After-Call Work mode, the queue allows incoming calls to wait for an idle agent. The next available agent is automatically connected to the call in the queue.

For non-vector-controlled splits/skills, calls do not queue in the following cases:

- No agents are logged in
- All logged-in agents are in Auxiliary Work mode
- No queue slots are available

The caller gets a busy signal (or busy coverage, if administered) unless a call comes in via an automatic-in central office (CO) facility. In this case, the caller hears ringback from the CO and the system continues trying to place the call in the queue.

You can assign two announcements to each split/skill and administer a second announcement to repeat. When an incoming call is directed to an ACD split/skill, the call is either directed to an agent or is automatically connected to the first announcement. Refer to *DEFINITY ECS Administrator's Guide*, 555-233-506, for information on how announcements are affected by call forwarding and call coverage.

### First announcement

After a call enters a queue, the caller hears ringing and the first announcement delay interval begins. If an agent becomes available during the first announcement delay interval, the call is connected to the agent. Otherwise, the interval expires and the system tries to connect the incoming call to the first announcement, with one of the following results:

- If the first announcement is available, the caller hears ringing, then the first announcement.
- If the announcement is busy and has no queue, the caller hears ringing and the first announcement delay interval is reset. The system tries to access the announcement again when the interval expires.
- If the announcement is busy and has a queue, then:
  - — If the queue is full, the caller hears ringing and the first announcement delay interval is reset. The system tries to access the announcement again when the interval expires.
  - — If the queue is not full, the call enters the announcement queue and the caller hears ringing, then the first announcement. The system then tries to connect the call to an agent.
- If the announcement is not busy, but is still unavailable, the second-announcement delay interval begins and the system attempts to connect the call to the second announcement.

If there is no first or second announcement, the call remains in queue until answered or removed from the queue.

### Forced first announcement

The first-announcement delay interval defines how long a call remains in queue before the call is connected to the first announcement. If this interval is 0 seconds, the incoming call is automatically connected to the first announcement. This is a forced first announcement — the call is not routed to an agent until after the caller hears the first announcement.

With a forced first announcement, the following occurs:

- If a first announcement is available, the caller hears ringing and then the first announcement. The system then tries to connect the call to an agent.
- If the announcement is busy and has no queue, the system waits 10 seconds and then tries to access the announcement.
- If the announcement is busy and has a queue, then:
  - — If the queue is full, the system waits 10 seconds, then tries to access the announcement.
  - — If the queue is not full, the call enters the announcement queue and the caller hears ringing, then the first announcement. The system then tries to connect the call to an agent.
- If the announcement is not busy but is still unavailable (for example, it may have been deleted), then the system tries to connect the call to an agent.

After a forced first announcement, the caller always hears ringback (or music-on-hold, if administered) until the call is answered or is connected to a second delay announcement. After a first or second delay announcement, the caller hears music-on-hold, if administered.

### Second announcement

After the first announcement, the second-announcement delay interval begins and the caller hears ringing (if there is no forced first announcement), or music, if provided. If an agent becomes available during the interval, the call is connected. Otherwise, the interval expires and the system tries to connect the incoming call to the second announcement, resulting in one of the following:

- If the second announcement is available, the caller hears ringing or music, then the second announcement.
- If the announcement is busy and has no queue, the caller hears ringing and the second-announcement delay interval is reset. The system tries to access the announcement again when the interval expires.
- If the announcement is busy and has a queue, then:
  - — If the queue is full, the caller hears ringing (only if the first announcement has not been heard) and the second-announcement delay interval is reset. The system tries to access the announcement again when the interval expires.
  - — If the queue is not full, the call enters the announcement queue and the caller hears ringing (only if the first announcement has not been heard), then the second announcement. The system then connects the call to an agent.
- If the announcement is not busy but is still unavailable, the call remains in queue until answered or removed from the queue.

After the second announcement, the caller hears music, if provided, or silence and then:

- If you administered the split/skill to repeat the second announcement, the system tries to connect the call to the second announcement after the delay expires.
- If you administered the split/skill not to repeat the second announcement, the call remains in the queue until answered or removed from the queue.

### Forced disconnect

You can connect an incoming call directly to an announcement and then disconnect the call after the announcement has completed in one of two ways:

- Administer an announcement extension as the incoming destination. The caller is directed to the announcement and is disconnected, without being queued for a split/skill.
- Administer an announcement extension as a point in a split/skill coverage path. Calls that have been in the queue for a long time are forced to go directly to the announcement and are disconnected.

### Announcement rules

The following rules govern announcements a caller hears:

- Calls that reach a split/skill directly always hear a forced first announcement, if assigned, regardless of subsequent call coverage, call forwarding, night service, or busy signal processing. If these calls queue long enough, they hear first and second announcements.
- Calls that reach a split/skill via call coverage receive a second announcement only, if administered. The assumption is that a caller has likely heard a first announcement at the original split/skill or station before being redirected.
- Calls that reach a split/skill via call forwarding receive first and second announcements at the destination split/skill, if administered. These calls can receive a forced first announcement at the original split/skill, if administered, but not at the split/skill they are forwarded to.

### Entering the queue

When a forced first announcement is not assigned, the system tries to connect an incoming call to an available agent. If an agent is available, the call is connected to the agent. If all agents are active (either on an ACD call or in ACW mode), the call enters the split/skill queue.

If no queue is assigned, or if no queue slots are available and the incoming facility is a CO trunk, the caller hears ringing. The system continues trying to queue the call until a queue slot becomes available, or until the call is abandoned or an agent becomes available. When you have administered Intraflow and Interflow with Call Coverage and Call Forwarding All Calls, the caller hears a busy tone or the call is redirected in any of these cases:

- No split/skill queue is assigned.
- The queue is full.

- No agents are logged in.
- All logged-in agents are in AUX work mode, and the incoming facility is a digit-oriented facility (digits are sent to the DEFINITY as in DID, incoming wink, or immediate tie trunks)

**NOTE:**
Central office trunk (non-DID) calls receive ringback from the CO, so the PBX cannot give these callers a busy signal. The system tries to put such calls into queue until successful or until the call is abandoned.

### Priority queuing

Priority queuing allows priority calls to be queued ahead of calls with normal priority. You can implement priority queuing in two ways:

- Assign Priority Queuing to a calling party's Class of Restriction (COR).
- Assign Priority on Intraflow to an ACD split/skill. This allows calls from the split/skill, when intraflowed into another split/skill, to be queued ahead of nonpriority calls. For more information, see ''Information Forwarding (Category A only)''.

### Queue status indications

You can assign queue status indications on agent or supervisor telephones or consoles for ACD calls in queue. For more information, see ''Queue Status Indications''.

## Direct agent calling (Category A only)

**NOTE:**
Direct Agent calling requires CallVisor Adjunct-Switch Application Interface (ASAI) or EAS. Both originating and called party Class of Restrictions (CORs) must be set to allow Direct Agent Dialing. See ''Expert Agent Selection (Category A only)'' for information on Direct Agent Announcements.

Direct Agent (DA) Calling is an EAS feature that lets a caller:

- Contact a specific agent instead of a skill hunt group
- Queue for the agent if the agent is on a call
- Use Agent LoginID for callbacks and transfers
- Hear systemwide Direct Agent delay announcement while holding
- Follow the agent's coverage path, if the call is not answered immediately.

### Advantages of Direct Agent calling

DA calls have two important advantages:

- They reduce the need to transfer callers who want or need to speak with a certain agent, such as the agent spoken to on a previous call.
- They provide more accurate reporting of calls, because CMS counts DA calls as ACD calls. In this way, agents get proper credit for taking them. By comparison, calls transferred to an agent are not counted as ACD calls.

### How Direct Agent calling works

Direct Agent calling works as described below:

- Callers can dial the agent's Login ID as part of a DID or from auto attendant as an extension number.
- DA calls have a special ringing sound, regardless of the agent's work state, and the current work mode button on the agent's telephone flashes.
- If the agent is on a call, he or she can use multiple call handling to decide whether to put the call on hold in order to take the DA call.
- If the agent is available, the call is delivered according to the answering and alerting options.
- If the agent is not available, or if multiple call handling is not used, call coverage or RONA routes the call to backup.
- While on DA calls, agents are unavailable for subsequent ACD calls. If the agent logs off by unplugging the headset, he or she can still answer a DA call in the queue by logging back in and becoming available. Agents who have DA calls waiting are not allowed to log off using a FAC. If the agent is in Manual In mode or pushes the After Call Work (ACW) button while on a direct-agent call, the agent goes to ACW mode.

Generally, direct-agent calls are queued and served in first-in, first-out order before other calls, including priority calls. However, if you administer a skill level for Call Handling Preference, direct-agent calls must be assigned the highest priority for them to be delivered before other ACD calls. Otherwise, calls with a higher skill level are distributed before direct-agent calls.

Note that you can use Multiple Call Handling (MCH) to allow agents to answer a direct agent call with another ACD call active.

Direct-agent calls follow the receiving agent's coverage and call forwarding paths, if these features are administered. Once a call goes to coverage or is forwarded, the call is no longer treated as a direct-agent call, and CMS is informed that the call has been forwarded.

## Administering Direct Agent calling

To administer Direct Agent calling:

- On the Agent LoginID form, you enter the agent's Direct Agent Skill. It is suggested that you use the Hunt Group form to set up a skill for all DA calls. This skill will:
  - — Tell the DEFINITY system how to handle calls to the skill and
  - — Show report users how much time each agent has spent on DA calls.

  **NOTE:**
  Any agent who will receive direct agent calls should have at least one non-reserve skill assigned to the agent loginID.

- Add the skill to the agent's administered skills on this form.

Whenever an outside caller dials the agent's extension, the DEFINITY system looks at the entry in that field to determine the skill for tracking call data.

On page 8 of this Feature-Related System Parameters form, you may specify:

- A Direct Agent Announcement Extension that plays an announcement to Direct Agent callers waiting in queue.
- Amount of delay, in seconds, before the announcement.

You also need to administer a Class of Restriction (COR) for DA calls. COR is covered in the next lesson. Click here to go to that topic now.

Direct Inward Dialing (DID) is administered on the Trunk Group form.

On the second page of the Hunt Group form, consider administering Multiple Call Handling On-Request for this hunt group. This feature will enable agents to see that the incoming call is a DA call and put their current call on hold to answer the DA call.

If there is no answer after a certain number of rings, you may use RONA to redirect the caller to a VDN that points to a vector. You can set up the vector to provide appropriate routing and treatment for the call.

On page 3 of the Hunt Group form, you administer messaging for the Direct Agent hunt group.

That's all. Next, you need to assign this hunt group to agents who need to receive Direct Agent calls.

## Considerations

### Maximum number of agents

If an agent is assigned to more than one split/skill, each assignment applies to the maximum number of agents. When computing the number of agents measured by BCMS, count one agent as one agent regardless of the number of splits/skills that the agent will be logged into. For CMS sizing, count one agent for each agent in each split/skill measured by CMS; one agent logged into three splits/skills counts as three agents.

Using the Number of Agents System Capacity screen, you can view the Used, Available, and System Limit counts.

### MIA across splits/skills

MIA Across Splits/Skills distributes calls more equally to agents with multiple splits/skills. When agents handle a call for one split/skill, they go to the back of all their idle agent lists.

With MIA Across Splits/Skills, agents may not receive calls from all of their splits/skills. If, for example, split 20 has a very short average agent idle time and split 22 has a very long average agent idle time, agents with both of these skills may never become the most-idle for skill 22 because they continuously take calls for split 20.

### Announcements

Announcements can be analog, aux trunk, DS1, or integrated. Integrated announcements use the 16-channel announcement board and queuing is based on whether one of the 16 channels is available. When a channel becomes available, any announcements on the board can be accessed, including the announcement already being played. A caller may be in queue for an announcement because a channel is not available, even though that announcement is not being used. The maximum queue length for all digital announcements is shown in the Capacities Table in the *DEFINITY System Description Pocket Reference*. Queues for analog and aux trunk announcements are on a per-announcement basis. You can also install multiple Integrated Announcement boards to allow for more announcements.

If a delay announcement is used, answer supervision is sent to the distant office when the caller is connected to the announcement. Charging for the call, if applicable, begins when answer supervision is returned.

### Storing and retrieving messages

Leave Word Calling messages can be stored for an ACD split/skill and retrieved by a split/skill member, a covering user of the split/skill, or a system-wide message retriever. The message retriever must have a telephone display and proper authorization. You can also assign a remote Automatic Message Waiting lamp to an agent telephone to indicate when a message has been stored for the split/skill.

## Class of Restriction

Each ACD split/skill and each individual agent is assigned a Class of Restriction (COR). You can use Miscellaneous Restrictions to prohibit selected users from accessing certain splits/skills. You can use Miscellaneous Restrictions or restrictions assigned through the COR to prevent agents from being accessed individually. Unless you administer such restrictions, each agent can be accessed individually as well as through the split/skill.

An agent with origination and termination restriction can receive ACD calls and use the assist function. A telephone in a COR with termination restriction can receive ACD calls.

If you are using Service Observing, administer a COR for observers and agents being observed.

## Trunk groups and ACD splits

- If you assign an ACD split extension as the incoming destination of a trunk group and the split extension is later changed, you must also change the incoming destination of the trunk group to a valid extension.
- Calls incoming on a non-DID trunk group can route to an ACD split instead of to an attendant. Calls incoming on any non-DID trunk group can have only one primary destination; therefore, the trunk group must be dedicated to the ACD split or a VDN.
- For MEGACOM 800 Service with DNIS over a wink/wink-tie trunk, if all agents are logged out or in AUX work mode, incoming MEGACOM calls receive a busy signal if no coverage path is provided (unlike other automatic-in trunk groups, which receive ringback from the central office).
- CO switches usually drop calls that remain unanswered after two to three minutes. Therefore, if an incoming CO call queues to a split without hearing an announcement or music, and the caller hears CO ringback for two to three minutes, the CO drops the call.

## Agent considerations

- Agents should not be used for hunt group calls and ACD split/skill calls simultaneously. Otherwise, all calls from one split/skill (either ACD or hunt group) are answered first. For example, if ACD calls are answered first, none of the hunt-group calls are answered until all of the ACD calls are answered.
- Agents with multiappearance phones can receive only one ACD call at a time unless Multiple Call Handling is active. Without MCH, a phone is available for an ACD call only if all call appearances are idle. The agent may, however, receive non-ACD calls while active on an ACD call.

### Vector-controlled splits/skills

- You can enhance ACD by using Call Prompting, Call Vectoring and Expert Agent Selection. For detailed information on vector-controlled splits/skills, see the Call Vectoring/EAS book that applies to your system. Vector-controlled splits/skills should not be called directly via the split/skill extension (instead of via a VDN mapped to a vector that terminates the call to a vector controlled split/skill). However, if split/skill extensions are called, the calls do not receive any announcements, are not forwarded or redirected to coverage, and do no intraflow/interflow to another hunt group.
- The oldest-call-waiting termination, which is available with Call Vectoring, is supported for agents who are servicing ACD calls only.

### Changing hunt groups from ACD to non-ACD

Before you change a hunt group from ACD to non-ACD, all agents in that hunt group must be logged out. When you change a hunt group from ACD to non-ACD, the system places all agents in that hunt group in busy state. If any phones in the hunt group have an Auxiliary Work button, the button lamp lights. To become available for calls, the agent presses the Auxiliary Work button or dials the Hunt Group Busy Deactivation FAC followed by the hunt-group number.

## Interactions

- Attendant Call Waiting

  An attendant can originate or extend a call to an ACD split. Attendant Call Waiting cannot be used on such calls. However, such calls can enter the split queue.

- Attendant Intrusion

  Attendant Intrusion does not work with ACD split extensions because an ACD extension has many agent extensions. It is not possible to determine which agent extension to intrude upon.

- Automatic Callback

  Automatic Callback calls cannot be activated toward an ACD split/skill.

- Call Coverage

  Calls can redirect to or from an ACD split/skill. A vector-controlled split/skill cannot be assigned a coverage path.

  For a call to an ACD split/skill to be redirected to call coverage on the Busy coverage criterion, one of the following conditions must exist:

  — All agents in the split/skill are active on at least one call appearance and the queue, if there is one, is full.

  — No agents are logged in.

  — All agents are in Auxiliary Work mode.

If the queue is not full, a call enters the queue when at least one agent is on an ACD call or in ACW mode. Queued calls remain in queue until the Coverage Don't Answer Interval expires before redirecting to coverage. If any split/skill agent becomes available, the call is directed to the agent.

Calls that redirect on the Don't Answer coverage criterion are reported to BCMS/CMS as intraflowed calls.

If a call is queued for an ACD split/skill and redirects via Call Coverage directly to an announcement, the call is dropped after the announcement.

Calls to a split/skill that are directed to an agent do not follow the agent's call coverage path. If an agent activates Send All Calls it does not affect the distribution of ACD calls. An ACD split/skill call directed to an agent station follows the split/skill call coverage path, once the agent's Don't Answer interval is met.

- Call Forwarding All Calls

  Call Forwarding All Calls activated for an individual extension does not affect the extension's ACD functions.

  When activated for the split/skill extension, calls directed to the split/skill are forwarded from the split/skill. Calls receive no announcements associated with that split/skill (other than a forced first announcement, if administered). The system reports to BCMS/CMS that calls are queued on the split/skill. The system reports to CMS when the call is removed from the queue and forwarded.

  Calls can be forwarded to an off-premises destination to activate Intraflow and Interflow. See ''Intraflow and Interflow'' in this book for more information.

- Data Call Setup

  Telephone or data terminal dialing can be used on calls to or from a member of an ACD split/skill.

- Data Restriction

  If the trunk group used for an ACD call has data restriction activated, agents with Automatic Answer activated do not hear the usual zip tone.

- DCS (Category A only)

  CMS cannot measure ACD splits/skills on a DCS network as if they were one switch. Agents for a split/skill must be all on the same switch. If a call to an ACD split/skill is forwarded to a split/skill at another DCS node, the caller does not hear the forced first announcement at the second split/skill.

  If an ACD split/skill is in night service, with a split/skill at second DCS node as the night service destination, a call to the first split/skill is connected to the second split/skill's first forced announcement.

- Dial Intercom

  An agent with origination and termination restriction can receive ACD calls and can make and receive dial intercom calls.

- Hold

  If an agent puts an ACD call on hold, information is reported to the CMS via Personal Call Tracking. CMS records the amount of time the agent actually talks on the call.

- Individual Attendant Access

  Individual attendant extensions can be assigned to ACD splits. Unlike telephone users, individual attendants can answer ACD calls as long as there is an idle call appearance and no other ACD call is on the console.

- Internal Automatic Answer (IAA)

  Internal calls directed to an ACD split/skill are eligible for IAA. You cannot administer IAA and ACD Automatic Answer simultaneously on the same station.

- Intraflow and Interflow

  Intraflow and Interflow, when used with Call Forwarding All Calls or Call Coverage, allows splits/skills to be redirected to other destinations on and outside the system. For more information, see ‘‘Intraflow and Interflow’’.

- Multiappearance Preselection and Preference

  All assigned call appearances must be idle before an ACD call is directed to a phone.

- Night Service – Hunt Group

  When Hunt Group Night Service is activated for a split/skill and the night-service destination is a hunt group, a caller hears the first forced announcement at the original split/skill. The call is redirected to the night-service destination hunt group. If all agents in the hunt group are busy, the caller hears whatever you have assigned.

- Terminating Extension Group

  A TEG cannot be a member of an ACD split/skill.

- Transfer

  Calls cannot be transferred to a busy split/skill. The transfer fails and the agent transferring the call is re-connected to the call. If an agent presses the Transfer button, dials the hunt-group extension number, and then disconnects while the split/skill is busy, the call is disconnected.

- Phone Display

  For calls dialed directly to an ACD split/skill extension, the identity of both the calling party and ACD split/skill are shown on the phone display.

# Basic Call Management System

Basic Call Management System (BCMS) provides real-time and historical reports to assist you in managing agents, ACD splits/skills (hunt groups), VDNs, and trunk groups. You can display BCMS reports on the Management Terminal or print them on the printer associated with the Management Terminal. In addition, you can schedule historical reports to print on the system printer.

BCMS provides the following reports:

- Real Time Reports
  - Split/Skill Status
  - System Status
  - VDN Status
- Historical Reports
  - Agent
  - Agent Summary
  - Split/Skill
  - Split/Skill Summary
  - Trunk Group
  - Trunk Group Summary
  - VDN
  - VDN Summary

For a detailed description of BCMS and the reports it provides, see the *DEFINITY ECS Basic Call Management System (BCMS) Operations*, 555-230-706.

## Administering BCMS

**Table 3-7. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ BCMS<br>■ BCMS Service Level<br>■ ACD<br>■ BCMS/VuStats Login ID |
| Agent LoginID | ■ When BCMS is being used with EAS, complete all fields for each agent |
| BCMS/VuStats Login ID | ■ When BCMS is being used without EAS, enter a Login ID and Name for each agent. |
| Feature-Related System Parameters | ■ BCMS Parameters<br>■ BCMS/VuStats Measurement Interval<br>■ ACD Login Identification Length<br>■ BCMS/VuStats Abandoned Call Timer<br>■ System Printer Extension<br>■ Lines Per Page |
| Hunt Groups | ■ Measured<br>■ Acceptable Service Level |
| Trunk Groups | ■ Measured |
| Vector Directory Number (VDN) | ■ Measured<br>■ Acceptable Service Level |

All agents should log off before any changes are made to the BCMS/VuStats Login ID form.

Measurements can be turned off for a split/skill while agents are logged in, but agents must be logged off to start measurements for a split/skill.

## Interactions

For information about how BCMS records redirected and conferenced calls, see *DEFINITY ECS Basic Call Management System (BCMS) Operations*, 555-230-706.

- Move Agents From CMS

  If agents are moved from one split/skill to another split/skill via CMS/Supervisor, measurements are stopped for the agent's "from" split/skill and started for the agent's "to" split/skill.

  If an attempt is made to move an agent from a non-BCMS-measured split/skill to a measured BCMS split/skill via CMS/Supervisor, and the move would exceed the maximum number of measured agents, the switch rejects the move. Otherwise, internal BCMS measurements are started for the agent. If the an agent is moved from a split/skill that is measured by BCMS to a split/skill that is not measured by BCMS via CMS/Supervisor, then internal measurements for the agent stop.

- Night Service

  When night service is activated for a split/skill, new calls go to the alternate destination. BCMS does not record these calls as OUTFLOW. If the destination is a measured split/skill, BCMS treats the calls as new incoming calls (that is, BCMS does not record them as INFLOW).

- System Measurements

  The system can produce BCMS reports, adjunct CMS reports, and switch traffic measurements simultaneously.

  BCMS measurements are not determined in the same way as trunk group and hunt group measurements although some of the information is similar. Therefore, the two reports may represent data differently.

**Table 3-8. System capacity**

| | R8 and R9csi/si | R8 and R9r |
|---|---|---|
| Maximum agents displays by Monitor BCMS Split/Skill command | 100[1] | 100[1] |
| Maximum BCMS terminals | **3** | 4 |
| Maximum active maintenance commands for system | **1** | 5 |
| Maximum BCMS terminals in monitor mode at same time[2] | **1** | 3 |

1. The Monitor split/skill command will only display status for the first 100 agents logged into the split/skill regardless of how many additional agents log in to the split/skill.
2. BCMS monitoring, being a maintenance command, is limited by the active maintenance commands limit, reduced by 2 in the "r" system configuration (since 2 active command slots are reserved for the INADs and SAT logins respectively).

## Best Service Routing (Category A only)

To help you maximize productivity across a network of call centers, DEFINITY ECS gives you three ways to route calls between centers:

- **Interflow**–DEFINITY ECS gives you simple ways to unconditionally route—or interflow—calls from one switch to another. For information on unconditionally interflowing calls from splits/skills that are not vector controlled, see ‘‘Information Forwarding (Category A only)’’. For information on unconditionally interflowing calls from vector-controlled splits/skills, see ‘‘Look-Ahead Interflow (Category A only)’’.
- **Look–Ahead Interflow (LAI)**–LAI gives you more control over the interflow process. You can set conditions on a switch to specify when calls should be interflowed to other locations. You can also set conditions on a switch to specify when interflow attempts from other switches will be accepted and when they won’t be. For information on using LAI, see ‘‘Look-Ahead Interflow (Category A only)’’.
- **Network Call Redirection (NCR**)–NCR offers a call transfer method between sites on a public network that creates a Virtual Private Network (VPN) and cuts public network costs. NCR is a DEFINITY ECS feature available with DEFINITY ECS R8.3 and newer releases.

  Call redirection using NCR is accomplished by using either the public network’s Explicit Network Call Transfer (ENCT) or Network Call Deflection (NCD) options. For NCD, there are two operations that can be used for call redirection: “retain call until alerting/connect” or “clear call upon invocation.” Options will be limited based on what the local PSTN service provider allows. For example, in the United States, only ENCT is allowed, whereas in Western Europe, only the NCD “clear call upon invocation” option is available. Currently, the NCD “retain call until alerting/connect” option is not available.

  For additional information on using NCR, see “Network Call Redirection (NCR)”.

Best Service Routing (BSR) allows DEFINITY ECS to compare specified splits/skills, identify the split/skill that will provide the best service to a call, and deliver the call to that resource. If no agents are currently available in that split/skill, the call is queued. To respond to changing conditions and operate more efficiently, BSR monitors the status of the specified resources and adjusts call processing and routing as appropriate.

BSR is available in single and multi-site versions. Single-site BSR compares splits/skills on the DEFINITY ECS where it resides to find the best resource to service a call. Multi-site BSR extends this capability across a network of DEFINITY switches, comparing local splits/skills, remote splits/skills, or both, and routing calls to the resource that will provide the best service.

Best Service Routing is summarized in this chapter. For complete information on how to get the most from BSR, see “Best Service Routing” in the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521.

## Benefits of BSR

Both single- and multi-site BSR intelligently compare specific resources to find the one that can best service a call. In addition, multi-site BSR allows you to integrate a network of call centers for better load balancing and optimal agent utilization. Depending on your specific application, BSR can yield a variety of other benefits as shown below.

**Table 3-9. Benefits of BSR**

| You can benefit by… | As a result of… |
|---|---|
| Improved customer satisfaction | ■ Lower average speed of answer (ASA), thus more calls handled[1]<br>■ Greater probability that expert agents will be available for a specific call type (for centers with EAS)<br>■ Lower abandonment rate<br>By balancing the load between locations in a network, BSR reduces extremes in wait times between the locations. |
| Increased revenue | ■ Lower average speed of answer (ASA), thus more calls handled<br>■ Lower abandonment rate<br>■ Lower network cost<br>■ Greater probability that high-revenue generating agents will be available for a specific call type (for centers with Expert Agent Selection) |
| Improved productivity | ■ Increased agent occupancy rates<br>Improve your service without adding staff, or reduce staff while maintaining your current level of service.<br>■ Faster delivery of interflowed calls<br>Agents at one location in a network are less likely to sit idle while calls wait in queue at another location. |
| Increased operating flexibility, easier staffing and scheduling | ■ Larger pool of agents available to take calls in a split/skill<br>Spikes in call volume at a single call center can be distributed across all centers. Temporarily understaffed centers can be supported by the other centers in the network. |
| Improved service levels | ■ Lower average speed of answer (ASA), thus more calls handled |
| Increased performance | ■ Less messaging and processing required per call |

***Continued on next page***

**Table 3-9. Benefits of BSR (Continued)**

| You can benefit by… | As a result of… |
|---|---|
| Operating separate sites as an integrated "virtual call center" | ■ DEFINITY ECS ability to compare resources and queue a call to the best one<br>■ DEFINITY ECS enhanced information forwarding capabilities |

1. A location's ASA may be low because the location is underutilized and agents are frequently sitting idle. When BSR is implemented at such a location, ASA may rise because of the rise in incoming call volume.

## Before you start using BSR

For single-site BSR applications, your switch must meet the requirements shown below (except for LAI). To use multi-site BSR applications, both the switches involved and the network connecting them must meet all the requirements described in this section.

**CAUTION:**
*To ensure your network meets the requirements for BSR support presented below, contact your Account Executive about BSR network certification.*

### Switch requirements for BSR

Your switch has to meet *all* of the requirements shown below to support Best Service Routing. Check the settings shown below before you try to use BSR.

**Table 3-10. Requirements to use BSR**

| Form | Page | Field | Must be set to… |
|---|---|---|---|
| Software Version | 1 | Memory Resident | G3V6i.03, G3V6r.03, or higher |

***Continued on next page***

**Table 3-10. Requirements to use BSR (Continued)**

| Form | Page | Field | Must be set to… |
|---|---|---|---|
| System-Parameters Customer-Options[1] | 1 | G3 Version | V6 or higher |
| | 2 | ISDN-BRI Trunks? | Y |
| | | ISDN-PRI Trunks? | Y |
| | 3 | Vectoring (G3V4 Advanced Routing) | Y |
| | | Vectoring (Best Service Routing) | Y |
| | | Lookahead Interflow (LAI)[2] | Y |
| Feature-Related System Parameters | 8 | Adjunct CMS Release | R3V6 or higher, or left blank |

1. ISDN connectivity is only necessary if you want to use multi-site BSR. One or both of these fields must be set to "Y." Multi-site BSR operates over both BRI and PRI trunks.
2. Look-Ahead Interflow is only necessary if you want to use multi-site BSR. For status poll and interflow calls used in multi-site BSR applications, set up trunks as you would for LAI. See ''Look-Ahead Interflow (Category A only)'', for more information. Information Forwarding is not required for polling calls.

**NOTE:**
If you begin using BSR and then decide to turn it off, you will not be able to set Vectoring (Best Service Routing) to **n** until you remove all BSR commands from vectors.

## Network requirements for BSR

To support BSR, networks must meet both the criteria for LAI call control operation over switched networks (see '''Look-Ahead Interflow (Category A only)'') and the following criteria:

- The network must support end-to-end transport of codeset 0 user data, either as a User-to-User Information Element (UUI IE) or by QSIG Manufacturer Specific Information (MSI IE), in the ISDN SETUP and DISCONNECT messages. The network must also allow User-to-User Information Elements to be transported in the first call-clearing message prior to answer, while a call is still in the "call proceeding" state. (For more information, see ''Information Forwarding (Category A only)''.)

  With BSR poll calls, the information is forwarded back in the DISCONNECT message. In this case the network must support forwarding of UUI in the first call clearing message prior to the active state (i.e., while still in the call proceeding state).

Private networks can be configured for either QSIG (transport via MSI packaged in a codeset 0 Facility IE) or non-QSIG (transport via a codeset 0 UUI IE). Currently, public networks do not support QSIG and user data can only be transported via the UUI IE when supported by the network. Future public network offerings may support QSIG, possibly by Virtual Private Network.

- DEFINITY ECS must support the ISDN country protocol.
- The network byte limit for user information contents (the user data portion) must be large enough to carry the data needed for the customer application.

  **NOTE:**
  Some public network providers may require service activation and/or fees for user information transport.

- Response time for ISDN signaling should be fast enough that an entire consider series can execute within a single ring cycle.

Enhanced information forwarding has been tested with several major carriers. To find out if these capabilities work with your carrier, check with your account team for the most current information.

If testing has not been done to verify operation over the public networks involved with the preferred specific configuration, use of private ISDN trunking between the nodes should be assumed until successful testing has been completed.

## Administering BSR

BSR administration varies, depending on whether your switch is configured for single- or multi-site BSR.

## Singe-site BSR

**Table 3-11. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ G3 Version<br>■ Vectoring (G3V4 Advanced Routing)<br>■ Vectoring (Best Service Routing) |
| Feature-Related System Parameters | ■ Adjunct CMS Release |
| VDN | ■ BSR Available Agent Strategy |
| Call Vector | ■ Complete a form for each vector that uses BSR commands |

## Multi-site BSR

**Table 3-12. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ G3 Version<br>■ Vectoring (Best Service Routing)<br>■ Vectoring (G3V4 Advanced Routing)<br>■ Lookahead Interflow (LAI) |
| Feature-Related System Parameters | ■ Adjunct CMS Release |
| Trunk Group (ISDN-BRI)[1] | ■ Outgoing Display<br>■ Supplementary Service Protocol<br>■ UUI Treatment |
| Trunk Group (ISDN-PRI) | ■ Outgoing Display<br>■ Supplementary Service Protocol<br>■ UUI Treatment |
| Best Service Routing Application Plan | ■ Complete one form for each BSR application |
| VDN | ■ BSR Application<br>■ BSR Available Agent Strategy |
| Call Vector | ■ Complete a form for each vector (primary, status poll and interflow vectors) in a BSR application |

1. Settings in the fields Codeset to Send TCM, Lookahead and Send Codeset 6/7 LAI IE? on the ISDN trunk forms do not affect BSR.

Multi-site BSR requires that Look-Ahead Interflow (LAI) be enabled. See ‘‘Administering LAI’’ for a list of required forms and fields. Since BSR can forward information such as VDN name, in-VDN time, and collected digits with interflowed calls, also see ‘‘‘Administering User-to-User Information transport’’ for instructions.

## Detailed description

To use Best Service Routing on a single switch, you simply use special commands and command elements that are part of the DEFINITY call vectoring language. As a result, BSR for a single location can be easily added to existing vectors without modifying other parts of the DEFINITY.

Multi-site applications work similarly, but additional administration is required. Since steps in a multi-site BSR vector will contact one or more remote locations, you need to define these locations, tell the DEFINITY how to contact each one, and set up VDNs and vectors to handle communications between the sending switch and each remote switch.

Three VDN/vector pairs must be used in every multi-site BSR application. The Primary VDN/vector pair, on the sending switch, contacts the specified remote switches, collects information, compares the information, and delivers or queues the call to the resource that is likely to provide the best service. Two VDN/vector pairs are needed on each remote switch. A Status Poll VDN/vector pair provides information about the best resource at its location in response to inquiries from BSR applications on other switches. Finally, an Interflow VDN/vector pair is needed to receive and process the calls interflowed from BSR applications on other switches.

## Call surplus situations

Every BSR application compares a set of predetermined resources (splits/skills) and selects the “best” resource to service the call. In a call surplus situation (no agents available), the best resource is the split/skill with the lowest Expected Wait Time (EWT). For purposes of calculating the best resource in a call surplus situation, BSR allows you to adjust the EWT figure for any split/skill. The actual EWT for calls in queue isn’t changed, of course; only the figure used in the calculations performed by the BSR feature is changed. You don’t have to enter adjustments, but the ability to adjust the EWT for splits/skills allows you to program preferences in vectors. Because of agent expertise, for example, or the availability or cost of tie trunks, you might prefer that some resources *not* service a call unless doing so significantly decreases the call’s time in queue.

Effective with DEFINITY ECS Release 9, it is possible for you to make adjustments to agent availability using the *consider* step. See the Agent selection adjustments - Release 9 and newer section below for more information.

## Agent surplus situations

In an agent surplus situation (one or more agents available to take incoming calls), BSR will deliver a new call according to the BSR Available Agent Strategy specified on the VDN form. The “best” resource will be the split/skill that meets the criteria defined by the strategy you’ve chosen for that VDN. BSR can use any of the five strategies shown in the table below to select an agent when agents are available.

**Table 3-13. BSR available agent strategies**

| If BSR Available Agent Strategy is set to… | The call will be delivered to… |
|---|---|
| 1st-found | the first available agent. BSR will not consider any other resources as soon as it finds an available agent. |
| ucd-mia | the resource with an agent who has been idle the longest. BSR will compare all the splits/skills specified in the vector before delivering the call. |
| ead-mia | the resource with an agent with the highest skill level relevant to the call who has been idle the longest. BSR will compare all the splits/skills specified in the vector before delivering the call. |
| ucd-loa | the resource with an least-occupied agent. BSR will compare all the splits/skills specified in the vector before delivering the call. |
| ead-loa | the resource with an agent with the highest skill level relevant to the call who is the least occupied. BSR will compare all the splits/skills specified in the vector before delivering the call. |

For more information on LOA, see ‘‘Automatic Call Distribution’’ or the *CentreVu Advocate User Guide*, 585-215-953. LOA is available with the Release 9 (and newer) Call Center Elite package.

When agents are available in one or more of the specified resources, BSR does not consider resources (local or remote) that return an EWT (call queue/call surplus situation) in selecting the best place to send the call.

**NOTE:**
The BSR Available Agent Strategy assigned to a VDN should match the agent selection method used in the splits/skills considered by a BSR application.

## Agent selection adjustments - Release 9 and newer

With the DEFINITY ECS Release 9 and newer releases, an option has been provided to have the BSR adjust-by value apply in the agent surplus (agents available) situation. This adjustment provides the ability to use the *consider* step adjustment value to prioritize (handicap) agent resources when agents are available.

When the adjustment is used, the *consider* step uses the following syntax:

**consider split/location adjust-by x**

DEFINITY applies the agent adjustment in the same manner as the calls in queue/call surplus (lowest EWT) situation.

To select an adjustment, think in terms of reducing the importance of a resource/site and in relative percentage — the higher the adjustment, the less desirable it is to pick that agent/site. So, if x = 30, then the agent/site is 30% less desirable.

The available agent adjustment applies to the UCD-MIA, UCD-LOA, EAD-MIA, and EAD-LOA call distribution methods. For the most idle agent distribution methods, the adjust-by lowers the idle time value returned by the agent/site. For the least occupied agent distribution methods, the adjust-by raises the returned occupancy level of the agent/site. In either case, with EAD, the MIA or LOA is used as a tie breaker if more than one site has an agent available with the same highest skill level.

The same adjust-by value in the *consider* step applies to both agent surplus and call surplus situations.

## Vector commands for single-site BSR

The following table shows the vector commands and command elements used in single-site BSR applications.

**Table 3-14. Vector commands and usage for single-site BSR**

| Commands and command elements | | Use this … |
|---|---|---|
| **Commands** | *consider split/skill* | to obtain the Expected Wait Time or agent data needed to identify the best local resource. One *consider* step must be written for each split/skill you want to check.[1] |
| | *queue-to* | with the *best* keyword to queue calls to the best resource identified by the consider sequence. |
| | *check* | with the *best* keyword to queue calls to the best resource identified by the consider sequence if the resource meets certain conditions. |

***Continued on next page***

**Table 3-14. Vector commands and usage for single-site BSR (Continued)**

| Commands and command elements | | Use this … |
|---|---|---|
| **Key word** | *best* | in *queue-to*, *check*, and *goto* commands that refer to the resource identified as best by a series of consider steps |
| **Conditional** | *wait-improved* | to prevent calls from being queued to an additional split/skill when the reduction in Expected Wait Time isn't enough to be useful. "Wait improved" means that a call's EWT must be improved by a specific amount (a figure you specify in seconds) over its current EWT or DEFINITY ECS won't queue it to the additional split/skill. |
| **User adjustment** | *adjust-by* | to specify your preferences for the splits/skills that might handle the calls for a particular application, reflecting factors such as agent expertise or reducing calls to a backup split/skill. When a vector considers a local resource you can make the selection of that split/skill less desirable. The higher the setting, the less chance that resource will be selected over another with a lower setting (for example, set to 30 makes that choice 30% less desirable). With EWT returned, the setting increases the returned expected wait time for comparison with other returned EWTs. As a result, this split/skill is less likely to service the call unless its EWT is significantly less than that of any other available split/skill.<br><br>Optionally, the adjust-by setting applies in the available agent case. If you are using the UCD-MIA or EAD-MIA available agent strategy, the setting decreases the returned agent idle time, making the agent appear less idle (busier). If you are using the UCD-LOA or EAD-LOA available agent strategy, the setting increases the returned agent occupancy, making the agent appear more occupied (busier). In either case with EAD, the MIA or the LOA is used as a tie breaker if more than one site has an agent available with the same highest skill level. |

1. Since the *consider* command is designed to compare two or more resources, *consider* commands are typically written in sequences of two or more with the sequence terminating in a *queue-to best* step. This set of *consider* commands and a *queue-to best* step is called a consider series.

## Vector commands for multi-site BSR

The following table summarizes the vector commands and command elements that support multi-site BSR applications.

**Table 3-15. Vector commands and usage for multi-site BSR**

| Commands and command elements | | Use this… |
|---|---|---|
| **Commands** | *consider split/skill* | to obtain the Expected Wait Time or agent data needed to identify the best local resource. One *consider* step must be written for each split/skill you want to check.[1] |
| | *consider location* | to obtain the Expected Wait Time or agent data needed to identify the best resource at a remote switch. One *consider* step must be written for each location you want to check. Routing information is obtained from the BSR Application plan for the active VDN. |
| | *reply-best* | to return data to another switch in response to a status poll |
| | *queue-to* | with the *best* keyword to queue calls to the best resource identified by the consider sequence. |
| | *check* | with the *best* keyword to queue calls to the best resource identified by the consider sequence if the resource meets certain conditions. |
| **Key word** | *best* | in *queue-to, check,* and *goto* commands that refer to the resource identified as best by a series of consider steps |
| **Conditional** | *wait-improved* | to prevent calls from being queued to an additional split/skill—local or remote—when the reduction in Expected Wait Time isn't enough to be useful. "Wait improved" means that a call's EWT must be improved by a specific amount (a figure you specify in seconds) over its current EWT or DEFINITY ECS won't queue it to the additional split/skill. |
| **User adjustment** | *adjust-by* | to control long-distance costs and limit trunk usage, reflecting factors such as availability of the trunks or agent expertise at remote locations. When a vector polls a local or remote resource, you can make the selection of that site less desirable. The higher the setting, the less chance that resource will be selected over another with a lower setting. With EWT returned, the setting increases the returned expected wait time for comparison with other returned EWTs.<br><br>Optionally, the adjust-by setting applies in the available agent case. If you are using the UCD-MIA or EAD-MIA available agent strategy, the setting decreases the returned agent idle time, making the agent appear less idle (busier). If you are using the UCD-LOA or EAD-LOA available agent strategy, the setting increases the returned agent occupancy, making the agent appear more occupied (busier). In either case with EAD, the MIA or the LOA is used as a tie breaker if more than one site has an agent available with the same highest skill level. |

1. Since the *consider* command is designed to compare two or more resources, *consider* commands are typically written in sequences of two or more with the sequence terminating in a *queue-to best* step. This set of *consider* commands and a *queue-to best* step is called a consider series.

## Considerations

- If one or more of the resources considered have an available agent, the resources with EWT are ignored. This is the “agent surplus” situation.
- If the available agent strategy (assigned to the active VDN) is 1st-found, the adjust-by is ignored and the first *consider* with an available agent is used for the queue-to best.
- If the available agent strategy is UCD-MIA, EAD-MIA, UCD-LOA, or EAD-LOA and there is more than one *consider* step with an available agent, then adjust-by is applied as part of the algorithm to select the “best” of the possible choices.

## Interactions

- Agent Telephone Display

  If collected digits are forwarded with an interflowed call, the forwarded digits are displayed on the answering agent’s telephone display (unless they’re overridden with newly collected digits).

- Best Service Routing (BSR)/LAI

  Restrictions and interactions that apply to LAI also apply to BSR status poll and interflow calls. See the *DEFINITY Call Vectoring/EAS Guide*, 555-230-521, or ‘‘Look-Ahead Interflow (Category A only)’’ for more information.

- BCMS

  BCMS does not report accumulated in-VDN time.

  BCMS does not log LAI attempts and therefore will not log BSR status polls, which are treated as LAI attempts.

- Call Vectoring

  The following considerations apply to ALL vectors when BSR is enabled on your switch.

  ***route-to VDN*:** If a call is routed to a new VDN, any “best” resource data defined by a series of consider steps in the previous VDN will be initialized (cleared)

  ***goto vector*:** If a *goto vector* command is executed, any “best” resource data produced by a series of consider steps in the original VDN will remain with the call and can be used in the subsequent vector.

  ***best* keyword:** The *best* keyword cannot be used as a replacement for split/skill in the following vector commands:

  — *converse-on split/skill*

  — *messaging split/skill*

The *best* keyword can be used in the following commands, but only with the conditionals listed:

— *goto step* or *goto vector* commands using the *expected-wait* or *wait-improved* conditionals

— *check* commands using the using the *unconditional*, *expected-wait*, or *wait-improved* conditionals

***Consider* command:** Don't use other commands within a series of *consider* steps, since these may delay the execution of the series.

Splits/skills used in *consider* commands must be vector controlled.

***Converse* command:** Collected digits forwarded with the call will be passed to VRU via the "digits" data passing type.

- Direct Department Calling

  BSR will function when the considered splits use DDC call distribution. Once the best resource is determined, the actual call distribution will follow the split's DDC setting regardless of the BSR Available Agent Strategy. DDC may not be used as a BSR Available Agent Strategy.

- Distributed Networking via QSIG - Manufacturers Specific Information (MSI)

  BSR will not function with systems from other vendors (unless that vendor develops a corresponding capability that works with DEFINITY ECS).

- Expert Agent Selection

  EAS is required to use the EAD-MIA or EAD-LOA Available Agent Strategy. EAS VDN skills (1st, 2nd, 3rd) can be used in *consider skill* commands.

- Facility Restriction Levels

  The FRL applies to status poll and interflow calls in the same way it works with the *route-to number* command.

- ISDN

  Best Service Routing and globally supported information transport are fully functional over ISDN PRI or ISDN BRI trunking facilities.

  **NOTE:**
  ATM trunking and IP trunking can be set up to emulate ISDN PRI. For information on setting this up, see the *DEFINITY ECS Administration for Network Connectivity*, 555-233-504, and the *DEFINITY ECS ATM Installation, Upgrades and Administration*, 555-233-124, documents.

- Look Ahead Routing (LAR)

  Look Ahead Routing (LAR) and BSR are incompatible.

  If a trunk is not available at the site being polled, an alternative route (as a secondary route via an ARS pattern) can be used to poll, assuming there is a secondary route available that supports transporting shared UUI in the DISconnect message. This does not use LAR. If no route is available for polling when a consider location step is executed, then BSR processing handles the situation and after a period of 30 seconds, subsequent calls will try to poll that location again.

  The use of alternative routes for polling only works if there are alterative routes for the interflow path, regardless of whether LAR or BSR is in use.

- Multi-Split/Skill Queuing

  A call may be queued up to 3 times by *queue-to* or *check* commands in the same vector. One vector may therefore contain up to 3 series of *consider* steps. Each series must be followed by a *queue-to best* step. Each consider series will select the best remote resource from the options you specify and queue the call to that resource.

  BSR can only queue simultaneously on the origin switch. BSR gives up control of a call once it queues the call at a remote resource.

- Network Access

  BSR operates over public, private, or virtual private (for example, SDN) ISDN-BRI and -PRI networks that meet the criteria explained in ‘‘Network requirements for BSR’’. Best Service Routing requires that the network support transport of user-to-user data via MSI or UUI as a codeset 0 Information Element. The numbers administered on the BSR Application Plan form are expected to access VDNs via ISDN trunks.

  Administration or call processing will not prevent access to other types of routing numbers, but BSR is only intended to support the types of applications described in this section. Attempts to use the BSR feature for any other purposes may not work.

- Operating Support System Interface (OSSI)

  The new administration commands, conditionals, keywords and forms are available via OSSI.

- Path Replacement for QSIG/DCS ISDN Calls

  Path replacement, using QSIG, for calls in queue and vector processing is available with DEFINITY R9.5 and newer releases. For calls that are waiting in queue or in vector processing, even if the call is not connected to an answering user, path replacement can be attempted to find a more optimal path for this call. This results in more efficient use of the trunk facilities.

  For the DEFINITY R9.5 and newer releases, the QSIG ISDN or DCS ISDN trunk path-replacement operation can be triggered for ACD calls by the Look-Ahead Interflow *route-to number* vector step, BSR *queue-to best* vector step, and the Adjunct Routing vector steps.

See the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521, for additional information on path replacement.

- QSIG

  LAI, BSR, and information forwarding function over QSIG trunk facilities if the remote locations are the DEFINITY systems. BSR and information forwarding require the DEFINITY R6.3 or later switch software.

- Redirection on No Answer (RONA)

  Calls redirected to a VDN by RONA can be subsequently processed and BSR or LAI applications. When the RONA feature redirects a call to a VDN, any best resource data defined in a previous vector will be initialized (cleared).

- Service Observing

  You can observe a call in BSR or LAI processing as long as the call is still connected through the local DEFINITY ECS. All current restrictions on Service Observing still apply.

- Transfer

  If a call is transferred to a VDN, any best resource data defined in previous vector processing will be initialized (cleared). In fact, transferred calls do not forward any of the information that is forwarded with interflows (previously collected digits, In-VDN time, etc.).

- Trunk Access Code (TAC)

  Use of routing numbers (status poll or interflow) that utilize TACs is not recommended since the required in-band outpulsing slows the setup operation significantly.

- VDN Override

  VDN Override applies to the BSR Application Number and the Available Agent Strategy option assigned on the VDN form. It also applies to the VDN name forwarded via Information Forwarding. When a *consider* step is executed, the application number and available agent strategy assigned to the active VDN for the call will be used.

- VDN Return Destination

  The best resource data for a call is initialized when the call first leaves vector processing and therefore will not be available should the call return to vector processing.

- VuStats

  No enhancements have been added for BSR.

# Call Management System (Category A only)

Call Management System (CMS) allows you to collect and monitor ACD facilities and personnel. You can create reports on the status of agents, splits/skills, trunks, vectors, and vector directory numbers. You can view and store historical CMS reports, view real-time reports, and view integrated reports at a terminal or PC.

Unlike Basic Call Management System (BCMS), the CMS resides on an adjunct computer that connects to the switch via a data link. See Figure 3-1 on page 3-27 for a typical ACD CMS configuration.

## Administering the DEFINITY-to-CMS interface

For detailed information on administering the interface between the DEFINITY and the CMS, refer to *CentreVu CMS Switch Connections and Administration*, 585-215-876.

**Table 3-16. Required forms**

| Form | Field |
|---|---|
| Feature-Related System Parameters | ■ Adjunct CMS Release<br>■ Automatic Call Distribution<br>■ ACD Log-in Identification Length<br>■ Minimum Agent Login ID<br>■ Password Length |
| Processor Interface Data Module (R5si and later configurations only) | ■ All (for one CMS link) |
| Processor/Trunk Data Module (PDM) | ■ All (for one CMS link) |
| X.25 Data Module (R5r and later configurations only) | ■ All (for one CMS link) |
| Processor Channel Assignment | ■ All (for one CMS link) |
| Interface Links | ■ All (for one CMS link) |
| Hunt Group | ■ Measured |
| Trunk Group (All) | ■ Measured |
| Vector Directory Number (VDN) | ■ Measured |
| Packet Gateway Board (PGATE) (R5r and later configurations only) | ■ All |

## Considerations

- CMS measurements may be inaccurate on calls to splits that intraflow to the attendant group.
- IP Trunk Groups and ATM Trunk Groups

IP trunk groups and ATM trunk groups are available with DEFINITY Release 8. To include measurement of the IP and ATM trunk group activity in CMS reports, you must have CentreVu CMS R3V8 or newer.

When an IP trunk group is set up on the DEFINITY, the Measured option on the Trunk Group form must be set to external (CMS) or both (CMS and BCMS) in order for CMS to receive the data from the DEFINITY.

External IP trunk number identifier (Port ID) information is sent from the DEFINITY to the CMS. Two types of messages can send information about single trunk group members and about status changes (from measured to unmeasured, or from unmeasured to measured via CMS) of trunk group members.

When IP trunk groups are administered on the switch, the cabinet location of the associated CLan board is determined for each IP trunk group member. When message information is reported to the CMS, the location-id is copied into the message.

- On the DEFINITY ECS R8i and newer, this is straightforward as a number in the range of 1 through 400 will fit in the circuit field of the messages sent to CMS. The result is that an IP trunk member with a port-id of T00001 will be displayed on CMS as 00000001. Similarly, an IP trunk member with port-id of T00400 will be displayed on CMS as 0000400.
- On the DEFINITY ECS R8r, forwarding IP trunk member port-ids to the CMS requires that the circuit field accommodate a number in the range of 1 to 511. To report an IP trunk member number in the range of 1 to 5000 requires the use of the slot field in the message in addition to the circuit field. In order to correlate IP trunk member port IDs on the switch and CMS, use the following table

**Table 3-17. IP trunk member port ID**

| Switch representation | CMS representation |
|---|---|
| T00001 through 100499 | 0000001 through 0000499 |
| T00500 through T00999 | 0001000 through 0001499 |
| T01000 through T01499 | 0002000 through 0002499 |
| T01500 through T01999 | 0003000 through 0003499 |
| T02000 through T02499 | 0004000 through 0004499 |
| T02500 through T02999 | 0005000 through 0005499 |
| T03000 through T03499 | 0006000 through 0006499 |
| T03500 through T03999 | 0007000 through 0007499 |
| T04000 | 0008000 |

# Call Prompting

See your system *Call Vectoring/EAS Guide* for a detailed description of Call Prompting and its uses. The guide contains information that is critical to the effective and efficient use of this feature.

Call Prompting uses specialized vector commands to process incoming calls based on information collected from the caller or from an ISDN-PRI message. It can be used in various applications to better handle incoming calls. The following list gives a brief description of some Call Prompting applications.

- Automated Attendant — Allows the caller to enter the extension of the party that he or she would like to reach. The call is routed to that extension.
- Data In/Voice Answer (DIVA) Capability — Allows the caller to hear an announcement based on the digits that he or she enters, or to be directed to a hunt group or another system extension.
- Data Collection — Allows the caller to enter data that can be used by a host/adjunct to assist in call handling. This data, for example, may be the caller's account number.
- CINFO (Caller Information Forwarding) Routing (Category A only) — Allows a call to be routed based on digits supplied by the network in an ISDN-PRI message.
- Message Collection — Gives the caller the option of leaving a message or waiting in queue for an agent.

## Administering call prompting

**Table 3-18. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ Vectoring (Prompting)<br>■ Vectoring (CINFO) (Category A only)<br>■ ISDN-PRI — for CINFO only<br>■ This form describes other vectoring options that may be required depending upon the application. |
| Feature-Related System Parameters | ■ Prompting Timeout |
| Vector Directory Number | ■ All |
| Announcements/Audio Sources | ■ Complete all fields for each extension that provides a Call Prompting announcement |

***Continued on next page***

**Table 3-18. Required forms (Continued)**

| Form | Field |
|---|---|
| Hunt Group | ■ Vector |
| Call Vector | ■ Complete a form for each Call Prompting vector |
| Station (multi-appearance) | ■ Button/Feature Button Assignments - callr-info |
| Attendant Console | ■ Feature Button Assignments -callr-info |

If Vectoring (Basic) is not enabled on the System-Parameters Customer-Options form, the Call Prompting feature cannot queue calls or make conditional checks based on queue or agent status, time of day, or day of week.

CINFO requires the AT&T Intelligent Call Processing (ICP) service, ISDN-PRI, and Vectoring (Prompting).

You can administer any display-equipped phone or attendant console with a Caller Information CALLR-INFO button. The button displays digits collected for the last *collect digits* command.

You must have Call Vectoring software for CMS to use Call Prompting (with or without Call Vectoring) with CMS.

## Considerations

Call prompting, with the exception of CINFO, competes with several features for ports on the call classifier - detector circuit pack or equivalent.

## Interactions

The following interactions apply specifically to Call Prompting. For general Call Vectoring interactions that may affect Call Prompting applications see ‘‘Call Vectoring’’.

- Authorization Codes

  If authorization codes are enabled, and a *route-to* command in a prompting vector accesses AAR or ARS, if the VDN’s FRL does not have the permission to use the chosen routing preference, then the system does not prompt for an authorization code and the *route-to* command fails.

- CallVisor ASAI (Category A only)

  ASAI-provided digits can be collected by the Call Vectoring feature via the *collect* vector command as dial-ahead digits. CINFO is passed to CallVisor ASAI.

- Hold

  With the exception of CINFO, if a call is put on hold during the processing of a *collect* command, the command restarts, beginning with the announcement prompt, when the call is taken off hold. All dialed-ahead digits are lost. Similarly, if a call to a vector is put on hold, vector processing is suspended when a *collect* command is encountered. When the call becomes active, the *collect* command resumes.

- Inbound Call Management (ICM) (Category A only)

  You can use Call Prompting to collect information that may later be used by an adjunct to handle a call.

- Transfer

  If a call to a VDN is transferred during a *collect* command, the *collect* command restarts when the transfer is complete, and all dialed-ahead digits are lost. Similarly, if a call to a vector is transferred, vector processing is suspended when a *collect* command is encountered. When the transfer is complete, the *collect* command resumes. This is not true when a *collect* command collects CINFO digits. In this case vector processing is not suspended. Attendant extended calls do suspend vector processing in the same way as transferred calls.

# Call Vectoring

Call Vectoring processes incoming and internal calls according to a programmed set of commands. These commands, called vector commands, determine the type of processing that calls receive. For example, vector commands can direct calls to on-premise or off-premise destinations, to any hunt group, split/skill, or to a specific call treatment such as an announcement, forced disconnect, forced busy, or delay. Vectors can queue or route calls based on a variety of different conditions.

There are many different applications for Call Vectoring. However, it primarily is used to handle the call activity of ACD splits/skills.

For more information about administering call vectoring, see ''Best Service Routing (Category A only)'', ''Network Call Redirection (NCR) (Category A only)'', and ''Look-Ahead Interflow (Category A only)''.

See the *Call Vectoring/EAS Guide* for your system for a detailed description of Call Vectoring and its uses. The guide contains information that is critical to the effective and efficient use of this feature.

## Administering Call Vectoring

**Table 3-19. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ Vectoring (Basic)<br>■ Vectoring (G3V4 Enhanced) (Category A only)<br>■ Vectoring (G3V4 Advanced Routing) (Category A only)<br>■ Vectoring (ANI/II-Digits Routing) (Category A only)<br>■ Vectoring (Attendant Vectoring)<br>■ Vectoring (Holiday Vectoring) |
| Vector Directory Number | ■ All |
| Announcements/Audio Sources | ■ Complete all fields for each extension that provides a vectoring announcement |
| Hunt Group | ■ Vector<br>■ ACD |
| Call Vector | ■ Complete a form for each vector |

***Continued on next page***

**Table 3-19. Required forms (Continued)**

| Form | Field |
|---|---|
| Feature-Related System Parameters | ■ Vector Disconnect Timer<br>■ Music/Tone on Hold<br>■ Port<br>■ Music (or Silence) on Transferred Trunk Calls |
| Vector Routing Table | ■ All |
| Holiday Table | ■ All |

Do not change a vector while it is processing calls since calls already in the vector could experience problems. Instead, add a new vector and change the VDN to point to the new vector.

You cannot enter a VDN extension in the fields listed in the following table.

**Table 3-20. Fields that do not allow a VDN extension.**

| Form | Field |
|---|---|
| Announcements/Audio Sources | ■ Extension Number |
| Call Coverage Answer Group | ■ Group Member Assignments |
| Call Coverage Paths | ■ Coverage Point Assignments, other than the last coverage point |
| Console Parameters | ■ CAS Back-up Extension |
| Feature-Related System Parameters | ■ ACA Long Holding Time Originating Extension<br>■ ACA Short Holding Time Originating Extension<br>■ Extensions With System wide Retrieval Permission<br>■ Controlled Outward Restriction Intercept Treatment<br>■ Controlled Termination Restriction (Do Not Disturb)<br>■ Controlled Station-to-Station Restriction |

***Continued on next page***

**Table 3-20. Fields that do not allow a VDN extension. (Continued)**

| Form | Field |
|---|---|
| Hospitality | ■ Extension of PMS Log Printer<br>■ Extension of Journal/Schedule Printer<br>■ Extension of PMS<br>■ Extension to Receive Failed Wakeup LWC Messages |
| Hunt Group and Agent LoginID with EAS | ■ Supervisor Extension<br>■ Member Extensions |
| Intercom Group | ■ Member Extensions |
| Listed Directory Numbers | ■ LDN Extensions |
| Loudspeaker Paging and Code Calling Access | ■ Extension Numbers Assigned to Codes |
| Pickup Groups | ■ Member Extensions |
| Remote Access | ■ Remote Access Extension |
| Station Forms | ■ Hunt to Station |
| Terminating Extension Group | ■ Member Extensions |

You can enter a VDN extension in the following fields.

**Table 3-21. Fields that do allow a VDN extension**

| Form | Field |
|---|---|
| Abbreviated Dialing Lists | |
| Call Coverage Paths | ■ allow it as the last coverage point only |
| Hunt Group | ■ Night Destination |
| Listed Directory Numbers | ■ Night Destination |
| Trunk Groups | ■ Night Destination<br>■ Incoming Destination |

You cannot enter a VDN extension as auxiliary data for the following buttons:

- Bridged Appearance (brdg-app)
- Data Call Setup (data-ext)

You can enter a VDN extension as auxiliary data for the following buttons:

- Remote Message Waiting Indicator (aut-msg-wt)
- Facility Busy Indication (busy-ind)
- Manual Message Waiting (man-msg-wt)
- Manual Signaling (signal)

## Interactions

- AP Demand Print

  A VDN cannot be used as an argument to the feature access code for AP Demand Print.

- Attendant Control of Trunk Group Access

  If a *route-to* step in a vector dials a controlled trunk group, vector processing continues at the next step.

- Attendant Recall

  Attendant Recall to a VDN is blocked.

- AUDIX Interface

  A *route-to* step in a vector may call the AUDIX extension. If a voice port can be seized to that adjunct, vector processing is terminated. The system sends a message to AUDIX requesting retrieval of messages for the originating extension (not the VDN).

  AUDIX may also be accessed by the *queue-to split* and *check split* commands. Also, the messaging step may use an AUDIX hunt group in its operation.

- Authorization Codes

  If authorization codes are enabled, and if a *route-to* command in a prompting vector accesses AAR or ARS and the VDN's FRL does not have the permission to utilize the chosen routing preference, then no authorization code is prompted for and the *route-to* command fails.

- Automatic Alternate Routing (AAR)/Automatic Route Selection (ARS)

  Any *route-to* command in a vector can dial an AAR/ARS FAC followed by other digits. It cannot dial only the FAC.

- Automatic Callback

  Automatic Callback cannot be used for calls placed to a VDN.

- Bridged Call Appearance

  VDN extensions cannot be assigned to bridged appearance buttons. A *route-to* command to an extension with bridged appearances updates bridged appearance button lamps.

- Busy Verification of Terminals and Trunks

  Busy verification of VDNs is denied and intercept tone is returned.

- Call Coverage

  A VDN may be administered as the last point in a coverage path.

- Call Forwarding

  Calls can be forwarded to a VDN. Calls placed by a *route-to* command to an extension that has call forwarding activated are forwarded.

  An attendant or phone with console permission cannot activation/deactivation call forwarding for a VDN.

  An attendant or phone with console permission cannot activation/deactivation call forwarding for a vector-controlled hunt group.

- Call Detail Recording

  You can administer the Feature Related System Parameters form so that the VDN extension is used in place of the Hunt Group or Agent extension. This overrides the “Call to Hunt Group - Record” option of CDR for Call Vectoring calls.

  If a vector interacts with an extension or group that has Call Forwarding All Calls active, normal Call Forwarding/CDR interactions apply.

  For incoming calls to a VDN, the duration of the call is recorded from the time answer supervision is returned.

  — If answer supervision is returned by the vector, and the call never goes to another extension, then the VDN extension is recorded as the called number in the CDR record.

  — If the call terminates to a hunt group, then the VDN, hunt group, or agent extension is recorded as the called number as per the administration described above.

  — If the call terminates to a trunk, then the following two CDR records are generated:

    - An incoming record with the VDN as the called number and the duration from the time answer supervision was provided to the incoming trunk.

    - An outgoing record containing the incoming trunk information as the calling number and the dialed digits and the outgoing trunk information as the called number.

  Outgoing vector calls generate ordinary outgoing CDR records with the originating extension as the calling number.

  No Ineffective Call Attempt records are generated for Call Vectoring *route-to* commands that are unsuccessful.

- Call Detail Recording — Account Code Dialing

  If a *route-to number* command in a vector specifies an CDR account code, vector processing continues at the next step.

- Call Park

  Calls cannot be parked on a VDN.

- Call Waiting Termination

  If an extension is busy and has call waiting termination administered, the *route-to with cov n* operation is considered unsuccessful and vector processing continues at the next step. *Route-to with cov y* is successful (call will wait) and vector processing terminates.

- Class of Restriction

  Each VDN in the system has a COR associated with it. This VDN COR is used to determine the calling permissions/restrictions, the AAR/ARS PGN, and the priority queuing associated with a vector.

- Code Calling Access

  A VDN cannot be used as the argument to the code calling access feature access code.

  If a *route-to number* command in a vector specifies the code calling feature access code, vector processing continues at the next step.

- Conference

  A call to a VDN can be included as a party in a conference call only after vector processing terminates for that call.

- Data Restriction

  Music will play on calls from data restricted extensions when the call receives music as the result of a wait-time vector step.

- Facilities Restriction Level

  If a *route-to* command dials an external number via AAR/ARS, the FRL associated with the VDN COR is used to determine the accessibility of a routing preference in an AAR/ARS pattern.

- Facility Busy Indication

  The facility busy lamp indication for a VDN is always off. A facility busy button may be used to call a VDN.

- Facility Test Calls

  If a *route-to number* command in a vector specifies a Facility Test Call, vector processing continues at the next step.

- Forced Entry of Account Codes

  If a COR requiring entry of account codes is assigned to a VDN, the *route-to number* commands executed by the associated vector are unsuccessful and vector processing continues at the next step.

- Individual Attendant Access

  A call sent to an attendant by a *route-to number* command can wait in the attendant priority queue. The call is removed from vector processing.

- Integrated Directory

  VDN names and extensions are not available in the Integrated Directory feature.

- Intercept Treatment

  A VDN cannot be used for Intercept Treatment.

- Inter-PBX Attendant Calls

  A *route-to number* command in a vector can dial the Inter-PBX Attendant. If the call attempts to access a controlled trunk group, vector processing continues at the next step.

- Intraflow and Interflow

  The functionality of intraflow and interflow may be obtained using the *check* and *goto* Call Vectoring commands.

  Calls may intraflow from an ACD split/skill that is not vector-controlled into one that is vector-controlled.

- Leave Word Calling

  LWC messages cannot be stored, canceled, or retrieved for a VDN.

- Night Service

  A VDN can be administered as a night service destination.

  *Route-to* commands that route to destinations with night service activated redirect to the night service destinations.

- Priority Calling

  A VDN cannot be used with the priority calling access code. Intercept tone is supplied to the user. If a *route-to number* in a vector specifies the priority calling access code, vector processing continues at the next step.

- Property Management System Interface

  VDNs cannot be used with the following features and functions: Message Waiting Notification, Check-In, Check-Out, Room Status, and Automatic Wakeup.

- Recorded Announcement

  The first announcement extension, second announcement extension, first announcement delay, second announcement delay, and recurring second announcement do not exist for a vector-controlled hunt group.

- Redirection on No Answer

  If an ACD split/skill or Direct Agent call is not answered after an administered number of rings, RONA can redirect that call to a VDN for alternate treatment.

- Ringback Queuing

  External call attempts made via *route-to* commands with coverage no are not queue via Ringback Queuing when all trunks are busy. External call attempts made via *route-to* commands with coverage yes are.

- Send All Calls

  If the destination of a *route-to with coverage no* command has the Send All Calls feature active, calls are not redirected. If there is an idle appearance, the call terminates and vector processing stops. If not, vector processing continues at the next step.

  If the Send All Calls button is pressed after a vector call is terminated, button activation is denied.

- Time of Day Routing

  Since a *route-to number* command in a vector can specify the AAR or ARS access codes, the TOD routing algorithm can be used to route the call.

- Timed After Call Work (ACW)

  A Timed ACW interval can be assigned to a VDN.

- Timed Reminder

  The attendant Timed Reminder is not available for calls placed, transferred, or extended to a VDN. Vectoring causes all other timers to be ignored.

- Transfer

  Calls can be transferred to a VDN.

- Traveling Class Mark

  A TCM is sent when a *route-to* command dials a seven-digit ETN or 10-digit DDD number via AAR/ARS. This TCM is the FRL associated with the VDN COR.

- VDN in a Coverage Path

  A call covering to a VDN can be routed to any valid destination by the call vectoring command *route-to*. The coverage option for the *route-to digits* command is disabled for covered calls. In other words, the *route-to digits with coverage=y* functions like the r*oute-to digits with coverage=n* command when processing covered calls. When the *route-to* command terminates a covered call locally, information identifying the principal and the reason for redirection are retained with the call. This information can be displayed on display phones or passed to an AUDIX or Message Center system.

  The class of restriction assigned to a VDN determines the partition group number (PGN). The PGN in turn determines the AAR or ARS routing tables used by *route-to* commands.

  When a call covers to a VDN, VDN override has no effect on the display shown on an answering display telephone. This station will show the normal display for a covered call.

# CentreVu Advocate (Category A only)

This section provides an overview of CentreVu Advocate. For extensive information on implementing and using Advocate, refer to the *CentreVu Advocate User Guide*, 585-215-953.

CentreVu Advocate is a collection of DEFINITY ECS features that provide flexibility in the way a call is selected for an agent in a call surplus situation and in the way that an agent is selected for a call in an agent surplus situation.

**NOTE:**
CentreVu Advocate requires Expert Agent Selection (EAS) on the DEFINITY ECS Release 6 or newer. CentreVu Dynamic Advocate is available with DEFINITY ECS Release 9 and newer.

CentreVu Advocate provides predictive and adaptive methods for call centers that address three fundamental questions in terms of how the most expensive resource of the center, its agents, are used every time a call is handled.

### What should this agent do next?

Advocate answers the question “What should this agent do next?” each time an agent becomes available and calls are waiting in queue. The term “should” is used deliberately because it implies a consideration of trade-offs in the decision. With Advocate, the answer to this question does not come from executing a set of pre-programmed directives such as “take the highest priority, oldest waiting call.” Such a fixed plan of attack considers nothing in terms of consequences. Instead, Advocate understands the consequences of its choices and the business objectives for each type of call.

### Which agent should take this call?

Advocate answers the question “which agent should take this call?” when a call arrives and there are available agents waiting for calls. Advocate can make this choice so that workloads are distributed fairly across the agents, to eliminate “hot seats”. Advocate can also promote fairer opportunities for compensation by delivering a predetermined mix of calls to agents.

### Does the call center need to adjust its operations to bring performance back to the desired level?

Advocate continuously evaluates the call center's performance to determine “what does the call center need to adjust to bring performance back to the desired level?” Advocate responds, down to the levels of an individual caller, when it detects that agent resources should be used differently to prevent a caller's wait times from being too high or to accomplish service level goals more consistently.

## Administering CentreVu Advocate

Based on the needs and challenges of your call center, you will determine which combination of call and agent selection will give you the best results and administer those methods on the DEFINITY ECS. See the ‘‘Call and agent selection’’ section for information about these decisions.

You need to make several decisions about how to implement CentreVu Advocate. Some of these decisions affect your call center system wide, while others affect particular Vector Directory Numbers (VDNs), skills, or agents.

The following table lists the features that are available with CentreVu Advocate and CentreVu Dynamic Advocate, the level of impact for implementing those features, and where the features are administered on the DEFINITY.

For a complete description and instructions on administering CentreVu Advocate, see *Administering CentreVu Advocate on DEFINITY ECS* in the *CentreVu Advocate User Guide*, 585-215-953.

**Table 3-22. Required forms**

**NOTE:**
Due to the complexity of administering CentreVu Advocate, this table is organized differently than the other "Required forms" tables in this chapter.

| Feature | Decision level | Where administered |
|---|---|---|
| Least Occupied Agent: | | |
| ■ LOA (Group Type) | ■ Skill | ■ Hunt Group form |
| ■ ACW Considered Idle | ■ System | ■ Feature-Related System Parameters form |
| Percent Allocation: | | |
| ■ Percent Allocation (call handling preference) | ■ Agent | ■ Agent LoginID form |
| ■ PAD (group type) | ■ Skill | ■ Hunt Group form |
| ■ Expected Call Handling Time | ■ Skill | ■ Hunt Group form |
| ■ Dynamic Percentage Adjustment | ■ Skill | ■ Hunt Group form |
| ■ Service Level Target | ■ Skill | ■ Hunt Group form |
| ■ ACW Considered Idle? | ■ System | ■ Feature-Related System Parameters form |
| ■ Auto Reserve Agents | ■ System | ■ Feature-Related System Parameters form |
| Dynamic Queue Position: | | |
| ■ Dynamic Queue Position | ■ Skill | ■ Hunt Group form |
| ■ Service Objective | ■ VDN | ■ Vector Directory Number form |
| Service Objective: | | |
| ■ Service Objective (activate for agent) | ■ Agent | ■ Agent LoginID form |
| ■ Service Objective (set target objective) | ■ Skill | ■ Hunt Group form |
| ■ Call Selection Measurement (CWT or PWT) | ■ System | ■ Feature-Related System Parameters form |

*Continued on next page*

**Table 3-22. Required forms (Continued)**

**NOTE:**
Due to the complexity of administering CentreVu Advocate, this table is organized differently than the other "Required forms" tables in this chapter.

| Feature | Decision level | Where administered |
|---|---|---|
| Service Level Supervisor: | | |
| ■ Service Level Supervisor (administer for skill) | ■ Skill | ■ Hunt Group form |
| ■ Activate on Oldest Call Waiting | ■ Skill | ■ Hunt Group form |
| ■ Call Selection Override | ■ System<br>■ Skill | ■ Feature-Related System Parameters form<br>■ Hunt Group form |
| Overload Thresholds | ■ Skill | ■ Hunt Group form |
| Dynamic Threshold Adjustment | ■ Skill | ■ Hunt Group form |
| Service Level Target | ■ Skill | ■ Hunt Group form |
| Reserve Agents | ■ Agent | ■ Agent LoginID form |
| Predicted Wait Time (PWT) | ■ System | ■ Feature-Related System Parameters form |
| Call Handling Preference (call selection method: Greatest Need, Skill Level, Percent Allocation) | ■ Agent | ■ Agent LoginID form |
| Group Type (agent selection method: UCD-MIA, EAD-MIA, UCD-LOA, EAD-LOA, PAD) | ■ Skill | ■ Hunt Group form |

## Call and agent selection

### Call selection

Call selection methods are used when calls are in queue and an agent becomes available. This is known as a *call surplus* condition. During such conditions, the DEFINITY considers the call selection method that is administered for the agent on the Agent LoginID Form to determine which skill to serve. Once a skill is identified, the call at the head of that queue is selected and delivered to the agent. Call selection is based on such things as call handling preference, call selection measurement, and the use of service objectives.

### Agent selection

Agent selection methods are used when there are one or more available agents for an incoming call. This is known as an *agent surplus* condition. Agent selection methods are administered as a hunt group type for the skill. CentreVu Advocate allows you to select agents according to occupancy, idleness, individual skill level, and the percentage of time that you want the agent to spend serving each skill.

## Automated agent staffing adjustments

### What are automated staffing adjustments?

CentreVu Advocate provides you with options that automate staffing during call center operation. These methods simplify call center management and eliminate the need for moving agents from skill to skill to ensure coverage as call conditions change.

Advocate offers you the ability to assign reserve agents and set overload thresholds to determine when those reserve agents will be engaged. The CentreVu Dynamic Advocate feature (available with DEFINITY ECS R9 and newer), known as *Dynamic Threshold Adjustment*, takes this a step further by automatically adjusting the thresholds as needed to help maintain the service levels you defined.

The Dynamic Percentage Adjustment feature (available with DEFINITY ECS R9 and newer), gives you the ability to automate adjustments to predefined allocations for your agents' time to maintain defined service levels. Auto Reserve Agents, another feature that is new with R9, allows you to intentionally leave an agent idle in a skill when the agent's adjusted work time has exceeded the percentage that you administered for that skill.

## Call selection at a glance

The following table shows what happens during call surplus conditions, according to the call selection methods that have been administered on the DEFINITY.

| IF calls are waiting when an agent becomes available and the agent's selection method is . . . | THEN the DEFINITY takes the highest priority call . . . |
|---|---|
| Skill Level without Service Objective | with the highest skill level and the longest CWT or PWT. |
| Skill Level with Service Objective | with the highest skill level and the highest ratio of CWT/SO or PWT/SO. |
| Greatest Need without Service Objective | with the longest CWT or PWT. |
| Greatest Need with Service Objective | with the highest ratio of CST/SO or PWT/SO. |
| Percent Allocation | that is the oldest call waiting that best maintains the administered target allocations for all skills. |

## Agent selection at a glance

The following table shows what happens during agent surplus conditions, according to the agent selection method that has been administered.

| WHEN agents are available, a call arrives, and the agent selection method is . . . | THEN the DEFINITY selects . . . |
|---|---|
| EAD-MIA | the highest skill level, most idle agent. |
| UCD-MIA | the most idle agent, without regard to skill level. |
| EAD-LOA | the highest skill level agent with the lowest occupancy. |
| UCD-LOA | the least occupied agent, without regard to skill level. |
| PAD | the agent with the lowest ratio of adjusted work time and target allocation for the skill. |

## Combining agent and call selection methods

CentreVu Advocate provides a variety of features to help meet your business goals and to help you manage your agent resources. The table below shows some of the ways you can combine call and agent selection methods to meet your company's specific needs.

| IF your goal is to . . . | THEN consider . . . |
|---|---|
| Maintain service levels while controlling the time agents spend serving each of their skills | ■ Percent Allocation<br>■ Dynamic Percentage Adjustment<br>■ PAD |
| Maintain service levels using more or less time from reserve resources to supplement staffing as needed | ■ Greatest Need<br>■ Service Level Supervisor<br>■ Dynamic Threshold Adjustment<br>■ UCD-LOA |
| Add customer segmentation with differentiated levels of service while routing all segments to the same skill to simplify staffing | ■ Greatest Need<br>■ Dynamic Queue Position<br>■ UCD-LOA |
| Increase revenue by assigning agents their best skills as primary skills and limiting the use of reserve skills to eliminate long call wait times | ■ Greatest Need<br>■ Service Objective<br>■ Service Level Supervisor<br>■ UCD-LOA |

| IF your goal is to . . . | THEN consider . . . |
|---|---|
| Ensure that critical skills are covered, regardless of caller wait time in other skills | ■ Greatest Need<br>■ Service Level Supervisor<br>■ Call Selection Override<br>■ Oldest Call Waiting<br>■ UCD-LOA |
| Control the time your agents spend serving their assigned skills while maintaining the ability to change to meet service level requirements for the center | ■ Percent Allocation<br>■ Dynamic Percentage Adjustment<br>■ Call Selection Override<br>■ Service Level Supervisor<br>■ PAD |
| Automate agent staffing to activate back up agents a little sooner or a little later to meet service level goals | ■ Greatest Need or Skill Level<br>■ Service Level Supervisor<br>■ Dynamic Threshold Adjustment<br>■ UCD-LOA or EAD-LOA |
| Minimize the complexity of differentiating service levels for different types of calls that require similar agent abilities | ■ Greatest Need or Skill Level<br>■ Dynamic Queue Position<br>■ UCD-LOA or EAD-LOA |
| Maximize the amount of time that agents spend in high contribution roles while limiting their use of lesser skills to address wait time problems | ■ Greatest Need<br>■ Service Objective<br>■ UCD-LOA |
| Spread calls more evenly among agents while delivering the right level of service to each skill | ■ Greatest Need<br>■ Service Objective<br>■ UCD-LOA |
| Use agents in their most proficient skills while minimizing the hot seat problem to some extent | ■ Skill Level<br>■ EAD-LOA |

## Different needs within a call center

You may find that one Advocate solution does not fit for your entire organization. Your call center may have different needs within particular areas or departments, and Advocate can help to meet these varying needs. A sales department, for example, may choose to use Dynamic Queue Position to create differentiation among various types of customer without creating a different skill for each type of sales call. A service department, on the other hand, may be more interested in working toward similar goals for each technical support skill, while eliminating the hot seats often experienced by the well trained, multiskilled agents.

Avaya offers a subscription service for Advocate customers that provides access to skilled consultants with expertise in understanding how Advocate helps to solve business problems. For more information, please contact your Avaya Account Executive or CRM Opportunity Management at 1-877-9-CRMOMC.

## Considerations

For detailed information on the considerations related to using the Advocate feature, refer to the *Feature Interactions* chapter in the *CentreVu Advocate User Guide*, 585-215-953.

## Feature compatibility

It is important to choose the right combination of features to meet your organization's needs and ensure that CentreVu Advocate is set up to work most effectively. This section summarizes the features that provide the best results when used together and also lists those that are not designed to work together.

### Call selection methods (call handling preferences)

The following table shows the features that work effectively with the various CentreVu Advocate call selection methods.

| Call selection method | Recommended to work with |
|---|---|
| Greatest Need | ■ Predicted Wait Time<br>■ Service Objective<br>■ Service Level Supervisor<br>■ UCD-MIA<br>■ UCD-LOA |
| Skill Level | ■ Predicted Wait Time<br>■ Service Objective<br>■ Service Level Supervisor<br>■ EAD-MIA<br>■ EAD-LOA |
| Percent Allocation | ■ Dynamic Percentage Adjustment<br>■ Auto Reserve Agents<br>■ Service Level Supervisor<br>■ PAD |

### Agent selection methods (hunt group types)

The following table shows which features work with the various agent selection methods.

| Agent Selection Method | Recommended to work with |
|---|---|
| UCD-MIA | ■ Greatest Need<br>■ Predicted Wait Time<br>■ Service Objective<br>■ Service Level Supervisor |
| EAD-MIA | ■ Skill Level<br>■ Predicted Wait Time<br>■ Service Objective<br>■ Service Level Supervisor |
| UCD-LOA | ■ Greatest Need<br>■ Predicted Wait Time<br>■ Service Objective<br>■ Service Level Supervisor |
| EAD-LOA | ■ Skill Level<br>■ Predicted Wait Time<br>■ Service Objective<br>■ Service Level Supervisor |
| PAD | ■ Percent Allocation<br>■ Dynamic Percentage Adjustment<br>■ Auto Reserve Agents<br>■ Service Level Supervisor |

### Feature combinations to avoid

The PAD agent selection method should not be used with Greatest Need or Skill Level call selection methods.

## Interactions

For detailed information on the interactions between the Advocate feature and other features and adjuncts, refer to the *Feature Interactions* chapter in the *CentreVu Advocate User Guide*, 585-215-953.

# Expert Agent Selection (Category A only)

See the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521, for a detailed description of Expert Agent Selection. The guide contains information that is critical to the effective and efficient use of this feature.

Use Expert Agent Selection (EAS) to route incoming Automatic Call Distribution (ACD) calls to the agent who is best qualified to handle the call, that is, the agent with the specialized skills or experience required to best meet the caller's needs.

In addition, EAS provides the following capabilities:

- You assign all agent functions to the agent login ID and not to a physical phone. Therefore, EAS agents can login to and work at any phone in the system.
- Using the agent login ID, a caller places a call directly to a specific agent. These calls can be treated and reported as ACD calls.

EAS ensures the best possible service to the caller.

## Administering EAS

**Table 3-23. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ ACD<br>■ Expert Agent Selection (EAS)<br>■ EAS-PHD<br>■ Vectoring (Basic) |
| Agent LoginID | ■ All |
| Hunt Group | ■ Skill<br>■ ACD<br>■ Vector<br>Set all three fields to y.[1]<br>■ Group Type (ucd/ead) |
| Vector Directory Number | ■ 1st/2nd/3rd Skill (optional) |
| Class of Restriction | ■ Direct Agent Calling |

***Continued on next page***

**Table 3-23. Required forms (Continued)**

| Form | Field |
|---|---|
| CDR System Parameters | ■ Record Called Agent Login ID Instead of Group or Member |
| Call Vector | ■ All |
| Feature-Related System Parameters | ■ Expert Agent Selection (EAS) Enabled<br>■ Minimum Agent-LoginId Password Length<br>■ Direct Agent Announcement Extension/Delay<br>■ Message Waiting Lamp Indicates Status For |

1. If the Message Center field is set to AUDIX on the Hunt Group form, the Skill and ACD fields must be set to y, but the Vector field can be set to either y or n.

EAS must be both optioned on the System Parameters Customer-Options form, and enabled on the Feature-Related System Parameters form. Once EAS is optioned, you can complete most of the EAS-related administration prior to enabling the feature.

When EAS is optioned on the System-Parameters Customer-Options form, Skill Hunt Groups replace splits. In addition, help messages, error messages and field titles change from “Split” to “Skill” on various forms.

Any EAS agent Login ID must be part of the station numbering plan.

Physical aspects of the phone, such as the set type and button layout, are associated with the phone and not the Login ID. On the Station form with the EAS featured optioned, when a work-mode button is selected, no “Gp” information can be entered. The assist and queue status buttons require that “Group” be entered.

## Administering Direct Agent Announcement

Direct Agent Announcement (DAA) enhances Direct Agent Calling capabilities for CallVisor Adjunct-Switch Application Interface (ASAI) and Expert Agent Selection (EAS). It plays an announcement to Direct Agent callers waiting in a queue. The following forms should be administered for DAA.

You must also have enabled either Expert Agent Selection (EAS) or ASAI Adjunct Routing (or both).

**Table 3-24. Required forms**

| Form | Field |
|---|---|
| System-Parameters Customer-Options | ■ ACD<br>■ Vectoring (Basic)<br>■ Expert Agent Selection (EAS)<br>OR<br>■ ASAI Adjunct Routing |
| Feature-Related System Parameters | ■ Direct Agent Announcement Delay<br>■ Direct Agent Announcement Extension |
| Announcements/Audio Sources | ■ All |

## Detailed administration for EAS

In general, EAS uses vectors to route calls to agents with the required skills. To administer EAS you must:

- Assign skills to VDNs on the Vector Directory Number form.
- Create vectors that will route a call to the correct skill.
- Assign skills with priority levels to agents on the Agent Login ID form.

### VDN administration

You can administer up to three VDN skill preferences on the Vector Directory Number form in the 1st Skill, 2nd Skill and 3rd Skill fields. These fields indicate the skills that are required to handle calls to this VDN. All of the VDN skills on the VDN form are optional. For example, only the first and third, or only the second and third VDN skills might be assigned. Vector steps can then refer back to these fields to route calls. For example, *queue-to skill 1st* routes calls the skill administered as 1st on the VDN form.

### Vector administration

When a call routes to a VDN, the VDN directs the call to the vector that is specified on the Vector Directory number form. The vector then queues the call to the skill specified in a vector step. You can write vectors that route calls either to specific skill numbers or to the skill preferences administered on the Vector Directory Number form.

### Agent administration

Assign skills to each agent. In addition, assign a skill level to each skill for the agent. When a vector routes incoming calls to a skill, the call is delivered to an available agent with the skill assigned. If no agents are available, the call is queued until it can be answered by an agent who has the skill required to handle the call.

## Detailed description

### Agent selection

The administered agent selection method and Call Handling Preference determine which agent will receive an incoming call.

#### Agent selection method

EAS can use either Uniform Call Distribution (UCD) or Expert Agent Distribution (EAD) to select agents for calls. Both methods can use the Most-Idle Agent (MIA) or the Least Occupied Agent (LOA) algorithm to select agents. For more information on agent selection methods, see ‘‘Automatic Call Distribution’’.

#### Call handling preference administration

The call handling preference selected on the Agent Login ID form can route calls based on either greatest need or agent skill level. Table 3-25 summarizes how a call is routed based on greatest need or agent skill level administration with either UCD or EAD distribution..

**Table 3-25. EAD Call handling preference call distribution**

| If. . . | EAD with Skill Level | EAD with Greatest Need |
|---|---|---|
| Agents are available. When a new call arrives it is delivered to: | Most-idle agent with the highest skill level for the calls’ skill. | Most-idle agent with the highest skill level for the call’s skill. |
| Agents are not available, calls are in queue. When an agent becomes available, he or she receives: | Highest priority oldest call waiting for agent’s highest level skill with calls in queue. | Highest priority oldest call waiting for any of the agent’s skills. |

**Table 3-26. UCD Call handling preference call distribution**

| If. . . | UCD with Skill Level | UCD with Greatest Need |
|---|---|---|
| Agents are available. When a new call arrives it is delivered to: | Most-idle agent with the call’s skill. | Most-idle agent with the call’s skill. |
| Agents are not available, calls are in queue. When an agent becomes available, he or she receives: | Highest priority oldest call waiting for the agent’s highest level skill with calls in queue. | Highest priority oldest call waiting for any of the agent’s skills. |

### MIA Across Splits/Skills

In addition, both UCD and EAD can be used in conjunction the MIA Across Splits/Skills option. With MIA Across Splits/Skills, one available agent queue is set up for the entire system. When an agent answers a call for any skill, the agent is removed from the MIA queue.

See, ‘‘Automatic Call Distribution’’ for more information about UCD, EAD, and MIA Across Splits/Skills.

## Additional agent login ID capabilities

The following capabilities are also associated with agents’ login IDs.

- Auto-Answer — When EAS is optioned, auto answer settings can be assigned to agents on the Agent LoginID form. An agent’s auto answer setting will apply to the station where the agent logs in. If the auto answer setting for that station is different, the agent’s setting overrides the station’s.
- Calls — to call an EAS Agent, the caller dials the Login ID extension. The call is extended to the physical extension where the agent with that Login ID is logged in. Calls to the Login ID reach the agent independent of the phone the agent is currently using. For example, when agents use multiple phones because they have multiple offices or rotate desks, login IDs allow these agents to be reached independent of their current location.
- Name — calls to the Login ID display the name associated with the Login ID and not the name associated with the phone. This is also true for calls made from a phone with an agent logged in.
- Coverage — when the agent is logged out, or when calls go to coverage because the agent is busy, or does not answer, calls to the Login ID go to the coverage path associated with the agent and not the phone. When an agent is logged out, calls go to the agent’s busy coverage destination.
- Restrictions — calls to the Login ID or from the agent use the restrictions associated with the agent and not the phone.

Phones are fully functional when an agent is not logged in. The restrictions, coverage, and name revert to the phone administration when the agent logs out.

## Direct Agent calling

Calls to an agent's Login ID are treated as Direct Agent calls if the caller and the agent have the "Direct Agent Calling" Class of Restriction (COR). Direct Agent calls can be originated by stations or trunks. If the caller or agent does not have the proper COR, the call is treated as a normal non-ACD (personal) call.

See the ''Direct agent calling (Category A only)'' section under ''Automatic Call Distribution'' for additional information on how Direct Agent calling works, is used in the call center, and is administered.

Direct Agent calls are treated as ACD calls and receive zip tone answer, queue as other ACD calls do, allow the agent to enter after call work following the call, and are measured by BCMS and CMS.

Any of the agent's skills can be the Direct Agent skill. When greatest need is optioned as the Call Handling Preference, the agent always gets Direct Agent calls before any skill calls. This is because Direct Agent calls have a higher priority than skill calls. However, when skill level is optioned as the Call Handling Preference, the agent will get direct agent calls first only if the direct agent skill has the agent's highest skill level. Otherwise calls from a skill with a higher level will be distributed before Direct Agent calls. If the Direct Agent skill and another skill are the same skill level, the agent will always receive Direct Agent calls before the other skill calls because Direct Agent calls have a higher priority.

A *route-to* vector command with an EAS Login ID as the destination is treated as a Direct Agent call if the VDN and agent have the COR and the Direct Agent field is set to **y**.

## Considerations

Station User records cannot be shared between TTI ports and EAS LoginID extensions. This causes a reduction in the number of possible EAS LoginID extensions allowed by the System depending on the number of administered TTI ports. For example, if 2,000 TTI ports are administered, the maximum number of allowable EAS LoginIDs is reduced by 2,000.

EAS agent Login IDs are also tracked for personal calls. CMS uses the first skill an EAS Agent is logged into to track personal calls. If the first logged-into skill is unmeasured, CMS credits the agent Login ID with the personal call, but no skill hunt group is credited with the personal call.

The system can have either splits/skill hunt groups but not both simultaneously. Non-ACD hunt groups can exist with either splits or skills. Skill hunt groups are required when using EAS.

## Interactions

Unless otherwise specified, the feature interactions for skill hunt groups are the same as for vector-controlled splits.

- Abbreviated Dialing

  Abbreviated dialing can be used to log in/out EAS agents. Abbreviated dialing lists/buttons can only be administered for stations.

- Add/Remove Skills

  In the EAS environment, agents have the ability to add and remove skills during a login session by dialing a FAC. Other phone users with console permissions can add or remove an agent's skill on behalf of the agent. (Note that the ability to add and remove skills depends on whether a user has a class of restriction (COR) that allows adding and removing skills.)

- Administration Without Hardware

  EAS Login ID extensions are extensions without hardware. Login ID extensions require space in the dial plan.

- Agent Work Mode States

  With EAS, agents can only be in a single work mode at any one time for all their skills.

- Assist

  The Assist feature can be used with a skill hunt group (for example, where there is one supervisor per skill hunt group). When assist is selected, a call is placed to the supervisor associated with the skill for the active call.

- AUDIX

  Calls to the EAS agent Login ID can cover to AUDIX.

- Auto-Available Splits/Skills

  If a skill hunt group is administered as an Auto-Available Skill (AAS) the EAS Login IDs assigned to this skill must also be administered as Auto-Available. When the switch reinitializes, these Login IDs are automatically logged in with the Auto-In work-mode. If any switch features attempt to change the work-mode to anything except to Auto-In, this attempt is denied. This feature is not intended for human agents.

- Automatic Answering with Zip Tone

  The Automatic Answer option can only be administered for a physical extension.

- Automatic Callback

  Users can't activate Automatic Callback to an EAS agent's Login ID. They can activate Automatic CallBack to the phone where the agent is logged in.

- Call Forwarding

  Skill hunt groups (since they are vector-controlled) cannot be call forwarded. EAS agent Login IDs cannot be forwarded, but the physical extension where the EAS agent is logged in can be forwarded.

- Call Park

  Calls cannot be parked on the skill hunt group extension.

- Call Pickup

  Skill hunt group extensions and EAS Login ID extensions cannot be members of a call pickup group.

- Class of Restriction (COR)

  Skill hunt groups do have a class of restriction. This is used if the skill hunt group extension is called directly.

  The COR for an EAS agent Login ID overrides the physical extension's COR of the phone an EAS agent logs into.

- Class of Service (COS)

  EAS agents do not have a COS associated with their Login ID. Therefore, the COS of the telephone is not affected when an EAS agent logs into it.

- Directed Call Pickup

  An EAS agent can use the Directed Call Pickup feature to pick up a call and/or have his or her calls picked up by another agent. The Class of Restriction of the agent will override the Class of Restriction of the station where the agent is logged in.

  If both the station's COR and the logged-in agent's COR allow the call to be picked up using Directed Call Pickup, the user picking up the call can use either the station's extension or the agent's loginID.

- Displays - Phone

  When an EAS agent logs in, the display for originators who call the Login ID shows the Login ID and agent name (as administered via the Agent Login ID form). Calls that the agent originates show the Agent Login ID and agent name at the receiving telephone display. However, the user can display the name of the physical extension where the EAS agent is logged in. To do this, the user must be active on a call with the agent, and must have a telephone with an alphanumeric display and an inspect button. When the inspect button is pressed during a call to or from the EAS agent, the physical extension name of the agent is displayed.

  Calls to the physical extension show the physical extension's number and name on the originator's display.

- Leave Word Calling

  When an EAS agent is logged into a station, the agent can only retrieve LWC messages left for that agent's login ID. To retrieve LWC messages left for that station, the agent must log out.

  When an EAS agent is logged into a station, its Message lamp defaults to tracking the status of LWC messages waiting for the station. However, you can assign the Message lamp to track the status of LWC messages waiting for the agent's login ID.

- Look Ahead Interflow

  VDN skills are not sent to another ACD/PBX when a call interflows using Look Ahead Interflow. If skills have the same meaning on both ACDs, then a Look Ahead Interflow command to a VDN with the same skills assigned can provide a mapping of the skills.

- Message Waiting Lamp

  The Message Waiting Lamp by default tracks the status of messages waiting for the logged in EAS agent LoginID rather than messages for the physical extension. The operation of the Message Waiting Lamp can be changed so that it tracks the status of messages waiting for the physical extension where the agent is logged in. Refer to *DEFINITY ECS Administrator's Guide*, 555-233-506, for more information about Feature-Related System Parameters.

- Queue Status Indications

  Physical extensions can be administered with Queue Status Indicator buttons and lamps for skill hunt groups. Queue Status Indicators can be administered for all skills needed by agents using that physical extension, given that enough buttons are available.

- Service Observing

  The Service Observing feature is activated in the EAS environment by dialing either the physical extension of the telephone where an EAS agent is logged in or the Login ID of the agent.

- VuStats

  VuStats displays can show an agent's skill assignments and can show some measurements by skill.

# Inbound Call Management

Inbound Call Management (ICM) allows you to integrate features of the DEFINITY with host-application processing and routing, and automate delivery of caller information to agents' displays. You can create a sophisticated system to handle inbound calls for applications such as telemarketing and claims processing.

To implement ICM, you integrate features of the DEFINITY such as Automatic Call Distribution (ACD), Expert Agent Selection (EAS) Call Vectoring, Direct Agent Calling, and Call Prompting with an application on a host processor. The host application, or adjunct, can be a CallVisor/PC, Conversant voice system, Telephony Services Server serving a local-area network, or a vendor application using the CallVisor Adjunct/Switch Applications Interface (ASAI). A CallVisor ASAI link between the switch and adjunct allows the adjunct to control incoming call processing and routing.

In addition, you can automate ACD agent telephone displays and associate them with new and transferred calls, and assist calls to a supervisor. You can display incoming call information such as Calling Party Number (CPN), Billing Number (BN), and Dialed Number Identification Service (DNIS). Or, you can set up the adjunct to retrieve caller information from a database and display it on a particular agent's screen, based on the service dialed.

See ''Detailed description'' for more information on applications.

## Administering ICM

Display the System-Parameters Customer-Options and ensure that the ACD option is enabled. If you are using CallVisor ASAI or Call Vectoring, ensure appropriate ASAI Capability Groups options or the Vectoring (Basic) and/or Vectoring (Prompting) options are enabled.

**Table 3-27. Required forms**

| Form | Field |
|---|---|
| System-Parameters Customer-Options | ■ ACD<br>■ Vectoring (Basic)<br>■ Vectoring (Prompting)<br>■ ASAI Capability Groups |
| Trunk Group (ISDN-PRI) | ■ Per Call CPN/BN |
| Hunt Groups | ■ Group Type<br>■ ACD<br>■ Queue<br>■ Vector<br>■ Measured<br>■ Supervisor Extension<br>■ Controlling Adjunct<br>■ Queue Length<br>■ Calls Warning Threshold<br>■ Calls Warning Port<br>■ Time Warning Threshold<br>■ Time Warning Port |
| Class of Restriction | ■ Direct Agent Calling (optional) |
| Call Vector | ■ All |
| Station (agent stations) | ■ All |
| Agent LoginID (EAS only) | ■ All |

- **Trunk Group form** — Administer the Per Call CPN/BN field for the appropriate ISDN-PRI trunk group. The corresponding information is sent with a call-offered event report to the adjunct.
- **Hunt Group form** — Complete a Hunt Group form for each split/skill that the ICM adjunct will monitor.
- **Call Vector form** — If you are using Call Vectoring, an ASAI link interface extension number is required for **adjunct routing** vector commands. This extension is the same as the one you enter on the Station form.

See ‘‘Automatic Call Distribution’’, ‘‘Call Vectoring’’, ‘‘Call Prompting’’, and CallVisor Adjunct-Switch Application Interface (refer to *DEFINITY ECS Administrator’s Guide*, 555-233-506) and any other features you are implementing for ICM for additional administration requirements.

## Detailed description

### Applications

The following are some typical ICM applications:

- The system passes calling party/billing number (CPN/BN) information and the call is routed to an adjunct application for screen pop and supervisory transfers, with screen duplication.
- The system sends to the adjunct application both caller and prompter information about all incoming calls to a particular number. According to caller information in a database, the application directs the switch to route the call. For example, the call could be routed to a preferred agent, to best customer treatment, or to accounts receivable.
- The system uses Call Prompting to obtain a customer account number and then passes this information to the adjunct for call routing or screen pop.
- The system connects the caller to a voice response unit (VRU), along with caller CPN/BN and DNIS information.The caller then interacts with the VRU to direct how the call is handled. The system can verify a caller's identity and provide access to database information such as claims status or account balance.
- With Direct Agent Calling, an adjunct application can transfer a call to a specific ACD agent and have the call treated as an ACD call and tracked on Call Management System (CMS).
- An adjunct application can attach information used by another application to an ICM call using User-to-User Information fields. The adjunct transfers the call, along with the application-specific information, over primary rate interface (PRI) trunk to a CallVisor ASAI application at another switch. For example, an application at one switch can determine a caller's account or claim number and pass this information to a special list on another switch, where an application will transfer the call.

See the *DEFINITY ECS CallVisor ASAI Technical Reference*, 555-230-220, for additional application scenarios.

### Agent data screen delivery applications

You can use the Conversant voice system to deliver appropriate display data about callers to agents. You can pass information such as CPN/BN, DNIS, and Look-Ahead Interflow information, digits collected from Call Prompting, and which agent is selected to a Conversant voice system. Conversant delivers the appropriate data screen to the agent who takes the voice call. Conversant can transfer or duplicate data screens for transferred or conferenced calls. A simplified configuration of this type of application is shown in Figure 3-2 on page 3-93. Conversant VIS is used as an example — other adjunct processors have similar capabilities but should be verified for a particular application. If the host supports ASAI, Conversant is not needed.

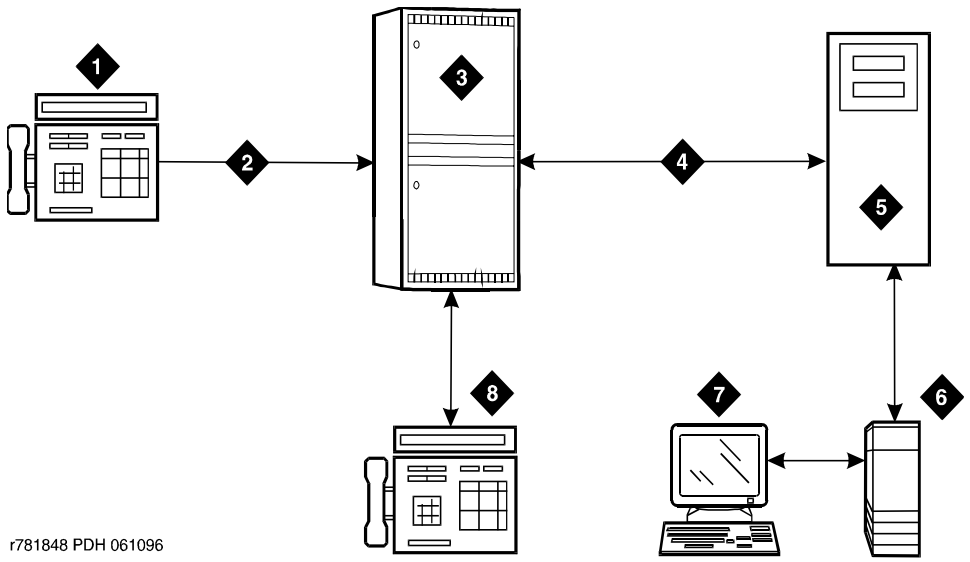



**Figure Notes**

1. Telephone
2. ISDN-PRI
3. DEFINITY ECS
4. ASAI
5. Conversant
6. Host
7. Agent data terminal
8. Agent telephone

**Figure 3-2. Simplified ICM configuration for data screen delivery**

General processing for this type of application occurs as follows.

1. The Conversant voice system or host requests notification for events such as call offered, call ended, call connected, call dropped, call transfer, and alerting.
2. The switch notifies Conversant with event reports when the call arrives, when the agent answers, when the call drops, and so on.
3. Conversant sends information to the host application so that it can send a data screen to the agent's data terminal.

Conversant can determine when a call drops before being answered and can track abandoned calls or use CPN/BN information for callbacks.

### Integration with speech processing adjuncts

ICM can be used to provide integration with VRUs. The advantages of using ICM with CallVisor ASAI in addition to tip/ring interfaces are as follows:

- Data-screen integration is provided on transferred calls.
- Answer notification is provided on internal calls (CallVisor ASAI capabilities let you know what happens with the call).
- ISDN network information such as CPN/BN and DNIS is delivered to agents (call prompting for this information is not necessary).

A simplified configuration of this application is shown in Figure 3-3.

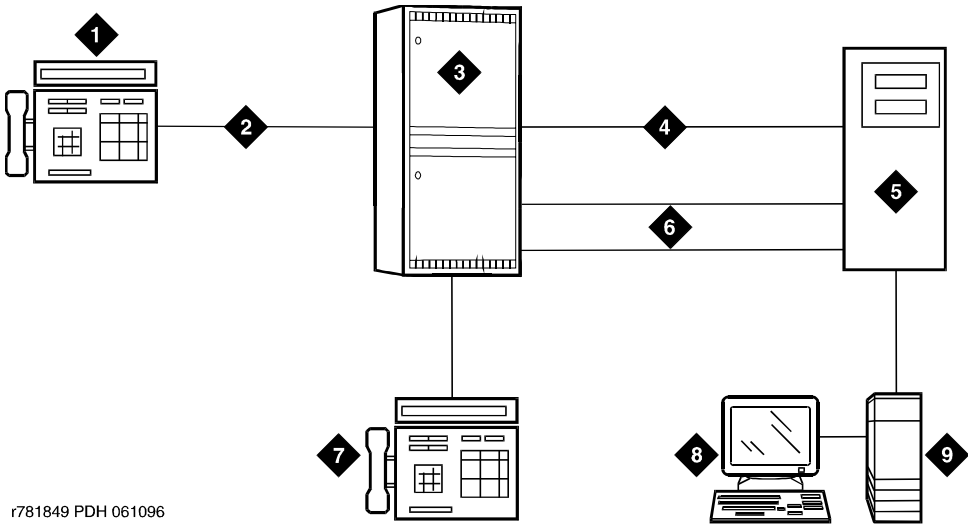



**Figure Notes**

1. Phone
2. ISDN-PRI
3. DEFINITY ECS
4. ASAI
5. Speech processor
6. Tip/ring lines
7. Agent phone
8. Agent data terminal
9. Host

**Figure 3-3. Simplified ICM configuration for speech processor integration**

General processing for this type of application occurs as follows

1. The switch uses CallVisor ASAI link to pass incoming call information to the Conversant voice system.
2. The split/skill on the switch distributes the call to an available voice line.
3. After digits are collected via a DTMF keypad, Conversant transfers the call back to a split/skill or specific agent on the switch via CallVisor ASAI.
4. If the call is transferred to an agent, the switch uses CallVisor ASAI link to pass an event report on which agent receives the call.
5. Conversant forwards the agent ID to the host application, which delivers a data screen to the agent.
6. Agents can display collected digits on their data terminals. Except for the dialed number, information from a Conversant voice system cannot be carried with the call and displayed on a phone. For example, digits collected in a Conversant voice system adjunct cannot be passed to the switch for display.
7. If the collected digits are the extension where the call is being routed, these routing digits are passed to the switch as the destination in the CallVisor ASAI third-party make-call request. Conversant uses the request to set up various types of calls.

## Host/adjunct call routing

The host or Conversant adjunct uses incoming call information to route the call to a split/skill, vector, particular agent, or location off the switch. Conversant can also direct the system to handle the call as a priority call. Routing can be based on the caller's area code or country code, digits collected via Call Prompting, dialed number or service, agent availability, or information in a customer database.

To implement this type of call routing, make sure that calls come into a vector that contains an *adjunct routing* vector command. This command causes the switch to initiate the route CallVisor ASAI capability. Vector processing occurs while the caller waits. A default split/skill or answering position can also be specified in the vector, in case Conversant does not respond in the administered amount of time (determined by the announcement/wait steps). Announcement and wait steps are needed to give the host time to respond.

For adjunct routing, if the call queues to a split/skill or leaves vector processing, a route-end request is sent to Conversant.

## Considerations

Administrators and planners must consider:

- ICM traffic
- Rated switch capacity
- CallVisor ASAI interface traffic
- Rated capacity of the adjunct application processor

Avaya Technical Design Center can provide planning assistance.

In addition, you must consider the following:

- CallVisor ASAI and BX.25 CPN/BN-ANI are not supported simultaneously.
- Direct Agent Calls (DACs) are allowed only if the caller and the receiving agent have a Class of Restriction (COR) that allows Direct Agent Calling.
- DACs cannot go through vectors.
- DACs cannot be made over a DCS link. If the receiving agent is not an internal extension, the call is denied.

## Interactions

- Call Prompting

  Digits collected by Call Prompting are passed with current call information to a Conversant adjunct.

- Direct Agent Calling

  Direct Agent Calling allows an adjunct to direct a call to a particular ACD agent and have the call treated as an ACD call. Calls that enter the switch as ACD calls and are routed to a particular agent via adjunct routing, or are transferred via a third-party make-call request, are treated as ACD calls for the duration of the call. See ‘‘Automatic Call Distribution’’ for more information on Direct Agent Calls.

- Priority Calling

  CallVisor ASAI allows both Priority Calling and Direct Agent Calling for the same call.

# Information Forwarding (Category A only)

Whenever the DEFINITY interflows a call over ISDN trunk facilities (for example, PRI or BRI) by means of a *route-to* (with Look-Ahead Interflow active), *queue-to best***,** or *check best* command, the following information is sent with the call via user-to-user information transport (via UUI IE) and can be used by adjuncts or displayed at the receiving switch:

- ASAI user information
- the name of the active VDN (LAI DNIS)
- other LAI information (a time stamp showing when the call entered the current queue, the call's priority level in its current queue, and the type of interflow)
- any collected digits (this does not include dial-ahead digits). These digits are available for processing at remote vectors and/or displaying to the agent.
- the number of seconds that the call has already spent in vector processing (called "in-VDN time")
- Universal Call ID (UCID)

**NOTE:**
Sending of information depends on priority settings and activated features. Also the switch version must be V6 or later.

Forwarding of the last three items, collected digits, in-VDN time, and UCID applies to the DEFINITY R6.3 and newer.

## Administering User-to-User Information transport

This section outlines the procedure to administer your incoming and outgoing trunk groups to send user data over your network. Before administering the trunk group, review these guidelines:

- If you are using shared UUI (any Supplementary Service other than **b**), then you must administer the `UUI Treatment` for the trunk groups (both outgoing and incoming at the remote end) as **shared**. Use this option when you want to forward information to the DEFINITY R6.3 (or newer) in non-QSIG networks.
- With QSIG (Supplementary Service **b**), you need to administer Shared UUI to include ASAI user information with MSI transport. If `UUI Treatment` is the default **service-provider**, DEFINITY forwards the ASAI user data (if provided) in a non-shared codeset 0 UUI IE while forwarding the other data as MSI.

**NOTE:**
You do not need to complete this procedure if you do not intend to send user data over the network.

Table 3-28 lists the form and fields needed to administer information transport on trunk groups.

**Table 3-28. Required forms**

| Form | Fields | Why is this field needed? | Is field optional? |
|---|---|---|---|
| ISDN Trunk Group (BRI or PRI) | UUI IE Treatment | Set field to either<br>■ **shared** (for trunk groups connected to the DEFINITY ECS R6.3 or newer if you want shared data).<br>■ **service-provider** (for trunk groups connected to the DEFINITY ECS prior to R6.3 or if you want service provider functionality). | Y<br>However, this field cannot be blank. |
| | Maximum Size of UUI IE Contents | Set according to what the network supports. 128 (default) is recommended for private networking. | Y |
| | Shared UUI Feature Priority fields | Set the priority for each type of user data (such as UCID, ASAI, and other application information). Only needed for non-QSIG trunk groups. | Y<br>If blank, info not sent. |

To administer Shared UUI information transport:

1. In the command line, enter **change trunk-group n** and press RETURN**.**

   The Trunk Group administration form comes up. *n* is the number of the trunk group you want to administer.

2. Go to page 2 of the form.

3. In the `UUI Treatment` field, enter **shared** and press RETURN.

   **CAUTION:**
   *If the trunk group is connected to a pre-DEFINITY ECS 6.3 switch or if you want service provider functionality, do not enter* ***shared****. Instead, leave the default* ***service-provider*** *in this field. You cannot use Shared UUI unless the trunk group is connected to a the DEFINITY ECS R6.3 (or newer).*

   The `Maximum Size of UUI IE Contents` field appears.

   If you enter **shared** and the `Send Codeset 6/7 LAI` trunk group option is on, you send the LAI information twice (unless the LAI Name and Other LAI data items' priorities are blank with non-QSIG—with QSIG, both are always sent), and you may exceed the maximum ISDN message size.

4. If you want to change the default size of 128 in the `Maximum Size of UUI IE Contents` field, then enter the number for the maximum UUI size. If you want to keep the default size, go to Step 5.

   You must administer the trunk groups to send the appropriate amount of user information over the connected network. For example, if the public network only supports 32 bytes of user information, and you enter a number larger than 32, the network may reject the entire UUI IE.

   The DEFINITY ECS/switch accepts a range from 32 to 128.

5. Go to page 4 (the Shared UUI Feature Priorities page which comes up only when the `UUI Treatment` field is set to **shared**).

   Notice that all feature names (whether enabled or not) appear on this page. The default values were assigned when Shared UUI was enabled.

6. Either leave the default settings, or reassign numbers from 1 to 6 (1 is the highest priority) to each feature. For more information about user needs, see ''Determining user information needs'' in the next section.

   **NOTE:**
   If you leave a feature field blank, that feature will not transport in the UUI IE. If the public network supports less than 128 bytes, you need to choose what feature information you want to send, and give that feature field a higher priority.

7. Press ENTER to save your changes.

## Detailed description

In the past, look-ahead interflow transported the LAI Information Element (IE) in codeset 6 or 7, which functioned over non-QSIG private networks, but only over certain public networks.

Now, call centers can transport application information (including the LAI information) over many more public ISDN networks because of using User to User Signaling (UUS) Supplementary Services that incorporate user-to-user information (codeset 0 UUI). Information passes over QSIG private networks using manufacturer specific information (MSI—codeset 0 Facility IE) in various messages.

This feature:

- enables multiple applications on the DEFINITY to share the contents of the UUI IE or MSI
- allows for backwards compatibility with software prior to the DEFINITY R6.3.

For more information about how to administer user-to-user information transport, see the Information Forwarding chapter in the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521.

## Support of call center features

Information transport supports these call center features:

- Enhanced Look-Ahead Interflow—routes calls from busy call centers to centers that are less busy (see ‘‘Look-Ahead Interflow (Category A only)’’).

  **NOTE:**
  Look-Ahead Interflow information can be forwarded using information transport or the traditional codeset 6/7 LAI IE. The switch version must be DEFINITY R6 or newer.

- Best Service Routing—routes calls to the best available agents wherever they are (see ‘‘Best Service Routing (Category A only)’’).
- Universal Call ID—provides a means to collect and trace call data from multiple call centers (see ‘‘Universal Call ID’’).

## Determining user information needs

The network byte limit on user information contents (the user data part of the UUI IE) must be large enough to carry the data needed for the customer application.

If you want to forward information over a network that does not support at least 82 bytes of user data, you must determine the space required for the application and adjust priorities accordingly. For more information, see “Determining User Information Needs” in the Information Forwarding chapter of the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521

## Considerations

— Enhanced information forwarding has been tested with several major carriers. To find out if these capabilities work with your carrier, check with your account team for the most current information. If testing has not been done to verify operation over the public networks involved with the preferred specific configuration, use of private ISDN trunking between the nodes should be assumed until successful testing has been completed.

— Any switch that acts as tandem node *must* have priorities assigned to the Shared UUI features for non-QSIG trunk groups. Even if this switch does not create anything, the priorities must be set correctly to pass the information along. For more information, see the ‘‘Troubleshooting’’ section.

— The `Send codeset 6/7 LAI` trunk group option operates independently of the `UUI IE Treatment` trunk group option. However, if you turn both of these options on, you'll send the same information twice and possibly exceed the maximum ISDN message size. The DEFINITY provides a warning message when both options are administered. There are two ways to correct when the user data exceeds the maximum message size, either:

- put a blank in the priority fields for `VDN Name` and `Other LAI Information` on the Shared UUI Feature Priorities form, or
- disable the `Send codeset 6/7 LAI` option.

— For non-QSIG or QSIG trunk groups to the DEFINITY ECS R6.3 (or newer) that require information forwarding, the `UUI IE Treatment` should be **shared** and the `Send Codeset 6/7 LAI IE` should be **n**.

For more information, see the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521.

— Information transported via the Shared UUI is DEFINITY -proprietary; the information will not work with switches other than the DEFINITY unless these switches adhere to the proprietary encoding.

## Troubleshooting

The following troubleshooting hints should be reviewed when information is not forwarded, even though you received no error messages while administering the Shared UUI feature, and all software and connections meet the minimum requirements:

— If DCS is used, make sure *all* ISDN trunks between the DEFINITY used for DCS or remote AUDIX are configured in the D-channel mode.

— For each ISDN trunk administered with the Shared UUI option, make sure the UUI size does not exceed the UUI IE size that the network can support.

— For all non-QSIG ISDN trunks, make sure the `UUI IE Treatment` field is set to **shared**.

— Make sure trunk group options are set correctly for the application and configuration.

— Applications may fail on networks supporting limited UUI transport. Administration determines which application's UUI will be transported in these cases. If a given application is failing, first check the administration to determine if the application in question has the highest priority. This applies to tandem nodes as well as originating nodes.

Applications that originate UUI on tandem nodes can request that assigned priorities at the tandem node be applied to the resulting UUI. Therefore, it is possible for a tandem node to erase UUI information received from the originator.

In other words, passing UUI through a tandem node transparently, as required for UUS Service 1, does not apply to the proprietary shared UUI procedures of the DEFINITY.

## Interactions

- Best Service Routing

  Best Service Routing-related data is sent in addition to the associated ASAI user data and UCID. For more information, see the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521.

# Intraflow and Interflow

Intraflow and Interflow allow you to redirect ACD calls from one split/skill to another split/skill when the splits/skills are not vector-controlled. Intraflow redirects calls to other splits/skills within the system using Call Coverage or Call Forwarding All Calls. Interflow redirects calls to an external split/skill or location using Call Forwarding All Calls.

## Intraflow

Use Call Coverage with Intraflow to redirect ACD calls from one split/skill to another *conditionally*, according to the coverage path's redirection criteria. For example, you can define a split/skill's coverage path to automatically redirect incoming ACD calls to another split/skill when a terminal is busy or unanswered. You can redirect calls to less busy splits/skills, for more efficient call handling.

Use Call Forwarding with Intraflow to *unconditionally* forward calls for a split/skill.

## Interflow

Interflow allows you to redirect ACD calls from a split/skill on one switch to a split/skill on another switch or external location. Use Call Forwarding All Calls with Interflow to *unconditionally* forward calls directed to a split/skill to an off-premises location. Calls can be forwarded to destinations off the switch (that is, phone numbers on the public telephone network). You cannot use Call Coverage with Interflow. If a coverage point station or split/skill is forwarded/interflowed, it is taken out of the coverage path.

For details on how to forward calls to an external extension and on Call Coverage redirection criteria, refer to *DEFINITY ECS Administrator's Guide*, 555-233-506. See ''Call Vectoring'' and ''Look-Ahead Interflow (Category A only)'' for information on advanced Interflow capabilities.

## Administering Intraflow and Interflow

**Table 3-29. Required forms**

| Form | Field |
|---|---|
| Feature-Related System Parameters | ■ Coverage — Don't Answer Interval for Subsequent Redirection |
| Feature Access Code (FAC) | ■ Call Forwarding Activation<br>■ Call Forwarding Deactivation |
| Hunt Group | ■ Inflow Threshold<br>■ Priority on Intraflow |
| Coverage Paths | ■ Don't Answer<br>■ Busy<br>■ Number of Rings |

## Detailed description

Assign an inflow threshold for each split/skill receiving Intraflow and Interflow calls. This threshold prevents a split/skill from receiving new ACD calls if the oldest call in the queue has been there longer than the threshold. If an ACD call is forwarded or redirected through Call Coverage, but cannot be routed to another split/skill or coverage path point, it remains in queue at the original split/skill even though coverage tone may be heard.

For a split/skill with Intraflow and Call Coverage assigned, you can also assign Priority on Intraflow. When an ACD call intraflowing from a split/skill with Priority on Intraflow to a covering split/skill enters the queue, that call is placed ahead of nonpriority calls but behind other priority calls already in the queue. All priority calls are answered before any nonpriority calls.

Calls intraflowed via Call Coverage to a covering split/skill are never connected to the first delay announcement at the covering split/skill. Calls redirected via Call Forwarding receive the delay first announcement at the forwarded-to split/skill, but never receive a forced first announcement.

As an illustration of how Intraflow works, assume the following:

- A call is intraflowed from split 1 to split 2 via Call Coverage.
- Split 1 is assigned priority on intraflow.
- Split 2 has a queue with three priority calls and four nonpriority calls.
- Split 2 has an inflow threshold of 90 seconds and the oldest call in queue at split 2 has been in queue for 60 seconds.

- Split 2 has been assigned a second delay announcement and has a second delay announcement interval of 45 seconds.
- Music-on-Hold is provided.

When the call is intraflowed from split 1 to split 2, the call is placed in the split 2 queue as the fourth priority call, ahead of the four nonpriority calls. The call stays in the queue for 45 seconds and is still not answered. Then the call is connected to the second delay announcement for split 2. After the announcement, the caller hears music until an agent answers the call.

You can assign a Coverage ICI button to an agent's multiappearance phone. The agents use the button to identify a call that is intraflowed from another split/skill. When an agent receives such a call, the button lamp lights.

## Considerations

The same coverage path can be used for as many splits/skills as desired. You should administer redirection criteria for a split/skill coverage path so that calls are redirected under Busy or Don't Answer conditions. Do not use All or Send All Calls as redirection criteria.

## Interactions

- Call Coverage

  All splits/skill with the same coverage path are automatically assigned the same Don't Answer Interval. The default Don't Answer Interval is 2.

  If Intraflow via Coverage is active, the Coverage Don't Answer Interval associated with Call Coverage begins when a call enters the split/skill queue.

  If the Coverage Don't Answer interval expires before either of the two delay-announcement intervals expires, a call is redirected to coverage. If either of the delay-announcement intervals expires before the Coverage Don't Answer interval, the call is connected to a delay announcement, if available.

  If no coverage point is available to handle a call, a call remains in queue and may then be connected to a delay announcement.

- Temporary Bridged Appearance

  If an ACD call is routed to an agent but is intraflowed to another split/skill before being answered, the Temporary Bridged Appearance at the agent's telephone or console is no longer maintained.

## Look-Ahead Interflow (Category A only)

Use Look-Ahead Interflow (LAI) to balance the load of ACD calls across multiple locations. With Look-Ahead Interflow, you can optionally route a call to a backup location based on your system's ability to handle the call within parameters defined in a vector. In turn, the backup system can accept or deny the call also based on parameters defined in a vector.

Look-Ahead Interflow requires end-to-end ISDN connections, and it works over private and public networks.

Look-Ahead Interflow can:

- produce First in First Out (FIFO) or near FIFO call routing
- provide globally-supported information forwarding over public or private ISDN (PRI and BRI) networks using non-QSIG or QSIG protocols. For more information, see ''Information Forwarding (Category A only)''.

**NOTE:**
The rest of this section assumes you will read the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521, for a detailed description of Look-Ahead Interflow and its uses. The guide contains information that is critical to the effective and efficient use of this feature.

## Administering LAI

**Table 3-30. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ Vectoring (Basic)<br>■ ISDN-PRI<br>■ Lookahead Interflow |
| Trunk Group (ISDN) | ■ Outgoing Display<br>■ Codeset to Send TCM, Lookahead<br>■ Supplementary Service Protocol<br>■ UUI Treatment |
| Feature-Related System Parameters | ■ Interflow-Qpos EWT Threshold |
| ISDN Numbering - Public/Unknown | ■ Ext Len<br>■ Ext Code<br>■ CPN Prefix |
| Call Vector | ■ Complete a form for each Look-Ahead Interflow vector |

See ‘‘Call Vectoring’’ for associated Call Vectoring administration.

- System-Parameters Customer-Options — For full functionality, options must be enabled at both the sending and receiving switches. If Look-Ahead Interflow is not optioned on the receiving switch, interflow still results on a look-ahead basis. However, the forwarded Dialed Number Identification Service (DNIS) (sending switch VDN name) information is ignored and tandem Look-Ahead Interflow is not provided.
- Trunk Group Form (ISDN) — If you do not want the call originator’s display to update on each Look-Ahead Interflow call attempt, look-ahead calls should be routed over trunk groups with the `Outgoing Display` field set to **n**.
- Feature-Related System Parameters Form — Administer the `Interflow-Qpos EWT Threshold` field when working with enhanced Look-Ahead Interflow. Any calls that will be answered before this threshold will not be interflowed (therefore saving CPU resources).
- ISDN Numbering - Public/Unknown Form — Administer a CPN Prefix for each Vector Directory Number (VDN) that maps to a vector used to place Look-Ahead Interflow calls. If you do not, a Look-Ahead Interflow DNIS of all blanks displays on the answering agent’s phone.

For private network non-QSIG connectivity with direct facilities between the DEFINITY, administer Look-Ahead Interflow DS1/E1 circuit packs with Country Protocol Option 1 independent of the country where the system is located.

## Considerations

- LAI has been tested with several major carriers. To find out if these capabilities work with your carrier, check with your account team for the most current information. If testing has not been done to verify operation over the public networks involved with the preferred specific configuration, use of private ISDN trunking between the nodes should be assumed until successful testing has been completed.
- All calls routed over ISDN facilities by a **route-to number with cov n** or **route-to digits with cov n** vector command on a switch where Look-Ahead Interflow is enabled are treated as Look-Ahead Interflow call attempts.

  A vector may route a call over an ISDN facility to a destination that is not a VDN. The sending switch processes this call as a Look-Ahead Interflow call even though it is not. ISDN processing at the receiving switch causes the call to always be accepted. However, the DNIS and any other information in the Look-Ahead Interflow information forwarded with the call are ignored.
- Until the look-ahead attempt is accepted by the receiving switch, the caller continues to hear any feedback applied by the sending switch vector and will remain in any split/skill queues.
- **Route-to number with coverage y** or **route-to digits with coverage y** commands never result in a Look-Ahead Interflow call attempt. The sending end assumes the call is always going to be accepted. This command always completes the call. Moreover, the command should not be used if the vector at the receiving switch might deny the call, since the caller in this case would be given a busy signal or would be disconnected. Use this command with coverage y only when you want unconditional interflow (with Look-Ahead Interflow active) and the terminating switch is set up accordingly.
- Audible feedback may be provided to the caller before interflow is attempted. Therefore, another audible feedback from the receiving switch may confuse the caller. For example, a caller hearing ringback on the sending switch may be confused if music is applied suddenly when the call interflows to the receiving switch.
- For backward compatibility of LAI applications between the DEFINITY ECS R6.3 and older DEFINITY switches, leave the “Send Codeset 6/7 LAI IE” option on the Trunk Group form set to its default **y**. Existing LAI applications will continue to operate as before, even after you upgrade.

  You can use enhanced LAI available in the DEFINITY ECS R6.3 (and newer), without any network or trunk administration changes, by adding the *interflow-qpos* conditional to original LAI vectors (the conditional applies only to calls in queue). The DEFINITY G3V4 does not have to have R6.3 (and newer) software to receive LAI calls from another DEFINITY G3V4 with the R6.3 software. However, if both the local and remote switches in LAI applications are upgraded to the DEFINITY ECS R6.3 (and newer), Enhanced Information Forwarding and Best Service Routing capabilities can also be used. However, the *interflow-qpos* conditional is not necessary for enhanced information forwarding.

## Interactions

- AAR/ARS

  ISDN facilities used to provide Look-Ahead Interflow to a VDN on another switch in a private network can use the AAR feature if private facilities are to be used for call routing.

- Agent Telephone Display

  If collected digits are forwarded with an interflowed call, the forwarded digits are displayed to the answering agent (unless they're overridden with newly collected digits) on the telephone display.

- Attendant Control of Trunk Group Access

  Calls will not route over a trunk with Attendant Control of Trunk Group Access set.

- Authorization Codes

  Authorization Codes must not be required for interflow routing. Assign a high enough FRL to the VDN so that the route desired for routing interflow calls can be used without requiring an Authorization Code entry. If a route choice is encountered that requires a higher FRL, the interflow is considered an invalid destination (rejected for Look-Ahead Interflow or not available for standard interflow) without the application of recall dial tone.

- BCMS

  BCMS does not log LAI attempts, nor does it report accumulated in-VDN time.

- Call Detail Recording — Sending Switch

  No Ineffective Call Attempt or Outgoing Call CDR records are generated for vector *route-to* commands that are unsuccessful including denied Look-Ahead Interflow attempts.

  If a local (on-switch) call to a VDN generates a Look-Ahead Interflow call attempt that is accepted, and answer supervision is returned from the receiving switch, then one Outgoing Call CDR record is generated with the originating extension as the calling number.

  If an incoming (off-switch) call to a VDN generates a Look-Ahead Interflow call attempt that is accepted, and no answer supervision is returned from the receiving switch, then one incoming CDR record is generated. The VDN is the called number, and the duration is from the time answer supervision was provided to the incoming trunk.

  If an incoming (off-switch) call to a VDN generates a Look-Ahead Interflow call attempt that is accepted, and answer supervision is returned from the receiving switch, then two incoming CDR records are generated:

  — An incoming record with the VDN as the called number and the duration as the time since answer supervision was provided to the incoming trunk. This is generated if the call is initially answered in the sending switch before interflow takes place.

— An outgoing record containing the incoming trunk information as the calling number and the dialed digits and the outgoing trunk information as the called number.

- Call Detail Recording — Receiving Switch

  On the receiving switch, an incoming Look-Ahead Interflow call is treated like any other incoming vector call.

  If answer supervision is returned by the vector, and the call is never terminated to another destination, then the VDN extension is recorded as the called number in the CDR record.

  If the call terminates to a hunt group, then the VDN, hunt group, or agent extension is recorded as the called number. If the `Record VDN in Record` field of the Feature Related System Parameters is **y**, then the VDN extension overrides the `Call to Hunt Group - Record` administration option for vector calls.

- Call Prompting

  Digits collected at the sending switch, no matter how they are collected (caller-entered, ASAI provided, CINFO provided, etc.) are forwarded with interflowed calls and available at the remote switch via information forwarding. For more information, see ‘‘Information Forwarding (Category A only)’’.

  **NOTE:**
  Dial-ahead digits are not forwarded with the call. There is a maximum of 16 forwarded digits.

- Centralized Attendant Service

  A centralized attendant can be a Look-Ahead Interflow destination.

- Display - 27 Character

  The VDN name (part of the LAI information forwarded with calls) can be up to 15 characters long. Any characters over this limit will be dropped.

- Distributed Networking - Manufacturers Specific Information (MSI)

  LAI (whether enhanced or not) may not function with systems from other vendors (unless that vendor develops a corresponding capability that works with the DEFINITY).

- Facilities Restriction Level and Traveling Class Marks

  The FRL for interflow over ARS/AAR route choices is assigned to the original VDN used for the incoming call.

- Incoming Call Management

  The adjunct routing capabilities of vectoring can be used at the sending switch to determine if a call should be interflowed. Adjunct routing at the receiving switch can be used to tandem the call to a far-end switch.

If the call terminates to a trunk (tandem), then two CDR records are generated:

— An incoming record with the VDN as the called number and the duration as the time since answer supervision was provided to the incoming trunk.

— An outgoing record containing the incoming trunk information as the calling number and the dialed digits and the outgoing trunk information as the called number.

- Network Access

  LAI operates over public, private, or virtual private (for example, SDN) ISDN-BRI and -PRI networks that meet minimum network requirements.

  The sending of a Look-Ahead Interflow codeset 6/7 information element is counted toward Message Associated User-to-User Information (MA-UUI) counts.

- Path Replacement for QSIG/DCS ISDN Calls

  Path replacement, using QSIG, for calls in queue and vector processing is available with DEFINITY R9.5 and newer releases. For calls that are waiting in queue or in vector processing, even if the call is not connected to an answering user, path replacement can be attempted to find a more optimal path for this call. This results in more efficient use of the trunk facilities.

  For the DEFINITY R9.5 and newer releases, the QSIG ISDN or DCS ISDN trunk path-replacement operation can be triggered for ACD calls by the Look-Ahead Interflow *route-to number* vector step, BSR *queue-to best* vector step, and the Adjunct Routing vector steps.

  See the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521, for additional information on path replacement.

- QSIG

  LAI and information forwarding function over QSIG trunk facilities if the remote locations are the DEFINITY systems. You may get LAI call control functionality with other vendors if the DEFINITY is the starting point.

- Redirect on No Answer (RONA)

  Calls redirected to a VDN by RONA can be subsequently processed and routed by LAI applications.

- Service Observing

  You can observe a call in LAI processing via VDN observing throughout the life of the call (as long as the call is still connected through the local DEFINITY). All current restrictions on Service Observing still apply. Incoming calls can be service observed at the remote switch.

- Trunk-to-Trunk Transfer

  Interflowed calls may be transferred by a receiving switch to another trunk connection.

- VDN Override

  The name of the active VDN for a call is displayed at the remote answering agent.

# Multiple Call Handling

Multiple Call Handling (MCH) allows agents to receive an ACD call while other types of calls are alerting, active, or on hold.

**NOTE:**
MCH Forced is available only with Category A only.

## Administering MCH

**Table 3-31. Required forms**

| Form | Field |
|---|---|
| Hunt Group | ■ ACD<br>■ Multiple Call Handling |

The MCH column on the List Hunt Group form contains the value that you enter in Multiple Call Handling.

## Detailed description

### Applications

Use Multiple Call Handling in applications where you want agents to take additional calls without dropping the active call. Examples of applications include:

- An agent and a caller may need to wait on a call for information. MCH allows the agent to put the call on hold and handle other ACD calls until information is available.
- ACD calls may be more important to your business than non-ACD calls. Use MCH to interrupt agents on non-ACD calls with an ACD call.
- In an EAS environment, calls from one skill may be more important than calls from another skill. Use MCH to interrupt an agent who has a call from the less-important skill with a call from the more-important skill.

You can use MCH in an Expert Agent Selection (EAS) or non-EAS environment.

- With EAS, you can administer any combination of MCH and non-MCH skills for an agent. If an EAS agent is a member of both MCH and non-MCH skills, he or she can handle multiple simultaneous ACD or Direct Agent Calls only in the MCH skills.
- Without EAS, agents can be logged into only one split if it is an MCH split. Similarly, am agent logged in to a non-MCH split cannot log into an MCH split.

## MCH settings

### On request

In on-request splits/skills, the following is true.

- If an agent goes into Auto-In or Manual-In work mode, but there are no calls in the queue, the agent is placed at the bottom of the MIA queue or at the bottom of their skill level in the EAD queue, or is made available in the DDC queue.
- Agents must select Auto-In or Manual-In work mode for each new ACD call they take while a call is on hold.
- The agent can take additional ACD calls as long as there is an available line appearance.

Use on-request MCH in conjunction with a feature such as VuStats, which agents can use to see when the queue is getting full and take additional calls.

### One forced (Category A only)

An agent who is idle or active on a non-ACD call is automatically interrupted with an ACD call from this split/skill when no other ACD call for any of the agent's splits/skills are alerting, active, or held. In addition, the following must also be true:

- The agent is in Manual-In or Auto-In work mode.
- The agent is the most idle or next available.
- An unrestricted line appearance is available.
- AUX work or Move from CMS are not pending.

As long as an ACD call is active or held, the agent does not automatically receive an additional call from the one-forced split/skill. An agent in a one-forced split/skill in Auto-In or Manual-In work mode is unavailable for that split/skill from the time that an ACD call rings until all ACD calls are abandoned, redirected, or dropped. However, the agent can request another ACD call from a one-forced split/skill by placing the active call on hold and selecting Manual-In or Auto-In work mode.

If an agent with multiple skills is active on an ACD call for a group with one-forced MCH, the agent could be forced to take an ACD call for one of his or her other skills, depending on that skill's MCH settings.

Because one-forced MCH forces an ACD call to alert an agent who is not on an ACD call, use it when you want ACD calls to take precedence over other calls.

### One per skill (Category A only)

You must have EAS to use one-per-skill MCH. An agent with no ACD calls for this skill is automatically interrupted with a single ACD call from this skill under the same conditions listed for one-forced.

If a one-per-skill call is active or held, the agent does not automatically receive additional calls from that skill. However, the agent can request another ACD call from a one-per-skill in the usual way.

If an agent with multiple skills is active on an ACD call for a one-per-skill group, the agent could be forced an ACD call for one of his or her other skills if those skills are many-forced or one-per-skill MCH.

Use one-per-skill MCH when calls from one skill are higher priority than other ACD calls.

### Many forced (Category A only)

Agents are automatically interrupted with an ACD call under the same conditions listed for one-forced. As soon as an agent answers an alerting ACD call, the agent immediately becomes available to receive another ACD call from a many-forced split/skill.

Agents in many-forced groups in Auto-In or Manual-In work mode are unavailable only when an ACD call is ringing.

Use many-forced MCH when agents must answer important or urgent calls, even when they must put equally important calls on hold. It can also be used to force Direct Agent calls to an agent.

## MCH example

In this example, an agent is logged into 4 skills, each with a different MCH option. Table 3-32 shows how calls are delivered when an unrestricted-line appearance is available and the agent is in Auto-In or Manual-In work mode (AUX work mode is not pending).

**Table 3-32. MCH call delivery example**

| | Calls Delivered? | | | |
|---|---|---|---|---|
| **Condition** | **Skill 1 (MCH=on-request)** | **Skill 2 (MCH=one-forced)** | **Skill 3 (MCH=one-per-skill)** | **Skill 4 (MCH=many-forced)** |
| No calls on set | yes | yes | yes | yes |
| One active extn call | no | yes | yes | yes |
| Skill 1 call active | no | yes | yes | yes |
| Skill 2 or 4 call active | no | no | yes | yes |

*Continued on next page*

**Table 3-32. MCH call delivery example (Continued)**

| | | | | |
|---|---|---|---|---|
| Skill 3 call active | no | no | no | yes |
| Extn call held, no other action | no | yes | yes | yes |
| Skill 1, 2, or 4 call held, no other action | no | no | yes | yes |
| Skill 3 call held, no other action | no | no | no | yes |
| Extn call held, then AI/MI selected | yes | yes | yes | yes |
| Skill 1,2,3, or 4 call held, then AI/MI selected | yes | yes | yes | yes |

Agents and supervisors in on-request MCH splits/skills can use Queue Status, VuStats, and BCMS/CMS reports to determine if a waiting call must be answered immediately.

## Considerations

- Agents can receive multiple calls only when in Auto-In or Manual-In work mode. All forced MCH calls are delivered with ringing at the agent's station, not with zip tone. Requested MCH calls are delivered with ringing or zip tone.
- Agents can toggle between Auto-In and Manual-In work mode.
- If an agent selects ACW or AUX work mode with calls on hold, the work mode is pending until all calls complete or until an Manual-In call completes. New ACD calls are not delivered when AUX work is pending. When an ACD or Direct Agent call with pending ACW completes, the agent enters ACW. When an agent is active on a non-ACD call with ACW pending, the agent can receive forced MCH calls.
- If an agent is either in Auto-In work mode and active on an ACD or Direct Agent call, or in Auto-In or Manual-In work mode and active on a non-ACD call and a Manual-In ACD or Direct Agent call abandons from hold, the agent is pending for ACW work mode and the after-call button lamp flashes.
- If an agent reconnects to an ACD or Direct Agent call on hold, his or her work mode changes to the call's work mode (Auto-In or Manual-In).
- Do not use forced MCH with DDC distribution because the first agent continues to receive calls until all line appearances are busy.

## Interactions

- Automatic Hold

  To answer a ringing ACD call, an agent in a many-forced, one-forced, or one-per-skill split/skill pushes the line-appearance button. If automatic hold is administered, the active call is automatically placed on hold. Otherwise, the agent must first push hold.

- Call Work Codes and Stroke Counts

  Agents handle multiple ACD calls simultaneously with MCH can enter CWCs and Stroke Counts. When an agent does so with multiple calls on the station, the code/count is associated with the last call the agent handled. If an agent enters a code/count during an active call with calls on hold, the code/count is associated with the active call.

  If an agent with on-request MCH is active on a call that requires forced entry of CWC or stroke counts and places the call on hold without entering a code/count, he or she cannot request another call.

  If agents with many-forced MCH are in a split/skill with forced entry of CWC or stroke counts, they are forced to handle an ACD call even if they have not entered a code/count.

- Direct Agent Calling

  Agents can handle multiple Direct Agent calls if their direct agent skills have MCH. The queue-status indicator is not lit when a Direct Agent call queues to a split/skill. Agents are notified that calls are waiting with a ring ping and a flashing current-work-mode lamp.

- Move Agent While Staffed

  An agent with a move pending can place a call on hold and request another ACD call. All calls and ACW must complete before the pending move occurs.

- Non-ACD calls

  If an agent activates Auto-In or Manual-In work mode with calls on hold, he or she can answer or originate a non-ACD call. With on-request MCH, the agent is temporarily unavailable for ACD or Direct Agent calls. With forced MCH, a call can be delivered. If an agent in ACW reconnects to an AUXIN/AUXOUT call, the agent remains in ACW.

- Queueing

  When an agent is available, the agent is placed at the end of the queue for Uniform Call Distribution (UCD) hunt groups or at the bottom of the skill type for Expert Agent Distribution (EAD) hunt groups, or is made available for Direct Department Calling (DDC) hunt groups. When the agent becomes the most available according to group type (UCD, EAD, or DDC), he or she receives a queued ACD or Direct Agent call.

  If the last agent on a forced MCH split/skill is pending for AUX work mode in a nonvector-controlled split, the agent must empty the queue before going to AUX work mode. The agent continues receiving ACD calls until the queue is emptied.

- Redirection on No Answer

  If an agent has a call active or on hold and the RONA timer expires for another ringing ACD call, RONA redirects the alerting call back to the split/skill or administered VDN. The agent is not taken out of service when the call redirects, but is placed at the bottom of the Most Idle Agent (MIA) or Expert Agent Distribution (EAD) queue.

- Restricted line appearance

  If you administer last-available line appearance as Restricted Last Appearance for an agent's telephone, the agent does not receive additional ACD calls because the appearance is reserved for making conference or transfer calls.

## Network Call Redirection (NCR) (Category A only)

Network Call Redirection is a DEFINITY ECS feature available starting with Release 8.3. Full administration support of the feature is provided with the DEFINITY ECS R8.3 SAT. In addition, *route-to-number* support for *~r* vector administration is available with CentreVu CMS R3V9 and CentreVu Visual Vectors Version 9.0. CentreVu CMS R3V6 or newer administration support for BSR will support NCR. NCR is not supported on Category B switches.

NCR may only be activated for incoming ISDN trunk calls where the associated trunk group has been enabled by the public network service provider to use Network Call Transfer or Network Call Deflection features. Because some public network service providers do not support forwarding of User-to-User Information (UUI), Information Forwarding data is lost and the second leg of the redirected call will look like an entirely new call to the DEFINITY to which the call is redirected.

NCR uses the DEFINITY Best Service Routing feature's *queue-to-best* vector step, which is the recommended approach for implementation.

**NOTE:**
Network Call Transfer (NCT) currently works with only the MCI® DMS250 network switches. NCT is not currently offered on MCI DEX600 switches.

NCT on the MCI DMS250 switch requires that the second leg of the call must be answered before NCT can be invoked.

Until NCR has been tested on specific PSTNs, performance is not guaranteed. To verify operability, contact your CRM Regional Offer Manager.

See the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521, for additional information on setting up vectors for NCR.

## Administering NCR

This section describes how NCR is administered on the DEFINITY.

The following fields must be set on the DEFINITY administration forms for NCR to work:

**Table 3-33. Required forms**

| Form | Field | Value |
|---|---|---|
| **For both NCT and NCD. . .** | | |
| System Parameters Customer Options | Call Center Release | 8.3 or later |
| System Parameters Customer Options | ISDN Network Call Redirection | Y |
| Best Service Routing Application form (for the location to receive the call) | Net Redir? | Y |
| **For NCT. . .** | | |
| Trunk Group form | ■ Group Type | isdn |
| | ■ Supplementary Services Protocol | g |
| | ■ Network Call Redirection | Nortel-transfer (for MCI DMS250 switches) or ANSI-transfer (for MCI DEX600 switches) |
| Signaling Group form | Network Call Transfer | Y |
| **For NCD. . .** | | |
| Trunk Group Form | ■ Group Type | isdn |
| | ■ Supplementary Services Protocol | c |
| | ■ Network Call Redirection | deflect |
| Signaling Group Form | Network Call Transfer | N |
| **For non-BSR applications or for standard or enhanced Look-Ahead Interflow applications replaced by NCR supplementing BSR applications. . .** | | |
| Call Vector form | leftmost position in the `route-to number` vector step | ~r for each vector that will invoke NCR. |

The ~r command takes up two digit positions in the vector step. This works with *queue-to-best* or *check-best* vector steps. No change to the vector steps is required for NCR with BSR.

## Trunk Group form

For Network Call Transfer, the `Group Type` field on the Trunk Group form must be set to `isdn` and the `Network Call Redirection` field must be set to `transfer`. The `Supplementary Service Protocol` field must be set to `g` and the `Network Call Redirection` field must be set to `Nortel-transfer` for MCI DMS250 switches or `ANSI-transfer` for MCI DEX600 switches. If the NCT feature is subscribed to for the DEFINITY NCR feature, only PRI ISDN 2-way trunks may be used for the incoming-call trunk groups to be administered for vectoring activation of NCT, since the software selects a trunk from the same trunk group to set up the second leg call. Refer to the following figures:

```
change trunk-group 29                                          Page   1 of  23
                              TRUNK GROUP

Group Number: 29                   Group Type: isdn          CDR Reports: y
  Group Name: MCI-1                       COR: 1        TN: 1        TAC: 729
   Direction: two-way        Outgoing Display? y
 Dial Access? n                Busy Threshold: 255         Night Service:
Queue Length: 0
Service Type: sdn                   Auth Code? n            TestCall ITC: rest
                        Far End Test Line No:
TestCall BCC: 4
TRUNK PARAMETERS
         Codeset to Send Display: 7     Codeset to Send National IEs: 7
        Max Message Size to Send: 260   Charge Advice: none
  Supplementary Service Protocol: g     Digit Handling (in/out): enbloc/enbloc

            Trunk Hunt: descend
                                                  Digital Loss Group: 13
Calling Number - Delete:     Insert:                Numbering Format:
              Bit Rate: 1200         Synchronization: async    Duplex: full
 Disconnect Supervision - In? y  Out? y
 Answer Supervision Timeout: 0
```

**Screen 3-1. Supplementary Service Protocol: NCT**

```
change trunk-group 29                                          Page   2 of  23
                                TRUNK FEATURES
          ACA Assignment? n            Measured: both      Wideband Support? n
                                                          Maintenance Tests? y
                               Data Restriction? n     NCA-TSC Trunk Member:
                                      Send Name: n      Send Calling Number: n
            Used for DCS? n
   Suppress # Outpulsing? n
 Outgoing Channel ID Encoding: preferred     UUI IE Treatment: shared
                                           Maximum Size of UUI IE Contents: 128
                                                Replace Restricted Numbers? n
                                               Replace Unavailable Numbers? n
                                                     Send Connected Number: n

Network Call Redirection: Nortel-transfer
               Send UCID? y               BSR Reply-best DISC Cause Value: 31
 Send Codeset 6/7 LAI IE? n



                            Network (Japan) Needs Connect Before Disconnect? N
```

**Screen 3-2. Network Call Redirection: NCT**

For NCD, the `Supplementary Service Protocol` field must be set to **c** and the `Network Call Redirection` field must be set to **deflect**. Refer to the following figures:

```
change trunk-group 30                                          Page   1 of  23
                                TRUNK GROUP

Group Number: 30                    Group Type: isdn          CDR Reports: y
  Group Name: BT-1                       COR: 1        TN: 1        TAC: 729
   Direction: two-way        Outgoing Display? y
 Dial Access? n                Busy Threshold: 255         Night Service:
Queue Length: 0
Service Type: sdn                    Auth Code? n            TestCall ITC: rest
                         Far End Test Line No:
TestCall BCC: 4
TRUNK PARAMETERS
         Codeset to Send Display: 7     Codeset to Send National IEs: 7
        Max Message Size to Send: 260   Charge Advice: none
  Supplementary Service Protocol: c     Digit Handling (in/out): enbloc/enbloc

            Trunk Hunt: descend
                                                    Digital Loss Group: 13
Calling Number - Delete:     Insert:                  Numbering Format:
              Bit Rate: 1200         Synchronization: async    Duplex: full
 Disconnect Supervision - In? y  Out? y
 Answer Supervision Timeout: 0
```

**Screen 3-3. Supplementary Service Protocol: NCD**

```
change trunk-group 30                                          Page   2 of  23
                                  TRUNK FEATURES
          ACA Assignment? n            Measured: both      Wideband Support? n
                                                          Maintenance Tests? y
                               Data Restriction? n     NCA-TSC Trunk Member:
                                     Send Name: n      Send Calling Number: n
            Used for DCS? n
   Suppress # Outpulsing? n
 Outgoing Channel ID Encoding: preferred     UUI IE Treatment: shared
                                          Maximum Size of UUI IE Contents: 128
                                               Replace Restricted Numbers? n
                                             Replace Unavailable Numbers? n
                                                   Send Connected Number: n

Network Call Redirection: deflect
               Send UCID? y                BSR Reply-best DISC Cause Value: 31
 Send Codeset 6/7 LAI IE? n



                            Network (Japan) Needs Connect Before Disconnect? N
```

**Screen 3-4. Network Call Transfer: NCD**

NCT invocation using Call Vectoring requires that the trunk group used for the incoming calls be two-way since the second outgoing call will be placed over an idle trunk in the same trunk group used by the incoming call.

To increase the chance that there will be a trunk available to place the second leg call, some trunks in the two-way trunk group can be reserved for outgoing-only use by using Call-by-Call Service Selection Usage Allocation capabilities.

1. On the ISDN Trunk Group form, set the following fields:
   - `Direction` = **two-way**
   - `Service Type` = **cbc**
   - `Usage Alloc` = **y**
   - `Disconnect Supervision In?` = **y**
   - `Disconnect Supervision Out?` = **y**
2. Assign the incoming call Network Specific service (NSF) types on the ISDN Trunk Group form CBC Trunk Group Usage Allocation page to limit how many trunks can be used for incoming calls. For example, if all incoming calls are “mega800” and two trunks out of a total of 100 are to be reserved, set the `Service` field to **mega800** and set the `Min# Chan` field to **2** and the `Max#`

Chan field to **98**. If the incoming calls are receive with two different NSF types, for example, “sdn” and “mega800”, then assign both for the same Min# and Max# values. Refer to the following figure.

```
change trunk-group 29                          Page   6 of   25
                              CBC TRUNK GROUP ALLOCATION

Usage Allocation Plan 1   Usage Allocation Plan 2   Usage Allocation Plan 3

                 Min# Max#                 Min# Max#                 Min# Max#
Service/Feature  Chan Chan Service/Feature  Chan Chan Service/Feature  Chan Chan
 mega800           2    98
 sdn               2    98
```

**Screen 3-5. CBC Trunk Group Allocation**

**NOTE:**
The NSF coding for MCI WorldCom VNET service is defined as “sdn” on the DEFINITY. The MCI 800 service is defined as “mega800” on the DEFINITY.

## Signaling Group form

For NCT, the Network Call Transfer field on the Signaling Group form must be set to **y**. Refer to the following figure:

```
change signaling-group 4                          Page   1 of   5
                                SIGNALING GROUP

 Group Number: 4
                Associated Signaling? y          Max number of NCA TSC: 0
                   Primary D-Channel: 01B1024     Max number of CA TSC: 0
                                                 Trunk Group for NCA TSC:
   Trunk Group for Channel Selection:
      Supplementary Service Protocol: a          Network Call Transfer? y
```

**Screen 3-6. Signaling Group form: NCT**

For NCD, the `Network Call Transfer` field on the Signaling Group form must be set to **n**. Refer to the following figure:

```
change signaling-group 4                              Page   1 of   5
                              SIGNALING GROUP

Group Number: 4
               Associated Signaling? y          Max number of NCA TSC: 0
                  Primary D-Channel: 01B1024     Max number of CA TSC: 0
                                                Trunk Group for NCA TSC:
  Trunk Group for Channel Selection:
     Supplementary Service Protocol: a          Network Call Transfer? n
```

**Screen 3-7. Signaling Group form: NCD**

## Call Vector form

For non-BSR applications or for standard or enhanced Look-Ahead Interflow applications replaced by NCR, supplementing BSR applications, on the DEFINITY Call Vector form, the leftmost two character positions (before the number) in the `route-to` vector step (vector step 2 in the example on the next page) must be set to `~r` to invoke NCR.

**CAUTION:**
*The number administered in the ~r vector step on the Call Vector form should not have any ARS prefix or trunk access code. Refer to the following figure.*

```
change vector 37                                                 page 1 of 3
                                   CALL VECTOR

          Number: 37                   Name: Reroute using NCR Feature
     Multimedia? n     Attendant Vectoring? n                            Lock? n
          Basic? y   EAS? y  G3V4 Enhanced? y  ANI/II-Digits? y  ASAI Routing? y
      Prompting? y  LAI? y  G3V4 Adv Route: y    CINFO? n     BSR? y Holidays? n

01 wait       0    secs hearing ringback
02 route-to   number ~r3035385103
03 ___________
04 ___________
05 ___________
06 ___________
07 ___________
08 ___________
09 ___________
10 ___________
11 ___________
```

**Screen 3-8. Call Vector form with ~r vector step in NCR**

## Best Service Routing Application form

On the DEFINITY Best Service Routing Application form, the `Net Redir?` field must be set to **y** for each location to which calls are to be directed using NCR. Refer to the following figure.

**CAUTION:**
*The number administered in the interflow VDN field on the Best Service Routing form (or in the ~r vector step on the Call Vector form) should not have any ARS prefix or trunk access code. Some PSTN numbers will need to include the long-distance access code. Contact your PSTN for specific information.*

```
                    BEST SERVICE ROUTING APPLICATION PLAN

Number: 1     Name: ARS              Maximum Suppression Time: 30    Lock? N

Num  Location Name   Switch Node   Status Poll VDN   Interflow VDN   Net Redir?
1                                  95022011          3035389425          y
2                                  95022111          3038053652          y
3                                  95032211          95032221            n
```

**Screen 3-9. BSR Application form with NCR in use**

## Administration for support of AT&T In-band Transfer and Connect

For transfer and connect data forwarding support, the ISDN NCR customer options must be active. Only some of the trunk administration for NCR should be assigned, as compared with NCT or NCD administration. Complete the following fields on the DEFINITY forms that are specified.

**Table 3-34. Required forms**

| Form | Field | Value |
|---|---|---|
| **For support of AT&T In-band Transfer and Connect. . .** | | |
| Signaling Group | NCR | Y |
| Trunk Group | ■ Supplementary Services Protocol | a (National Public Network - AT&T) |
| | ■ Network Call Redirection | none |
| | ■ DS1 country protocol | 1a |
| | ■ UUI IE Treatment | service provider (if only the ASSAI user data without the shared OP code-length header is to be included in the IE<br><br>shared (if all of the Information Forwarding user data that is associated with the incoming call is to be included with shared headers) |
| | ■ Send UCID | Y (with UCID active for the system and if UCID data is to be included in the shared UUI IE) |
| | ■ CBC Usage Allocation | not required. The trunk group does not have to be two-way as a second call is not generated by the DEFINITY with Transfer and Connect. |

## Detailed description

Call redirection using NCR is accomplished by using either the public network's NCD or NCT options. NCD "clear call upon invocation" is only offered outside of the United States. In the United States, only NCT is offered. In the future, the NCD "retain call until alerting/connect" option may be provided by public networks outside of the United States, but it is not currently available. NCR supports Information Forwarding via UUI transport to the redirected-to location.

## Network Call Transfer

NCT occurs after the incoming call is initially answered. With NCT, the DEFINITY is required to set up the second leg of the call and then wait for the second site to acknowledge before requesting the PSTN to transfer the first leg of the call to the second leg, and before the PSTN drops the trunks to the DEFINITY. The benefit is that the DEFINITY retains control over the call and can redirect the call using the trunk-to-trunk method should the NCT invocation fail. Therefore, the NCT option is the most reliable.

After the second leg of the call is initiated and acknowledged by the public switch, the public network joins the original ISDN caller to the redirected-to endpoint and then drops both the original ISDN call and the second leg of the call at the redirecting DEFINITY ECS.

## Network Call Deflection

NCD occurs before the incoming call is initially answered. With NCD, the public network sets up the second leg of the call to the redirected-to location when the DEFINITY deflects the call. There are two PSTN options for NCD, per the ETSI standards: "retain call until alerting/connect" and "clear call upon invocation." This is commonly referred to as a partial call reroute.

With the "clear call on invocation," which is the only NCD operation currently available, the DEFINITY loses control of the call once the call has been transferred to the public network for redirection. The DEFINITY does not retain control of the call until it has been acknowledged by the network, so there is no alternative transfer possible if the public switch cannot transfer the call to the second location.

The “retain call until alerting/connect” option is not widely available (no known PTSN offers it at this time). With this option, the PSTN sets up the second leg of the call and waits until an alerting message is received before the first leg of the call is dropped. In this case, if the second leg of the call fails, then the DEFINITY can redirect the call through another method (such as trunk-to-trunk connection) and not lose the call.

**NOTE:**
There may be limits placed on the number of times a call may be redirected over the public network. These limits are imposed by the public network service provider. For example, in the United States, MCI currently allows only one redirection per call. In the United Kingdom, there is a limit of 20 call deflections per call. In addition, there may be additional charges associated with redirected calls.

Additionally, some public network service providers do not support forwarding of User-to-User Information (UUI), including ASAI User data, collected digits, VDN name, the VDN in-time (as reflected by the NETINTIME database items), and the UCID. This means that Information Forwarding will be lost and the second leg of the redirected call will look like an entirely new call to the redirected-to DEFINITY at the second location. One of the data items lost is the VDN name, which is rerouted to the originally called service (DNIS) information. The indication that the call has been forwarded can be achieved by using dedicated VDNs for call forwarding, but it does reduce the benefits of Information Forwarding inherent with NCR. Also, this option limits CTI applications as there is no ASAI information or UCID forwarded.

**NOTE:**
At this time, no PSTNs are offering the Network Call Deflection “retain call until alerting/connect” operation. Therefore, only the Network Call Deflection “clear call upon invocation” offer is available from PSTNs. Both methods are described in this document. It is advised that you negotiate with your PSTN as the NCR feature will work on either platform. NCR is limited by which PSTN platform is available to you.

## Information Forwarding support for AT&T In-band Transfer and Connect

Enabling NCR also provides Information Forwarding support for the AT&T Transfer and Connect In-band network service ISDN D-channel data forwarding capability starting with DEFINITY R9.2 load 35. The DEFINITY Information Forwarding feature forwards UUI that is associated with the call to the “transferred to” location. When NCR is active in the DEFINITY system, transferring the call using Call Vectoring and AT&T In-band Transfer and Connect, the *disconnect* vector step includes the codeset UUI IE in the ISDN DISSCONNECT message.

## Considerations

This section contains basic information on troubleshooting, as well as important information about administering NCR.

## Troubleshooting

General troubleshooting of NCR can be accomplished by using the following techniques:

- The ISDN message trace information provided by the Message Sequence Tool (MST)
- Vector events displayed by the `display events` DEFINITY system administration command.
- To see the behavior of a particular VDN or vector, use the `list trace vdn` and/or `list trace vector` commands to check for NCR errors.
- To check for NCR errors using BSR processing, enter the `ch MST` switch administration terminal command to set the `BSR` and `vector` fields to `Y`, and use the `enable mst` and the `list mist cont` switch administration terminal commands to see NCR-related MST trace data.
- If logged in at the switch administration terminal (SAT) via the init login, enter `go tcm` followed by the `rdd:dp_mgr Bsr_applloc` command to see the total attempts, internal error, network error, successful redirection, and disconnect peg counts that are associated with BSR call interflows where NCR was invoked. These peg counts are free running and are only reset when the BSR Best Service Routing Application form is accessed using the `ch best` SAT command for a particular BSR application number.

If NCR vector activation fails, use the `display events` SAT command to check for the following NCR vector events:

- 310 NCR: Invoke trunk not ISDN
- 311 NCR: Bad NCR trunk admin
- 312 NCR: No NCT PSTN service
- 313 NCR: No NCT outgoing trk
- 314 NCR: NCT outgo trk drop
- 315 NCR: PSTN NCT invoke err
- 316 NCR: PSTN NCT netwrk err
- 317 NCR: Used NCT trk-to-trk
- 318 NCR: No NCD PSTN service
- 319 NCR: NCD invalid PSTN nmbr
- 320 NCR: NCD call connect err
- 321 NCR: PSTN NCD invoke err
- 322 NCR: PSTN NCD netwrk err

- 323 NCR: PSTN NCD max redirs
- 324 NCR: PSTN NCD no disc
- 325 NCR: Internal system err

See the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521, for additional information on Display Events.

## Things to know

The following important items should be known.

### Failures

Failures can occur in NCR after the *queue-to-best* or the *~r route-to number* vector step is executed. Vector programming should be provided to route the call in another manner is the NCR operation fails.

- **Failure to invoke Network Call Transfer:** If Network Call Transfer is invoked and the public network rejects the call, the call will revert to a trunk-to-trunk transfer. In this case, the call is not lost. However, vector processing is stopped at the redirecting DEFINITY switch.
- **Failure to invoke Network Call Deflection:** If NCD is invoked and the public network rejects the call, the call is disconnected form the rerouting DEFINITY. In this case, the call is lost. No vector processing takes place at the redirecting DEFINITY switch.

### NCT and call vectoring

With NCT, the transferring vector may or may not answer the first leg of the call before redirecting the call over the public network. If the call has not been answered by vector processing, DEFINITY will automatically answer the call before requesting NCT.

### NCD

With NCD, no steps in the vector can be executed that answer the call or the redirection will not occur. Vector steps that should not be used before NCD is invoked are:

- announcement
- wait hearing music
- converse-on split/skill
- collect

### Announcement vector steps

Announcement vector steps cannot be used with NCD before NCD is to be invoked. Announcement vector steps can be used in following vector steps if NCD fails. Announcement vector steps can be used with NCT.

### ASAI drop event

Successful NCR call redirection causes an ASAI “drop” event to be sent to the CTI application with a CV_REDIR cause value of decimal(30) after the redirection is completed. Only one NCR “drop” event is received for a successful NCR operation when the NCT PSTN feature is used, even though two trunks are dropped by the PSTN.

### ASAI third-party merge/call transfer

The CTI application requests a third-party merge/call transfer ASAI operation to transfer the call to the second switch. This is only used if Network Call Transfer is not available. Once the two calls merge, then ASAI sends a third-party acknowledgement, and when the call is completed, ASAI sends a drop event report, and the third-party call ends.

## Interactions

Network Call Redirection interacts with several existing call center features. The features, and the effect NCR has on them, are described in this section.

NCR interacts with or affects the following DEFINITY components:

- station transfer by DCP set Transfer button/hangup or switch hook flash transfer by hangup
- station transfer by DCP set Conference button, in which the conferencing (middle) party connects the two calls and then hangs up
- Station call transfer/conference — An incoming ISDN call over a trunk with NCT PSTN service is answered at the station or VRU or IVR. The station user/VRU answers the call and initiates a “station call transfer” using the transfer feature button or a switch hook flash. The DEIFNITY automatically sends the `invoke NCT` ISDN FACility message when the transfer is complete only if NCT is assigned to the incoming trunk group and the call is eligible for NCT. That is, if the second leg of the call has been set up over a trunk with the same signaling group as the incoming call and the second leg call has been answered. If the station user initiates and completes a three-way conference instead, the DEFINITY automatically sends an `invoke NCT` ISDN message when the initiating station user drops from the three-way conference.
- ASAI third-party call transfer
- ISDN trunk administration
- Attendant Vectoring — Attendant Vectoring can use the *route-to number* vector step with the ~r option to route calls to attendants located at another DEFINITY ECS switch node. The operation of the NCR feature using the NCD or NCT networks features to accomplish the call redirection is exactly the same as for redirecting ACD calls.
- Call Vectoring and Best Service Routing (BSR)
- Advice of Charge — No new capabilities are added for the NCR feature for the Advice of Charge PSTN feature. The Advice of Charge feature should be used with the same trunk facilities used for the NCR feature.

- BCMS — No change is made to BCMS for support of NCR. redirected calls are tracked as completed calls since the PSTN disconnects the incoming facility of the original call when the call is redirected to another site.
- Enhanced Information Forwarding — For the NCR feature, Enhanced Information Forwarding transports User-to-User information (UUI) for the incoming ISDN call to the PSTN endpoint that receives the redirected call. The use of the Enhanced Information Forwarding capability with NCR (the recommended configuration) requires that the incoming call trunk group be assigned as "shared" (i.e., the `UUI IE treatment` field is set to **shared**). However, if the trunk group is set up as service provider, only the ASAI user information (or user information provided by the incoming ISDN call) will be included in the UUI IE sent on a non-shared basis to the redirected-to PSTN endpoint. NCR supports Information Forwarding for AT&T In-band Transfer and Connect service.
- Look-Ahead Interflow — NCR activation using the *route-to number* vector step does note require Look-Ahead Interflow to be active to provide multi-site capabilities, which are required for considering remote locations and access to the BSR Application Plan form.
- Service Observing by VDN — If the DEFINITY Service Observing by VDN feature is used to service observe a VDN, where the NCR feature is used to redirect incoming ISDN calls, the service-observer will hear the same tones, music, and/or announcements heard by the incoming caller before the NCR feature reroutes the call to another PSTN endpoint. When the NCR operation is completed, the service-observer will be dropped as an observer of the incoming call and placed in the service-observing queue associated with the VDN.
- Trunk-to-Trunk Transfer — If the NCR feature is optioned and the ASAI Third-Party make Call/transfer operation is used to redirect an incoming ISDN to a PSTN endpoint, the `Trunk-to-Trunk Transfer` field on the System-Related Customer Options for must be set to **y** for the call redirection to succeed. If the *route-to number* or BSR *queue-to-best* vector step uses the NCR feature to redirect an incoming ISDN call to a PSTN endpoint, the Trunk-to-Trunk Transfer customer option does not have to be set to **y**.
- VDN Return Destination — If the VDN Return Destination feature is administered for the VDN that is associated with a vector that causes the NCR feature to be invoked, the VDN Return Destination feature will be canceled when the call is redirected by NCR.
- CMS, Visual Vectors, and CentreVu Supervisor — CMS Reporting and/or administration on public network calls that have been rerouted to another public network endpoint using NCR will be provided by the following Lucent products:
  - — Release 3 Version 6 (R3V6) CentreVu CMS or later (reporting), administration of ~r with R3V9
  - — Release 6 CentreVu Supervisor or later (reporting)
  - — CentreVu Visual Vectors Version 1.0 or later (administration, BSR vector support)
  - — CentreVu Network Reporting Version 8 or later (reporting)

Currently, the ~r vector step used to activate NCR cannot be administered with CMS. Beginning with R3V9 CMS and Release 9 Visual Vectors, the ~r vector step can be administered using those products.

Reporting of calls that have been rerouted to another public switched telephone network (PSTN) endpoint by NCR will be available on the following products when used with a DEFINITY ECS R8.3 or later:

— Release 3 Version 6 (R3V6) CentreVu CMS

— Release 6 CentreVu Supervisor

ISDN calls that are rerouted by NCR to multiple DEFINITY ECS sites will be reported by CentreVu Explorer II Version 1.0 or later when used with R3V6 or later CMS by using the Universal Call ID (UCID) information that is part of the User-to-User Information for ISDN calls rerouted by NCR.

- CMS database items — CMS data base items are affected by NCR, as follows:

  — DEFLECTCALLS: In the vector and VDN tables, the DEFLECTCALLS item includes the number of calls that are redirected using NCR through the BSR feature by using the ~r route-to-number or queue-to-best commands. Successful NCR attempts are pegged as DEFLECTCALLS.

  — INTERFLOWCALLS: In the vector and VDN tables, the INTERFLOWCALLS item includes successful BSR interflows using NCR redirections.

  — LOOKATTEMPTS: In the vector and VDN tables, the LOOKATTEMPTS item includes the number of times the Look-Ahead Interflow or BSR interflow was attempted for calls in the vector. Successful Look-Ahead Interflow or BSR attempts ar also counted. NCR invoke attempts (NCD or NCT) are also reflected in LOOKFLOWCALLS.

  — LOOKFLOWCALLS: In vector and VDN tables, the LOOKFLOWCALLS item includes the number of INTERFLOWCALLS that were redirected by the Look-Ahead Interflow or BSR features. LOOKFLOWCALLS is a subset of INTERFLOWCALLS and includes LOOKATTEMPTS for the Look-Ahead Interflow or BSR interflows. With BSR interflow via trunk-to-trunk transfer or NCR, every LOOKATTEMPT will also be counted as a LOOKFLOWCALLS unless a failure occurs.

# Queue Status Indications

Queue Status Indications allows you to assign queue-status indicators for Automatic Call Distribution (ACD) calls based on the number of split/skill calls queued and time in queue. You can assign these indications to lamps on agent, supervisor, or attendant telephones or consoles to help users monitor queue activity.

In addition, you can define auxiliary queue warning lamps to track queue status. On telephones and consoles with displays, you can display the number of calls queued and time in queue of the oldest call in the split/skill.

## Administering Queue Status Indications

**Table 3-35. Required forms**

| Form | Field |
|---|---|
| Hunt Groups | ■ Queue Length<br>■ Calls Warning Threshold (per split/skill or attendant group)<br>■ Time Warning Threshold (per split/skill or attendant group)<br>■ Time Warning Port (per split/skill)<br>■ Calls Warning Port (per split/skill) |
| Station (multi-appearance) | ■ Button/Feature Button Assignments<br>— q-calls<br>— q-time |
| Attendant Console | ■ Feature Button Assignments<br>— atd-qcalls<br>— atd-qtime<br>— q-calls<br>— q-time |
| System Capacity | ■ Queue Status Buttons |

## Detailed description

There are two types of Queue Status Indications:

- Number of queued calls (NQC)

  The system report the total number of calls, excluding direct agent calls (DACs), in queue at a hunt group.

- Oldest queued time (OQT)

  The system reports the time in queue of the oldest call in a split/skill queue.

You can also use auxiliary queue warning lamps to provide both types of indications. Install the lamps at any location convenient to agents and supervisors.

If a queue status threshold is reached, the lamp next to the associated button flashes. If calls are queued but the threshold is not reached, the lamp lights steadily. If no calls are queued, the lamp goes dark.

If the OQT or NQC button on a telephone or console with display is pressed, the following information is briefly displayed:

- Split/skill name (or extension, if name is not assigned)
- Oldest queued time
- Number of queued calls

You can use Queue Status Indications to provide status information for attendant groups or other hunt group types (DDC and UCD). With attendant groups, the button names (AQT and AQC) are different than for split/skill queues, the display shows OPERATOR instead of the split/skill name or extension, and all status information applies to the attendant group queue.

If you need to know how many queue status buttons have been administered, or how many your system will allow you to administer, check page 5 of the System Capacity form.

## Interactions

- Attendant and Telephone Display Timers

  The timer and the queue status information can be displayed at the same time. On 1-line displays, the timer is displayed in the last eight display positions and the number of queued calls is not displayed. On 2-line displays, the timer is displayed on the first line and the queue status information is displayed on the second line.

- CMS

  When you use CMS to move an agent from one split/skill to another, all buttons associated with the first split/skill, including NQC and OQT buttons, become associated with the second split/skill.

# Reason Codes (Category A only)

Reason Codes allows agents to enter a numeric code that describes their reason for entering Auxiliary (AUX) work mode or for logging out of the system. Reason codes give call center managers detailed information about how agents spend their time. Use this data to develop more precise staffing forecasting models or use it with schedule-adherence packages to ensure that agents are performing scheduled activities at the scheduled time.

You can administer the codes so that entry is forced or optional. Ten reason codes are available, including a default code. You can assign two system-wide names to each code — one for entering AUX work mode and one for logging out.

You can use VuStats to display the reason code name or number. Use VuStats or CMS to gather historical and real-time reason-codes statistics.

You must have Expert Agent Selection (EAS) enabled to use reason codes.

## Administering Reason Codes

**Table 3-36. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ ACD<br>■ EAS<br>■ Reason Codes |
| Attendant Console | ■ RC |
| Feature-Related System Parameters | ■ EAS<br>■ Aux Work Reason Code Type<br>■ Logout Reason Code Type<br>■ CMS Release (Release 5 and later configurations, or none) |
| Feature Access Code (FAC) (optional) | ■ Aux Work Reason Code Type<br>■ Logout Reason Code Type |
| Language Translations | ■ Line 49 |
| Reason Code Names | ■ All |
| Station | ■ RC |

## Detailed description

### Forced reason codes

If you have administered forced reason codes, agents cannot enter AUX work mode or log out until they enter a code. Agents can enter codes 1 — 9, but not default code 0.

If an agent enters an invalid code or fails to enter a code within the administered timeout interval, the change is denied and the agent remains in the current work mode. If the agent dialed a FAC, the agent hears an intercept tone. If the agent pressed the AUX button, the AUX lamp flutters and then goes dark (or lights steadily if the agent was already in AUX with a different reason code).

### Requested reason codes

If you have administered requested reason codes, agents need not enter a code to enter AUX work mode or log out. Agents can enter the codes 0 — 9. If an agent enters an invalid code or fails to enter a code within the timeout interval, the agent enters AUX work mode or logs out with default code 0.

### Entering AUX work mode

An agent can enter an AUX reason code in one of three ways:

- Pressing an AUX work button with an assigned code
- Pressing an AUX work button with no assigned code and responding to the prompt for a reason code
- Dialing an AUX work FAC and responding to the dialtone prompt for a reason code

If there are no calls ringing, active, or held at the telephone, agents enter AUX work mode immediately and the AUX lamp lights steadily. Otherwise, the AUX lamp blinks until the agent completes all calls at the telephone.

If a button for AUX work is associated with the reason code that the agent entered, the button lamp lights. If no such AUX button exists, the system lights the first AUX button lamp with no administered reason code.

You can assign an AUX button without a reason code to an agent’s phone. This allows agents with a limited number of buttons to use all 10 reason codes.

### Logging out

To log out with a reason code, the agent dials the logout FAC, hears a second dial tone and enters a reason code. The agent hears confirmation tone and is logged out.

### Default code

Default code 0 is used when the system puts an agent into AUX work mode or logs the agent out without the involvement of the agent. For example:

- When an agent logs in and is put into AUX mode
- When an agent makes or receives a non-ACD call from the available state
- When a call is redirected as a result of Redirection on No Answer (RONA) and the agent is logged out or put into AUX mode
- When agent skill assignments are changed while an agent is staffed (the system automatically logs the agent out and back in)
- When an agent forces a logout without entering a code (for example, by pulling the headset)
- When an agent who is requested to enter a reason code fails to enter a valid code within the 10-second timeout period
- When an agent with requested reason codes enters # or *

### Considerations

- If an agent in Auto-In or Manual-In work mode dials the logout FAC but fails to enter a reason code and logout reason codes are forced, the agent is returned to the available state. ACD calls are delivered even if the agent has left the phone. To prevent this, be certain that agents enter AUX or ACW work mode before logging out.
- When an agent changes to AUX work mode and the AUX Work Reason Code Type is set to none, the agent is put into AUX work mode with the default reason code even if you have administered a different reason code for the AUX button. Setting AUX Work Reason Code in this way allows you to complete button administration before activating the feature.
- Do not administer AUX buttons without a reason code for hybrid station sets.
- When an agent in AUX work mode is active on a non-ACD call, the agent cannot immediately change the reason code. A change is pending until the call drops.
- There is a limit to the number of agents who can simultaneously be entering either a reason code or a Call Work Code.

## Interactions

- Abbreviated Dialing

  You can program FACs for AUX work mode or logout with or without an associated Reason Code on automatic-dial buttons or in abbreviated-dial lists. At the reason code prompt, when an agent selects an abbreviated-dial or automatic-dial button, the first digit of the button is taken as the reason code.

- Agents in Multiple Skills

  When an agent who is assigned to multiple skills enters AUX work mode with a reason code, the agent enters AUX work for all of his or her skills with the same reason code.

- ASAI

  ASAI allows a host to log an agent out and place an agent in AUX work mode with a reason code. The host can query the agent's current work mode and receive the reason code associated with the AUX work mode.

- Auto-Available Split/Skill

  The system logs AAS agents out for Redirection on No Answer with the default reason code.

- Basic Call Management System

  Statistics about AUX work mode by reason code are not available in BCMS reports.

- CMS

  CMS tracks time in AUX work mode by reason code and displays reason codes for agents currently in that mode. When an agent is moved from CMS while the agent is staffed, the system logs the agent out using the default code, and then logs the agent back in again. If an agent is in AUX work mode when moved, the agent is returned to AUX work mode with the same reason code when the move is completed.

- Direct Agent Calling

  When a Direct Agent call is queued for an agent in AUX work mode with a reason code, the appropriate AUX button lamp flutters to alert the agent to the queued call. If there is no AUX button lamp, agents receive an audible alert (ring-ping or call-waiting tone). If there is an AUX button with no assigned reason code administered, then that lamp flutters.

- Redirection on No Answer

  When a call is redirected via RONA, an agent is placed into AUX work mode with the default code or is logged out with the default code if the agent is in an auto-available skill.

# Redirection on No Answer

Redirection on No Answer (RONA) redirects a ringing ACD split/skill call or Direct Agent Call after an administered number of rings. RONA prevents an unanswered call from ringing indefinitely. The call can redirect either to the split/skill to be answered by another agent or to a VDN for alternative call handling. Direct Agent Calls route to the agent's coverage path, or to a VDN if no coverage path is administered.

You must have ACD enabled to use RONA. Administer RONA for each ACD hunt group as required. RONA can be used in Auto-Available Splits/Skills (AAS), or in splits/skills with agents operating in Manual-In work mode. You can administer RONA for vector-controlled or nonvector-controlled splits/skills.

Do not administer RONA for splits/skills controlled by adjuncts or AUDIX or for auto-answer agents assigned splits/skills because calls must ring at a telephone to be redirected.

## Administering RONA

**Table 3-37. Required forms**

| Form | Field |
|---|---|
| Hunt Group | ■ ACD<br>■ AAS<br>■ Vector<br>■ Controlling Adjunct<br>■ Message Center<br>■ Redirect On No Answer (Rings)<br>■ Redirect to VDN |
| Station (multifunction) | ■ Button Assignments<br>— noans-alrt |

You must set Controlling Adjunct to **none**.

## Detailed description

When RONA is invoked for a call, the system:

- Places an agent in AUX work mode, and thus unavailable to receive calls from other splits/skills. In an AAS, the agent is logged out.
- Redirects split/skill calls back to the split/skill or administered VDN.

  Redirected calls are requeued at the highest priority so that they are distributed before any other split/skill calls. See ''RONA routing sequences'' for more information about call redirection.
- Sends a message to CMS.

  When a RONA timeout occurs, the Noans-alrt lamp for the split/skill lights steadily. The supervisor presses the Noans-alrt button to display the login ID or the extension and name of the last agent timed out with RONA.
- Records the redirection in BCMS or CMS. See ''Using BCMS/CMS reports with RONA'' for additional information.

## RONA application examples

### VRU applications (Category A only)

Typically, RONA is used with VRU applications in AAS configurations. RONA detects VRU failures and provides alternate operation. For example, an adjunct port failure is not detected by ACD call processing. RONA detects the failure, takes the port out of service, and provides notification of the failure.

Use Call Vectoring for flexible call handling in case of a VRU failure. Assign RONA a converse split/skill connected to the Conversant or to equivalent VRU ports. Whenever RONA times out on a ringing call delivered via the *converse-on* command to a VRU port, the agent is logged out and the call is redirected back to the converse split/skill.[1] With a complete VRU failure, all VRU ports are eventually logged out and vector processing for the *converse-on* command bypasses that step for new calls.

1. RONA can't redirect a call to an administered VDN from a *converse* step.

The Screen 3-10 vector shows how to provide automatic backup for a complete VRU failure.

```
                                CALL VECTOR

01 wait-time 0 secs hearing ringback
02 converse-on split...  (VRU returns the digit "1" as a return code
      followed by additional digits for the application)
03 collect 1 digits after announcement none
04 goto step 6 if digits = "1"
05 goto vector xxx  (for backup when the VRU fails)
06 collect 2 digits after announcement none
07 ...
```

**Screen 3-10. Call Vector**

In Screen 3-10, the application works as expected as long as the VRU returns the digit string, which includes a return code of 1. In this case, the condition in Step 4 is satisfied and the program branches to Step 6, which provides normal application processing.

On the other hand, if all VRU ports in an AAS split/skill are logged out by a RONA timeout, the *converse-on* command step (Step 2) is skipped, and no digits are collected by Step 3 (after the 10-second timeout). The condition in Step 4 is not satisfied and vector processing proceeds to Step 5, which branches to vector xxx to connect the call to an agent.

## Other applications

You can use RONA for applications that involve human agents with manual answering and other adjunct applications, such as Home Agent. For example, a call may not be answered because an agent left without entering AUX work mode or logging out. You can use RONA to make the nonanswering agent unavailable and redirect calls to another agent or to the RONA VDN.

## RONA routing sequences

Table 3-38 and Table 3-39 describe how RONA redirects split/skill calls and Direct Agent calls.

**Table 3-38. RONA Routing Sequence for Direct Agent Calls (Category A only)**

| Redirection Destination | Explanation |
|---|---|
| Coverage path | Direct Agent calls redirect to a coverage path, if one exists. Priority calls do not route to coverage. |
| RONA VDN | If no coverage path exists but a VDN is administered for RONA, Direct Agent calls redirect to the VDN. |
| VDN return destination | For external calls, if neither a coverage path nor a RONA VDN are administered, then Direct Agent calls redirect to the VDN Return Destination extension. |
| None | Calls continue ringing. |

**Table 3-39. RONA Routing Sequence for Split/Skill Calls**

| Redirection Destination | Explanation |
|---|---|
| RONA VDN | If a RONA VDN is administered, calls redirect to the VDN. |
| Requeue to split/skill | If a RONA VDN is not administered, calls redirect to the split/skill. |
| Coverage path | In nonvector-controlled splits, if calls cannot requeue to the split, they redirect to the split's coverage path if one is administered. |
| VDN return destination | For external calls, if a coverage path or a RONA VDN is not administered and calls can not requeue, they redirect to the VDN Return Destination extension. |

## Using BCMS/CMS reports with RONA

You can use BCMS and CMS reports to determine which agents had RONA timeouts and how calls were redirected.

With R3V2 and later releases of CMS, the exception report lists agents who were timed out and made unavailable. With BCMS and earlier releases of CMS, you can determine which agents were in AUX work mode or logged-out with AAS.

With R3 CMS, you can use the real-time “Split Status” report to see which agents are in AUX work mode, but you need a custom report to see logged-out agents.

With BCMS, use SAT to create a list of unstaffed agents for the split to see which agents are logged out (for AAS applications). With EAS, list agent-loginid specifying unstaffed and AAS = yes.

With BCMS, agents’ changes to AUX work mode appears in the BCMS Split (AGENT) Status report. In an AAS split, agents log out, so they do not appear in the Split Status report. When the call is requeued, the System Status report shows only the AVG ANSW SPEED time and AVG ABAND TIME time for the requeued call. The Historical Split and System reports show both a FLOWOUT (primary split) and FLOWIN (redirected split) for requeued calls, while the VDN report shows only a FLOWOUT.

Direct Agent calls are recorded as ACD split/skill calls but the flowout is recorded only if an agent’s coverage path requeues the call to a split/skill.

Since BCMS does not report exceptions, RONA events are not reported. If you have BCMS, use the RONA split/skill lamp indicator for RONA event indication.

## Returning AAS agents to service

When RONA redirects a call that was directed to an AAS, the agent is logged out. To return an AAS agent to service, readminister the agent as a member of the AAS split/skill to be logged in again in one of the following ways:

- For ACD splits, remove the agent from the split and then resubmit the split Hunt Group form with the agent added to it. Alternatively, administer the agent in a different location in the split members list on the Hunt Group form. Use the *list unstaffed-agents* command to get a list of all AAS agents that have been logged out, not just AAS agents that were logged out because of a RONA timeout.
- For EAS skills, readminister the Agent LoginID form so that the AAS agent is automatically logged in. To determine which EAS agents are logged out, use the *list agent-loginid* command.
- For ACD splits and for EAS skills, you can busy-out the AAS agent station with the *G3-MT busyout station* command and release it with the *release station* command. Releasing the AAS agent station automatically logs the agent in. If all AAS agent ports on the circuit pack had a RONA timeout, busy-out and release the entire circuit pack.

- Use CMS Move Agents to move up to 32 agents at a time into a dedicated unused split/skill and then move the agents back into the AAS split/skill. You can set this up using the timetable on a manual-scheduled basis to activate when the VRU has been restored to service after a failure.
- Use ASAI to log the logged-out agents back in via ASAI login request messages.

## Considerations

- RONA can timeout while an agent is actually at the station if the agent does not answer soon enough or has selected another work mode while a call is ringing. RONA handles the call as usual, making the agent unavailable. With ACD splits, agents at multifunction telephones know that they have been made unavailable when they see the AUX-Work lamp lit. They press the Auto-In or Manual-In button to become available.
- Specify a coverage path or VDN for redirection for nonvector-controlled splits or for Logical Agent IDs with EAS Direct Agent Calls to ensure that calls are always redirected.

## Interactions

- AAS

  Use AAS with RONA for VRU ACD non-ASAI adjunct-controlled split/skill applications. Assign AAS only to ACD hunt groups. When all lines in a vector-controlled AAS split/skill are logged out, the split/skill is considered unavailable, and vector processing skips the step in the vector for new calls.

  If RONA occurs on the last VRU port in an AAS split, the call is not requeued to the converse split, but is processed by the next vector step.

  Any calls queued to a split/skill that has been taken out of service may be left at this split/skill. When the system reinitializes, all busied-out ports are automatically logged back into the AAS splits. New calls cause a RONA timeout if the adjunct or agent still does not answer after the system reinitializes.

- Abandoned Call Search

  Abandoned Call Search, if defined for a trunk, is reapplied to call on that trunk that RONA requeued whenever the calls are routed to another agent.

- Agents in multiple splits

  When a RONA timeout occurs, an agent is placed in AUX work mode with notification to CMS for all splits that the agent is logged into. The agent is responsible for becoming available in each split. In an AAS, agents are logged out of all splits that they are logged into. You must log agents back into the AAS splits.

- Agent logout

  An agent can log out from a multifunction set while an ACD call subject to RONA is ringing the set. However, if the agent logs out before RONA times out, RONA timing is canceled, and RONA redirection and notification occur immediately.

- Agent work modes

  If an agent presses the ACW button with an ACD call ringing, the change request is pending. If the agent has a pending change to ACW before a RONA timeout occurs on a ringing ACD call, RONA timing continues. At timeout, the call is redirected, CMS is notified, and the agent is placed in AUX work (overriding the pending ACW request).

  If an agent presses the AUX-Work button with an ACD call ringing, the change request is pending. With ACD splits/skills, since the RONA time-out changes the state to AUX-Work, there is no conflict with the pending AUX-Work change request. With AAS splits/skills, an agent-initiated AUX-Work change is denied per existing operation.

- ASAI (Category A only)

  RONA applies to vector-processed calls that are routed by an adjunct to a split or agent as a Direct Agent Call.

  You can assign RONA to ASAI adjunct-monitored splits and adjunct-monitored calls. An event report is not sent to the ASAI adjunct when a RONA timeout puts an agent into AUX work mode.

  The adjunct makes an agent query (as part of the value query capability group) to determine the agent's state. Once the call is requeued to the split, the adjunct receives a call-queued event report if event reporting is active for the domain (VDN or nonvector-controlled split/skill).

  An adjunct-monitored split/skill can be assigned as an auto-available split/skill. The logout event for an AAS split/skill is sent to the adjunct when RONA timeout logs an agent out.

  You cannot assign RONA to an adjunct-controlled split/skill. An adjunct-controlled split/skill cannot be an AAS.

  ASAI Conversant VRU applications are configured with nonvector-controlled splits/skills using manual-answer operation on analog lines to Conversant ports. The ASAI link provides event notification for the ACD split/skill for enhanced services. In addition, you can log in and log out the ports as required. (AAS splits/skills are not used for this application because the ASAI link controls the login or logout).

  You can assign RONA to these splits/skills to detect failure conditions in the same manner as non-ASAI VRU applications. RONA does not notify Conversant of AUX work mode changes. ASAI Conversant cannot query to determine the states of its ports. You must restore ports manually after a failure via Conversant management screens. Complete failure is automatically restored when Conversant reinitializes. Table 3-40 on page 3-147 describes ASAI events that the switch sends the adjunct for various stages of the RONA call. Also included are the ASAI associations (assuming that they are active) for which the events are provided. For the split/skill to have Notification association active, the split/skill must not be vector-controlled or adjunct-controlled.

**Table 3-40. RONA/ASAI events**

| Stage of Call | ASAI Event | ASAI Associations |
|---|---|---|
| 1. RONA timeout | Logout (for AAS) | Domain (agent) control |
| 2. Call redirected to split | Call redirected | Domain (station) control (for agent ext call is leaving) |
| | Call queued (only if the call queues) | Domain (station) control, (for new agent & for internal originator) call control, notification |
| 3. Call redirected to VDN processing | Call redirected | Domain (station) control (for agent ext that call is leaving) |
| | Call redirected (only if call is redirected to a VDN with Notification active) | Notification |
| | Call offered to Domain | Notification (VDN) |
| 4. Call delivered to agent | Alerting | Domain (station) control, (for new agent & for internal originator) call control, notification |
| 5. Call routed to split's coverage path | Call redirected followed by existing operation of ASAI Events | Domain (station) control (for agent ext that call is leaving) |
| 6. Infinite feedback to caller | Call redirected | Domain (station) control (for agent ext that call is leaving) |
| 7. Continue vector processing | Call redirected followed by existing ASAI events | Domain (station) control (for agent ext that call is leaving redirecting to VDN) |
| 8. Call routed to direct agent's coverage path | Call redirected followed by existing operation of ASAI events | Domain (station) control (for agent ext that call is leaving) |

When a call is redirected via ASAI Redirect Call, the RONA timer is canceled.

- Attendant return call

  If an attendant extends a call to an ACD split or VDN for which the return call timer is not activated, the call does not interact with RONA. The Attendant Return Call Timer is *not* set if an attendant extends the call to another attendant.

- AUDIX Transfer

  RONA applies to a call transferred by AUDIX to an ACD split. A redirected call to AUDIX does not go to split or agent coverage after it is transferred out of AUDIX. If RONA times out on this type of call, the call cannot be redirected.

- Automatic answering

  If an agent with automatic answering receives a call with zip tone instead of ringing, RONA timing is canceled.

- Call Coverage

  Direct Agent calls are redirected to the agent's coverage path if a path is administered. A temporary bridged call appearance is not maintained for a call directed to an ACD hunt group or VDN, or for a Direct Agent call.

  When a call is redirected to a split/skill, the Coverage Subsequent Redirection/CFWD No Answer timer is started on the call. Covered calls go to the next point in the split/skill coverage path.

  If no other point is available to accept the call, the call remains queued or continues to ring the current coverage point. When RONA times out at the coverage point, the following occurs:

  — RONA does not reset the Subsequent Redirection/CFWD No Answer timer. The timer that expires first controls the call.

  — If the coverage point for a covered call is a direct agent logical agent ID whose skill has RONA, and if RONA times out first, the call is sent to the next point in the skill coverage path, not to the agent's coverage path. The Subsequent Redirection/CFWD No Answer timer is reset when the call is redirected to the next coverage point.

  — If RONA was applied to an ACD call that was a previously redirected coverage call (that is, the RONA split was a point in the coverage path), RONA is used to requeue the call as specified for a noncovered call. However, the call is not designed to go to split coverage or forwarding. The Subsequent Redirection/CFWD No Answer timer is reset if RONA requeues the call to the RONA split. Both the RONA timer and Subsequent Redirection/CFWD No Answer timer are reapplied.

  — If RONA applies to an ACD call that was a previously-redirected coverage call (for example, the RONA split was the second point in the coverage path), the call is redirected to the next coverage point in the principal's coverage path if the call cannot be requeued to the RONA split. The Subsequent Redirection/CFWD No Answer timer is reset.

  — If no other point in the coverage path exists or other points are unavailable, the split-covered call that cannot be requeued or the direct-agent-covered call receives call-cannot-be-redirected handling.

- Call Detail Recording (CDR)

  When an agent is assigned to be recorded on the CDR record as the called number, the RONA redirected-to answering destination is recorded as the final called number. You can administer CDR to record the VDN, the hunt group, or the answering agent as the called number.

- Call Forwarding All

  If an adjunct Direct Agent call is made to an agent's extension that has Call Forwarding All assigned and it is redirected by RONA, the call follows the agent's coverage path.

  A call forwarded via Call Forwarding to a split or logical agent ID with RONA is sent to the principal's coverage path instead of going to the split's coverage path (if the call cannot be requeued) or to the agent's coverage path (for a Direct Agent call) on RONA redirection.

- Call Pickup

  A member of an agent's pickup group can pick up an ACD call that is being timed for RONA. RONA is cancelled.

- Call Vectoring

  RONA applies to vector-controlled ACD splits when calls are queued via the *queue-to split*, or *converse-on split*, or *check split* commands. Also, RONA applies to nonvector-controlled and vector-controlled ACD splits when calls are routed to the split via a *route-to* or a *messaging split* command. Basic Call Vectoring handles an AAS with all agents logged out as unavailable and skips the relevant step, just as it does for a split with all queue slots busy. With an *adjunct routing* or *route-to with coverage* step that routes to a vector-controlled split with all agents logged out, the call is given a busy tone just as when the call cannot queue to a nonvector controlled split according to the existing operation.

  Vector events are generated for a RONA timeout when *converse-on* processes a call or results in a RONA redirection failure, and when a vector step is skipped because all AAS agents are logged out.

  Do not assign vector-controlled splits coverage, forwarding, or night service, because Call Vectoring provides these functions. These functions do not apply to RONA-redirected calls involving vector-controlled splits.

- Calling/Called Number Display

  A call to a split/skill that RONA redirects is similar to a direct call to the split/skill. If the call goes to coverage, the destination display looks like it does for a normal covered call.

  An internal or DCS caller to an ACD hunt group or VDN sees displayed the hunt-group or VDN name and extension. This display remains when the call rings an agent. A Direct Agent call (with EAS) initiated at a phone displays the agent name and logical ID when the call rings the agent station. If the ACD split call or Direct Agent call goes to coverage, the name remains, but the extension or logical ID portion changes to "cover." This also happens when RONA redirects a call.

- Delay announcements

  Delay announcements assigned to non-vector-controlled splits are applied to requeued RONA calls as usual for redirected calls.

- Direct Agent Calling (Category A only)

  RONA applies to Direct Agent calls from splits with RONA assigned. RONA timing applies when a Direct Agent call (from an adjunct or phone) is delivered to and rings an agent with manual answering. Agents are placed in AUX work mode or logged out even if they are the last agent in the split and ACD split calls are queued. Direct agent calls that are queued for an agent remain queued and are not delivered because the agent is unavailable. Don't-answer (DA) coverage continues for the queued calls.

  If an agent with a coverage path is made unavailable by a RONA time-out on a non-covered Direct Agent call, the call follows the agent's coverage path. With EAS, the agent's logical extension coverage path for Direct Agent calls is used. If the agent has no coverage path or if the path is unavailable, the call cannot be redirected and the caller hears previously-provided feedback.

  If Direct Agent call comes from a split that has forwarding or night service, the call is forwarded, precluding RONA timing. If the agent has forwarding or Send-All-Calls, the Direct Agent call is forwarded (ACD calls only) or goes to coverage, precluding RONA timing.

- Direct Department Calling

  RONA applies to DDC-type hunt-group ACD calls.

- Home Agent

  RONA applies to Home Agent lines that terminate on the Conversant Home Agent system as a means to detect port failures. Home Agent lines use Manual Answer and are not present in AAS. Once RONA notification is made, you can correct the failure and restore service manually on Conversant.

- Inbound Call Management (ICM)

  RONA applies to ICM-managed calls that ring an agent in an ACD split with RONA assigned.

- Message Center/Server Service

  You can assign RONA to Message Center/Server ACD splits.

- Multiple Call Handling (MCH)

  If an MCH agent has a call active or on hold and the Redirection on No Answer timer expires for another ringing ACD call, the ringing call is redirected to the split/skill or administered VDN. When the call redirects, the agent is not made unavailable, but is placed in the queue of available agents.

- Music-on-Hold access — Music on Transferred trunk call

  Trunk callers who are transferred to another destination continue to hear administered music (or silence), not ringback, while the call rings. This applies while the transferred call queues to a split.

  If the trunk call (an ACD call or Direct Agent call) is transferred to a split with RONA, timeout applies to the call, but the caller continues to hear the previous feedback instead of ringback.

- Night Service

  When Night Service is activated, calls (including RONA calls) for the hunt group redirect to the night station extension. If the night service split has RONA assigned, RONA timing is reapplied to the redirected call.

- Queue status indications

  Calls that RONA requeues are counted in the queued calls total. When a RONA call is queued, the call's call-wait time is reset, so RONA does not affect the oldest call waiting (OCW) time.

- Queuing

  When redirected to a split, RONA timed-out ACD calls in a nonvector-controlled split are queued at the highest priority. These calls are distributed before any other calls, except Direct Agent calls.

- Stations

  RONA applies to ACD split or direct agent ACD calls that ring at multifunction or hybrid stations with Manual Answering in an ACD hunt group.

  RONA applies to Off-Premises Station (OPS) lines in an ACD split.

- Voice Response Integration (VRI) (Category A only)

  You can assign RONA to *converse* splits. RONA timing applies to calls that a *converse-on* command queues and delivers. RONA timing is canceled if a call is delivered to an agent in another split to whom the system previously tried to queue a call.

  RONA interacts with *a converse* split that is an AAS like any other AAS.

  If RONA must redirect a call to an agent port in a converse split and the queue is full or all AAS agents are logged out, the call is processed by the next vector step while the caller continues to hear the previous vector feedback.

## Interactions with other ringing call timers

Several features time the ringing when an ACD call is delivered to an agent. You can use RONA's timer in conjunction with other timers.

**NOTE:**
The timer that expires first applies to the call. RONA is canceled if any of the other timers expires first, except in the case of coverage timers.

When a coverage timer expires, RONA timing is canceled only when the call goes to coverage. If RONA times out first, the other timers continue timing or are stopped and may later be reset. The timers that may interact with RONA are listed in Table 3-41 on page 3-152 and Table 3-42 on page 3-152. Table 3-42 indicates what happens to the timer if RONA times out first

**Table 3-41. Timer description**

| Timer | Description |
|---|---|
| Split DA | Split Call Coverage Don't Answer (nonvector-controlled) |
| Covering DA | Covering Point DA - Subsequent Redirection No Answer |
| Agent DA | Agent DA Coverage (Direct Agent Calls) |
| NATO | DID/CO Trk No Answer Timeout |
| WAST | Wait Answer Supervision Timer |

**Table 3-42. RONA/timer interaction**

| Timer | RONA timeout | Restarted after redirection? |
|---|---|---|
| Split DA | Stopped | If requeued or delivered to another agent |
| Covering DA | Stopped | If redirects to covering point |
| Agent DA | Stopped | If covers to Direct Agent with coverage |
| NATO | Continues | N/A |
| WAST | Stopped | If ringing destination or RONA redirection fails |

If you want RONA notification and redirection, set the number of rings (or equivalent time) for a RONA timeout to shorter than other timeout periods. DA timers start when a call is placed in queue and continue when the call rings the station. Since RONA starts only when the call is ringing, the RONA interval is usually set to two or three rings, while the DA interval is set to 10 or more rings.

Since queue time is variable, assign a coverage timeout period that is greater than the longest expected queue time plus three or four rings (the time the call could ring the agent).

The NATO timer starts when the call seizes the incoming trunk. The timer could thus be timing before the call is queued by vector processing. Therefore, set the NATO timer to greater than the longest expected time before the call rings the agent (including time before and after being queued) plus three or four rings.

The WAST timer starts when the call rings the agent. Set the RONA timer to a slightly shorter interval (fewer than 10 rings) than the WAST 50-second interval.

# Remote Logout of Agent

The Remote Logout of Agent feature allows a user to logout an idle ACD or EAS agent without being physically present at the agent's station. The user who is logging out the agent can be locally or remotely located.

The Remote Logout of Agent is similar to the Add/Remove Skills feature.

## Administering Remote Logout of Agent

**Table 3-43. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ Call Center Release field set to 9.1 or newer<br>■ Remote logout of agent field set to **y** |
| Feature Access Code | ■ Call Center page, Remote Logout of Agent field set to appropriate access code |

## Detailed description

This feature allows a user to log out an agent using a feature-access-code (FAC). Remote Logout of Agent can be used to discontinue the delivery of ACD calls to a station that is no longer staffed by the agent.

While the RONA feature places an agent station in the aux-work mode, it does not log an agent out. Note that the RONA feature does log out an AAS port. The Remote Logout of Agent feature addresses the need to be able to log out the agent who is no longer at his station and is still logged in.

The Remote Logout of Agent feature makes it possible for supervisors (or other users who are appropriately authorized) to log out agents without physically going to the agent station to perform the logout action.

Remote Logout of Agent requires DEFINITY R9 or later and Call Center Release 9.1 or later.

## Verifying that the system parameters are set to enable use of the Remote Logout of Agent feature

To verify that the system parameters are set for use of this feature, complete the following steps:

### Class of Service form

1. Set up a Class of Service (COS) with console permissions set to **y**

### Class of Restriction form

2. Enter **command display system-parameters customer options** (you will only be able to do this if your loginID has an appropriate COS assigned to it). Ensure that the Call Center Release is set to 9.1 (or later).
3. Enter **command change cor x** and proceed to page 2 of the form.
   Note: x = valid COR, which is any number between 1 and 95.
4. Set the Remote Logout of Agent field to **y**.
5. Submit the form.
6. Recall the form and verify that the change is intact.

### Feature Access Code form

7. Enter command **change feat**.
8. Go to the Call Center page.
9. Change the Remote Logout of Agent Access Code value to the preferred access code.
10. Submit the form.
11. Recall the form and verify that the change is intact.
12. Enter the TCM command **rdd :dp_mgr Dac_e**
13. Verify that the assigned value appears as the Remote Logout access code.
    Note: Steps 11 and 12 only need to be completed if there is reason to suspect that there was a problem with the change implementation.

### Save changes to COR and FAC

14. Enter command “save trans” to save the changes to the COR and FAC.

## Administering permissions for users to remotely logout agents

The Remote Logout of Agent feature can only be used if user permissions are administered appropriately for the person who is attempting to use the feature. It is the DEFINITY Administrator's responsibility to ensure that the appropriate users have permissions administered so that they can use this feature.

Prior to setting up the user's Login ID, the DEFINITY Administrator) needs to administer a COR and the FAC for the Remote Logout of Agent feature.

The following table summarizes the fields where the permissions are set for each type of Remote Logout of Agent user.

**Table 3-44. Setting permissions for Remote Logout of Agent users**

| User type | COS form | COR form | TN form |
|---|---|---|---|
| Local station | station | extension | extension |
| EAS agent logged in | station | loginID | loginID |
| Remote (using VDN | NA | VDN | VDN |

To enable the user to use the Remote Logout of Agent feature, the DEFINITY Administrator ensures that the following permissions for are set correctly:

- COR is set to a COR that has the feature enabled
- For local users, the station set is assigned to a COS that has console permissions
- If tenant partitioning is used (ie, more than one is assigned for the system), the person who is logging out agents must be in the same tenant partition as the agent being logged out.

## Logging out an Agent (locally, within the switch)

If an agent has left his station without logging out of the DEFINITY ECS, then ACD calls can still be sent to the station but they do not get serviced and BCMS/CMS/ASAI may continue to track activity to the station.

Prior to Release 9, the agent could only be logged out at the physical station where he was logged in, or from the switch room using the PBX to busy-out the station.

This feature allows the supervisor (or a fellow agent with permissions) to log out an agent who has left his station without being physically present at the agent's station.

To do this, enter the FAC that was established to activate this feature followed by the agent's loginID or physical station extension (physical extension only in non-EAS).

## Logging out an Agent (remotely using VDN)

Many call centers are geologically dispersed, but the reporting and tracking of agent activity takes place from one main location. Or, agents can log into the system remotely and take calls using the Home Agent capability.

With the Remote Logout of Agent feature, a vector is administered with a route-to number step that contains the FAC for remote logout. The FAC can be followed by the agent's loginID or the supervisor can dial the loginID after the VDN with an appropriately programmed vector. Note that service observing and remote logout are the only features that can use a VDN vector in this manner.

If the user is remote and calling into the switch through a trunk, the user may reach the activation VDN to logout the agent. In this case, the entire FAC-with-EXT is required in the vector. Or, the vector can prompt the user to enter the extension and then route-to digits. An activation vector can also prompt the user for a password for additional security. Note that a remote trunk user might not hear confirmation tone (it varies with trunk type and trunk administration) and the user's phone will continue to hear feedback until the user hangs up.

To set up this capability, the DEFINITY Administrator must create an activation VDN and set the incoming destination of a CO trunk to be the activation VDN. The VDN to which the trunk terminates must be assigned a COR and a TN that include the appropriate settings for use of the Remote Logout of Agent feature. In this example, the activation VDN includes the following vector:

01 wait time 0 seconds hearing ringing

02 collect 5 digits announcement 3501 ("enter password")

03 goto step 5 if digits = 39744

04 disconnect after announcement 3502 ("bye")

05 collect 1 digits announcement 3503 ("enter 1 to logout agent 89923, 2 to logout agent 89924...")

Note: The names of the agents can also be requested in the appropriate switch-setup.

06 route-to number *6389923 with cov n if digit = 1

07 route-to number *6389924 with cov n if digit = 2)

08 goto step 5 if unconditionally

**NOTE:**

In this example, *63 is the FAC assigned for Remote Logout of Agent.

This example is one of many ways in which the vector can be written to activate the VDN.

To log out an agent from an outside line, the supervisor (or other authorized user) completes the following steps:

1. Dial into the switch from an outside line and reaches the activation VDN.
2. The system prompts the user for a password (step 2 in the vector shown above).
3. Enter the programmed password.
4. The system begins prompting for the agent to be logged out.
5. (Using the above vector example) Enter 1 because the loginID associated with that prompt is Agent A's loginID (or name).

## Considerations

- The Call Center Release field on the System-Parameters Customer-Options form must be set to 9.1 or higher in order for Remote Logout of Agent to work.
- The Remote Logout of Agent Access Code is set on the Feature-Access-Code form.
- The user who performs the remote logout must have the appropriate Class of Restriction and Class of Service assigned to his/her station set.
- If a remote logout is attempted for an agent who is on an ACD call or who is not logged in, the logout fails.
- An activation VDN can be created to use for remotely logging out an agent. The activation VDN can then be used to log agents out from a remote location. To accomplish this, the incoming destination should be assigned the activation VDN. The VDN must have the appropriate COR and TN (if Tenant Partitioning is used) assigned.

## Interactions

- Tenant Partitioning

  If Tenant Partitioning is used, the user who or VDN that performs the remote logout must be in the same tenant partition as the agent who is being logged out.

- Auto-Available Split/Skill

  If an agent login ID is assigned to an Auto-Available split/skill, then the Remote Logout of Agent feature cannot be used to log the agent out. RONA can be used to automatically logout a port that is not answering calls.

- AUDIX

  If an agent is a member of an AUDIX hunt-group and has no other splits/skills assigned to the agent login ID, then the Remote Logout of Agent feature will not successfully log out the agent, even though the user attempting the logout hears a confirmation tone.

- non-ACD hunt groups

  If an agent is a member of ACD splits/skills and is using a physical extension that is a member of a non-ACD hunt group, then use of the Remote Logout of Agent feature will log the agent out of the splits/skills but allow the agent to continue receiving non-ACD calls.

- Timed ACW

  If an agent answers a an ACD call for a hunt group with Timed After Call Work administered and then hangs up the call, the Remote Logout of Agent feature can be used to log out the agent during the ACW time.

- Service Observing

  An agent can be logged out using the Remote Logout of Agent feature while being service observed.

# Service Observing

Service Observing allows a specified user, such as a supervisor, to observe or monitor another user's calls. In this section, "observer" refers to the supervisor who is observing calls. "Agent" refers to the extension, attendant, or logical agent being observed. A vector directory number (VDN) call can also be observed (Category A only). Observers can observe in listen-only or listen-and-talk mode.

Note that you set up Service Observing to observe a particular extension, not all calls to all extensions at a station.

**NOTE:**
Service Observing may be subject to federal, state, or local laws, rules, or regulations or require the consent of one or both of the call parties. Familiarize yourself and comply with all applicable laws, rules, and regulations before using this feature.

## Administering Service Observing

**Table 3-45. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ Service Observing (Basic) — for basic or Logical Agent ID observing<br>■ Service Observing (Basic) and Service Observing (Remote/By FAC) — for remote observing or observing via feature access code<br>■ Service Observing (Basic) and the Service Observing (VDNs) — for VDN observing<br>■ Vectoring (Prompting) — for vector-initiated observing |
| Class of Restriction | ■ Can Be Service Observed<br>■ Can Be Service Observer<br>■ Service Observing COR Table |
| Feature-Related System Parameters | ■ Service Observing Warning Tone<br>■ Expert Agent Selection (Logical Agent ID) |
| Station (multiappearance) | ■ Button/Feature Button Assignment (basic, VDN, Logical Agent ID)<br>— serv-obsrv |

*Continued on next page*

**Table 3-45. Required forms (Continued)**

| Form | Field |
|---|---|
| Feature Access Code (FAC) | ■ Service Observing Listen Only Access Code (remote/by FAC, VDN, Logical Agent ID)<br>■ Service Observing Listen/Talk Access Code (remote/by FAC, VDN, Logical Agent ID) |
| Vector Directory Number (VDN) | ■ Observe on Agent Answer |

- Class of Restriction form
  - — On the agent's COR form, set the `Can Be Service Observed` field to **yes** to allow the extension to be observed.
  - — On the observer's COR form, set the `Can Be Service Observer` field to **yes** to allow the extension owner to observe others' extensions.
  - — On the observer's COR form, grant permission to observe specific CORs. On the Service Observing COR table, enter **y next to the CORs to be observed.**

## Detailed description

To begin observing, the observer presses the Service Observing button plus the agent's extension number. Initially, the observer is in listen-only mode. The observer presses the Service Observing button to toggle between listen-only and listen/talk mode. The lamp indicates which mode the observer is in.

To deactivate Service Observing, the observer hangs up, selects another call appearance, or presses the disconnect or release button.

An observer can observe an agent who is not active on a call. The observer is in the wait state until the agent receives a call, then the observer is bridged onto the call.

You can administer a warning tone on each system to let agents and callers know when someone is observing a call. Before connection, the conference tone may add 2-3 seconds delay if enabled. The parties hear a 2-second, 440-Hz warning tone before an observer connects to a call, followed by a half-second burst of this tone every 12 seconds during observation.

## Observing Logical-Agent IDs

With EAS, an observer can observe agents based on their logical-agent ID rather than their physical phone. The observer enters the logical-agent ID extension number of an agent, who must be logged in to a phone. The observer can monitor every ACD, personal, and Direct Agent call delivered to or placed by the agent, including calls placed to the physical extension.

Only one observer can observe an extension at one time. An observer cannot observe a logical agent ID extension at a physical terminal that is already being observed. Likewise, an observer cannot observe a physical extension that is being observed as a logical-agent ID extension.

## Observing VDNs (Category A only)

To observe a VDN, the observer enters a specific VDN extension and bridges onto calls (one call at a time) that have started vector processing for that VDN. The observer hears all tones, call prompting, caller dialing, announcements, music, and speech that the agent and caller hear. If an observer is in a COR administered to hear VDN of Origin announcements and has a VOA Repeat button, he or she can hear and replay VDN of Origin announcements.

Effective with Release 9, service observing of VDNs is enhanced to (optionally) start observing of a call to the VDN when the call is delivered to the agent or station. When this VDN option is active, VDN service observing activation still associates the observer with calls to the VDN, but the observer does not hear a call during vector processing. After initial activation, the first call to be observed must first pass through vector processing before the observing is enabled. When the observing connection is completed for the first call (the call is released), the observer is bridged on a subsequent call to the VDN (which has also been through vector processing) when the call is answered by an observable agent/station. This ability saves time for the observer because, after observing of the VDN has been activated, the observer does not have to wait (and listed) for each subsequent call to go through vector processing and for the agent to answer.

The ability to observe VDNs when the call is delivered to an agent/station is activated by setting the “Observe on Agent Answer” field on the VDN form to **y**.

The observer sees the name of the VDN, agent, or trunk as each is accessed in sequence by the VDN. For example, during vector processing the VDN name is displayed, but when the call connects to an agent, the agent name is displayed.

When the observer connects to a call in vector processing, the system maintains the connection until the call is disconnected or the observer hangs up, even if the call is routed or transferred externally. If the observer does not disconnect after one observed call is disconnected, the observer is connected to another call on the same VDN. Observing is listen-only as long as the call is in vector processing. Once the call is out of vector processing, an observer with listen/talk capability can talk as well as listen.

## Observing Remotely or by FAC (Category A only)

Observers can observe calls from a remote location or locally using Service Observing FACs. When observing remotely, observers must use FACs. Different FACs are required for listen-only and listen/talk modes. When observing locally or remotely by FAC, the observer cannot toggle between modes. Physical extensions, logical-agent ID extensions, and VDNs can be observed remotely.

Remote observing is initiated through Remote Access or Call Vectoring.

- With Remote Access, an observer accesses a switch via a trunk group dedicated to Remote Access or via a DID to the Remote Access extension. Remote observing works with all types of DID trunks, including ISDN-PRI and tie trunks, and DCS over analog, T1, or PRI.
- With Call Vectoring, an observer accesses a switch by dialing a VDN extension or a central office (CO) trunk that has a VDN extension as its incoming destination. Using route-to commands, you can design a Service Observing vector to allow a VDN call to directly access a specific extension to be observed or a Service Observing dial tone. At the dial tone, observers can enter any extension that they are authorized to observe. The following is a simple example of a Service Observing vector.

```
1.wait-time 0 seconds hearing ringing
2.collect 5 digits announcement 2300
  (“please dial your 5- digit security code”)
3.goto step 5 if digits = 12345
4.disconnect after announcement 2000
5.collect 1 digits announcement 2310
  (“enter 1 to observe sales, 2 to observe billing”)
6.route-to number 113001 with cov n if digit = 1
  (11=listen-only observe, 3001=”Sales” VDN)
7.route-to number 113002 with cov n if digit = 2
  (11=listen-only observe, 3002=”Billing” VDN)
8.goto step 5 if unconditionally
```

You can combine Call Prompting and Call Vectoring to provide security and to limit observation. See the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521, for information about creating a Service Observing vector.

## Service Observing indicators

Table 3-46 shows general Service Observing indicators that observers receive.

**Table 3-46. General indications to observer**

| Condition | Button lamp | Tone |
|---|---|---|
| Not active | Dark | None |
| Denied activation | Broken flutter | Intercept/busy/reorder |
| Activated | Steady/Winking | Confirmation tone followed by silence or connection to call. |
| Observing (listen only) | Steady | Hear call |
| Observing (listen/talk) | Winking | Hear/talk on call |
| In wait state | Flash | None |
| Denied observing | Flash (wait state) | Silence/ineligible tone followed by silence |

Table 3-47 through Table 3-49 show the indicators that observers receive when they activate and use Service Observing. In these tables:

- Wait state means that the observer has activated Service Observing but there are no calls or a call cannot be observed. A call appearance is not reserved. The observer must have an idle call appearance available to be used by Service Observing when an observable call comes in.
- Ineligible tone is heard when an observed call becomes ineligible for observation. See ‘‘Considerations’’ for conditions that make a call ineligible. This tone is the “hold confirmation tone”— a rapid series of 5 short 440-Hz beeps. The observer does not hear this tone if the agent receiving the ineligible call hears zip tone.

**Table 3-47. Feedback when activation denied**

| Condition | State | Lamp | Tone |
|---|---|---|---|
| No such extension | denied | broken flutter | intercept |
| Extension not observable | denied | broken flutter | intercept |
| Not allowed COR[1] | denied | broken flutter | intercept |
| Extension has Data Restriction | denied | broken flutter | intercept |
| Extension has Exclusion Active | denied | broken flutter | busy |
| Extension has Data Privacy Active on call | denied | broken flutter | busy |
| Extension already observed | denied | broken flutter | busy |
| Extension is an observer | denied | broken flutter | busy |
| Extension being busy-verified | denied | broken flutter | reorder |
| Extension has a 6-party conference | denied | broken flutter | reorder |
| COR doesn't allow SO activation | denied | broken flutter | intercept |
| Observe VDN not optioned | denied | broken flutter | intercept |
| Logical ID not logged In | denied | broken flutter | busy |
| Activation to logical with physical observed | denied | broken flutter | busy |
| Activation to physical with logical ID observed | denied | broken flutter | busy |
| Maximum VDNs being observed | denied | broken flutter | reorder |

1. Extension COR cannot be observed or COR for observer calling permission does not allow observing the COR of extension to be observed.

**Table 3-48. Feedback when activation allowed — at time of activation**

| Condition | State | Lamp | Tone |
|---|---|---|---|
| Active-eligible call | observing | steady/ winking | confirmation tone followed by connection to call |
| No active call | wait state | flash | confirmation tone followed by silence |
| Call ineligible | wait state | flash | confirmation tone followed by silence |
| Call has "No Observe" COR | wait state | flash | confirmation tone followed by silence |
| VDN call already being observed | wait state | flash | silence |

**Table 3-49. Feedback when activation allowed — after observe activated**

| Condition | State | Lamp | Tone |
|---|---|---|---|
| No active/eligible Call | wait state | flash | silence |
| Call in 6-party conference | wait state | flash | silence |
| Call already being observed | wait state | flash | silence |
| Call is being busy-verified | wait state | flash | silence |
| Call has Data Privacy active | wait state | flash | silence |
| Call has Data Restriction | wait state | flash | silence |
| Call has Exclusion Active | wait state | flash | silence |
| Active-eligible call (in listen-only mode) | SO listen | steady | hear call |
| Active-eligible call (in listen/talk mode) | SO listen/talk | winking | hear/talk on call |
| Press button while observing in listen-only mode | SO listen/talk | winking | hear/talk on call |
| Observer presses Release | not observing | dark | none |
| Call has “No Observe” COR | wait state | flash | silence |
| VDN call already being observed | wait state | flash | silence |
| No active eligible call | wait state | flash | silence |
| Eligible VDN call | observing | steady/ winking | hear call |
| Eligible VDN call (in vector processing) | SO listen | steady | hear call |
| Eligible VDN call (out of vector processing in listen-only) | SO listen | steady | hear call |
| Eligible VDN call (out of vector processing in listen/ talk) | SO listen/talk | winking | hear/talk on call |
| Press button while observing in vector processing | SO listen | steady | no change to mode |
| Press button while not in vector and in listen-only | SO listen/talk | winking | hear/talk on call |
| Call being observed becomes ineligible | wait state | flash | ineligible tone followed by silence |
| Active call disconnects | wait state | flash | silence |
| Logical agent logs out | denied | broken flutter | busy, then silence |
| Observer (without button) hangs up | deactivates observing | n/a | n/a |

While observing, the observer should press only the following buttons:

- Call Appearance
- Service Observing
- Position Busy
- Auto-ckt Assure
- Release (ACD) (This will end Service Observing)
- Bridged Appearance
- Auxiliary Work
- Queue Status (NQC, OQT, AQC, and AQT)
- System Night Service
- Hold (ignored)

## ⚠ SECURITY ALERT:

### General security

Use the following COR restrictions to prevent unauthorized observing.

- For the observer, set the `Can Be An Observer` field on the COR form to **y**.
- For the agent to be observed, set the `Can Be Observed` field on the COR form to **y**.
- For the observer, grant permissions to all CORs to be observed on the Service Observing Permissions COR table.

### VDN-call security

Use the following COR restrictions for VDN-call observing.

- For the VDN extension to be observed, set the `Can Be Observed` field on the COR form to **y**.
- For the VDN destination, set the `Can Be Observed` field on the COR form to **y**.
- Enter the VDN extensions to be observed in the observer's Service Observing Permissions COR table.

## Vector-initiated security

Use the following guidelines for vector-initiated observing.

- Use Call prompting commands in Service Observing vectors to provide passcode protection and limit access to specific destinations or vector-verified, caller-entered digits.
- Use Time of Day/Day of Week checks in Service Observing vectors.
- Create a vector used exclusively for Service Observing.
- If you use route-to commands to observe a VDN extension, ensure the extension has an observable COR.
- If the observer is observing locally, grant calling permission to the observer on the VDN's COR.

In vector-initiated Service Observing, the COR assigned to the VDN used to initiate Service Observing, the COR assigned to the internal caller extension, and the COR assigned to agent to be observed are used to determine if Service Observing will be allowed. If the agent's COR is not observable, observation fails regardless of the VDN or caller COR. When a call routes through multiple VDNs, the COR of the last VDN is used for calling/observing permissions regardless of VDN Override settings.

If you have administered the optional warning tone, the caller and the observer hear the tone only when the system connects the call to the answering or routed-to destination after vector processing is finished. The periodic tone is heard during the call even if the call is transferred off-switch. Use a warning announcement at the beginning of vector processing to inform the caller of observation since the system cannot give a warning tone until the call is out of vector processing.

## Remote-access security

Use the following guidelines for remote observing.

- Use Barrier Codes and Authorization Codes to limit the use of Remote Access to authorized users. Refer to *DEFINITY ECS Administrator's Guide*, 555-233-506, for information about these codes and other Remote Access security measures.
- Use different Authorization Codes for different Service Observing permissions.
- Use Facility Restriction Levels (FRLs) and restrictions such as the Authorization Code COR to restrict Remote Access service observer access to other destinations (for example, stations or trunks).
- Use Call Prompting to create additional access security.

Assign the VDN, Barrier Code, and Authorization Code calling and Service Observing permissions and set Can Be Observer to yes on the associated COR form. The last COR encountered is used to determine observer permissions.

## Considerations

### Observability

Although an agent can be a member of multiple splits/skills, an agent can be observed by only one observer at a time. If two agents with different supervisors are observed and one agent calls the other, the originator's supervisor observes the call, and the other supervisor is placed in the wait state.

An attendant can be observed but *cannot* be an observer.

### Ineligibility

A call to an agent extension or VDN is ineligible for observing when the call:

- Is already being observed
- Is being busy-verified
- Has Data Privacy active
- Has Data Restriction active, is conferenced with an extension that has Data Restriction active, or is a VDN call that reached an extension that has Data Restriction active
- Has Privacy — Manual Exclusion active, is conferenced with an extension that has Privacy — Manual Exclusion active, or is a VDN call that reached an extension that has Privacy — Manual Exclusion active
- Is in a conference where adding the observer results in more than 6 parties (see ''Conferenced calls'' for more detail on conferences)
- Is a VDN-observed call that reaches an unobservable extension or VDN. (Note that the COR of the hunt group split/skill used to distribute the call to the station/agent is not checked. The CORs of stations/agents conferenced with the call are not checked.)

### Trunk calls

If an agent being observed makes an trunk-call, observation starts after the agent finishes dialing. For central office (CO) trunks, dialing is considered complete when answer supervision is returned or when answer supervision timeout occurs.

### Multiple observers

Multiple observers can observe a single VDN simultaneously, but only one observer is observing a given call to the VDN. There is no limit to the number of observers observing a single VDN as long as the total number of observers actively observing VDNs does not exceed 50.

## Conferenced calls

An observer cannot initiate a conference while observing.

If an observed agent conferences a call and the number of conferenced parties is less than 6, the observer is placed in the wait state until the call is connected. Then the observer observes the conference. In addition, the observer is bridged onto any call on which the agent becomes active before the conference is complete. When the conference is complete, the observer is again bridged onto that call.

If an observed agent conferences a call and the number of conferenced parties (including the observer) is 6, the conference is denied.

A call to an observed VDN cannot be monitored if the observer, caller, and other parties bridged onto the call constitutes more than 6 parties.

If a conference is being observed because an observed agent entered the conference, when the agent hangs up, the conference is no longer observed. If a conference is being observed because an observed VDN call entered the conference, observing continues until the call is routed to an unobservable destination.

Conference members are observed during a conference regardless of their COR setting.

If a VDN call being observed is conferenced to an agent call being observed, the VDN observer continues to observe and the agent observer goes into wait state. If two observers (of either VDN or agent calls) are conferenced to a call, the first observer conferenced-in continues to observe and the second observer goes into the wait state. VDN or agent call observers hear the ineligible tone before going into wait state.

The same rules apply when multiple observers monitor transferred calls.

## Transferred calls

Observers cannot initiate a transfer while observing.

If an agent being observed transfers a call, the observer is placed in wait state. The observer is bridged on after the transfer is complete.

A VDN observer continues to monitor the transferred call until it is transferred or routed to a unobservable destination.

## Interactions

- ASAI (Category A only)

  A call to an observed VDN continues to be observed after it routes to an adjunct. A call can be routed to a Service Observing FAC by the adjunct routing command in the same way that it can be with the route-to command.

- Assist

  A VDN observer continues to observe a call during an assist operation. The observer observes the caller on hold and the conference, when the agent conferences the assist call with the VDN call.

- BCMS

  BCMS does not report on Service Observing. BCMS reports show normal measured-call and agent activity related to Service Observing calls. When a physical agent (non-EAS) is observed, the BCMS Report By Login ID shows the physical extension along with the login ID.

- Bridged appearances

  If an observer observes agent extension 3082, the observer is bridged onto calls only to 3082. If the agent with extension 3082 has a bridged appearance for extension 3282, calls to extension 3282 are not observed. Although extensions 3082 and 3282 have a call appearance on the same telephone, the observer cannot observe both extensions at the same time.

- Busy-verification

  An observer cannot observe an agent call that is bridged onto by busy-verification. Also, an agent's call that is being bridged onto by an observer cannot be busy-verified.

- Call Coverage/Call Pickup

  An observer cannot observe a call answered by a covering agent or member of a pickup group until the called agent bridges onto the call. The observer continues observing a call to an observed VDN call if the call is routed to a destination that forwards the call (via Call Coverage, Call Forwarding, or Call Pickup).

- Call Park

  An observer cannot park a call while observing the call. An observer observing a VDN continues observing after a call is parked.

- Call Waiting

  A call cannot wait on a single-line phone that is being observed.

- Call Work Codes/Integrated Directory

  The observer does not hear agent dialing with these features because the digits are passed to the switch in S-channel messages.

- CMS (Category A only)

  When an observer is bridged onto a VDN call, CMS is notified.

- Conference and Transfer

  A VDN observer who is bridged on a call follows the call on a conference and/or transfer operation.

- Converse Command (Category A only)

  Converse-split extension ports can be observed as physical extensions. A call to an observed VDN continues to be observed if the call is answered by a VRU through the converse command.

- Converse-on Vector Command

  Calls connected by the converse-on command are not observed by the VDN observer when the “Observe on Agent Answer option is set to y. If the call is subsequently answered at an agent station or other destination via the route-to command, the VDN observer is bridged on the call.

- DCS (Category A only)

  To observe stations on another node (a DCS station extension), you must set up remote-access service observing. A DCS station can only observe another node using remote service observing. Service observing displays are not supported across DCS.

- Dialed Number Identification Service

  Observing by VDN provides monitoring by DNIS since the VDNs represent the DNIS of the service dialed.

- Direct Agent Calling (Category A only)

  A Direct Agent call to a logical-agent ID is monitored by observing the Logical Agent not by monitoring the physical extension.

- Hold

  Observers cannot place calls on hold while observing.

  If an observed agent places a call on hold, the observer is put in wait state. A VDN observer continues to monitor the caller placed on hold.

- Leave Word Calling

  Parties on an observed call cannot use LWC.

- Look Ahead Interflow (Category A only)

  If an observed VDN call routes to another location via Look Ahead Interflow, the call continues to be observed. The observer hears a warning tone, if administered at the sending switch, when the call arrives at the receiving switch. The observer continues to hear the periodic tone while observing the VDN call.

- Manual Answer

  VDN observers are bridged on to the call when the agent answers the call that has been ringing the ACD agent extension with the “Observe on Agent Answer” set to y.

- Move Agent/Change Skills

  Moves or changes of physical of logical agents being observed occur according to the move or change rules. Observing continues.

- Multiple Call Handling

  While an agent extension or logical ID is observed, only the active call is monitored. If all calls are put on hold, the observer hears silence.

- Music-on-Delay/Music-on-Hold

  If an observer is in listen/talk mode, neither caller nor observer hears music-on-hold. If an observer is in listen-only mode, the caller hears music-on-hold, but the observer does not. A VDN observer hears music provided to the caller.

- Night Service

  A VDN observer continues to observe when a call routes to night service.

- Recorded Announcement

  A VDN observer continues to monitor a call connected to an announcement. A Verify Announcement call placed by an observed physical or logical agent can also be observed.

- Redirection on No Answer

  A VDN observer continues observing a call after it is redirected or rings “in limbo”.

- Route-to Number Vector Command

  Calls connected by the route-to number command are observed by the VDN observer after “answer” is received or assumed when the “Observe on Agent Answer” option is set to y. this includes routing to internal destinations (stations, hunt groups, ACD splits/skills, the attendant, etc.) or to external destinations (via trunk facilities.

- Trunks without disconnect supervision

  Service observing cannot be activated over no-disconnect-supervision trunks. The caller hears denial indication.

- VDN of Origin Announcement (VOA)

  VDN observers with the “Observe on Agent Answer option set to y are not bridged on the call until after the VOA is given to the agent. Therefore, the observer does not hear VOAs.

- VDN Return Destination (Category A only)

  You can create a prompting VDN with a return destination assigned so that, if you activate observing and it fails or the denial indication times out, the prompting VDN allows you to retry activation. This is true only if the denial and disconnection occur after the call leaves vector processing.

  If a vector step fails, the system proceeds to the next vector step. Disconnect or busy commands cause calls to be dropped and do not trigger return destination.

  When return destination is triggered, the call is monitored through each return destination operation until the caller disconnects.

  The observer bridged on the call follows the call when the VDN Return Destination feature, active on the VDN, redirects the call back through vector processing after the agent releases the call.

- Telephone displays

  The display for local observers match exactly what is displayed on the observed physical or logical agent's telephone display. For example:

  ```
  a="3035001234 to Sales SO"
  ```

  While observing a VDN, an observer sees displayed the name of the VDN being observed while in vector processing. After the call leaves vector processing, the name of the agent or trunk group that the call is connected to is displayed.

- VuStats (Category A only)

  Nonremote observers using 2-line displays can activate VuStats for an agent. An observer must activate VuStats before using Service Observing. The agent's statistics appear on the second line of the observer's display.

- Zip tone

  VDN observers do not hear the zip tone that the answering agent hears.

# Universal Call ID

Universal Call ID (UCID) is a unique tag assigned to a call.

In simple call scenarios, the tag stays with that call within a network that is based on the DEFINITY connected by ISDN lines. In complex call scenarios, the tag often merges with other tags.

**NOTE:**
The UCID data element is “universal” because it does not just identify a call on one particular DEFINITY switch; a UCID uniquely identifies a call across a network of DEFINITY switches.

## What is UCID’s purpose?

The purpose of UCID is to tag a call with a unique identifier.

UCID provides a way to track calls across multiple DEFINITY switches and Voice Response Units (INTUITY Conversant for the DEFINITY ECS R6.3 and newer).

Call centers can use UCID to track call history. Because UCID can uniquely identify every call in a network of any size, it possible to track call-related data from multiple sources (the DEFINITY and INTUITY Conversant) and multiple sites. For example, you can combine data from many locations and print reports that enable you to track a call throughout its lifecycle. For information about such reports, refer to *CentreVu CMS Reports*, 585-210-929.

**NOTE:**
Although UCID is intended for call centers, a DEFINITY configured to create UCIDs will assign one to *every* call—not just to Automatic Call Distribution (ACD) calls.

## What does UCID look like?

The Universal Call ID is an 8-byte data element that displays as a 20-character number. It looks something like this:

```
01035051001071518260
```

## How does UCID work?

For every new call that comes into or is originated by the DEFINITY or Conversant product, the product creates a UCID. Depending on the call scenario, the UCID will either remain unique to that call or merge with other UCIDs.

### What creates UCIDs?

Both the DEFINITY and the Conversant can create UCIDs once the capability has been enabled. In other words, neither product automatically creates UCIDs until the feature is enabled.

### When are UCIDs created?

Once the DEFINITY or the Conversant is administered to create UCIDs, these products assign a UCID to each call. For incoming calls over ISDN trunks, the DEFINITY determines whether or not the call already has a UCID. If so, the switch preserves the existing UCID and does not create a new one. If the call does not have a UCID, the switch creates one when call processing begins. For incoming calls over non-ISDN trunks, the DEFINITY creates a UCID for the call because non-ISDN trunks do not support the transmission of UCID.

For outgoing calls, the DEFINITY creates a UCID when the caller goes off-hook.

### How are UCIDs transmitted?

How DEFINITY transmits UCIDs depends on the sending and receiving equipment. See Table 3-50 for an overview.

**Table 3-50. UCID transmission**

| Sender | Receiver | Connection | UCID contained in |
|---|---|---|---|
| DEFINITY | DEFINITY | ISDN (BRI or PRI) trunks using QSIG service protocol | codeset 0 Facility IE as manufacturer specific information (MSI) IE[1] |
| DEFINITY | DEFINITY | ISDN (BRI or PRI) trunks using Shared UUI service protocol | codeset 0 shared user-to-user information (UUI) IE[1] |
| DEFINITY | INTUITY Conversant | ASAI | various ASAI messages |
| INTUITY Conversant | DEFINITY | ISDN-PRI | codeset 0 shared UUI IE[1] |
| DEFINITY | CentreVu CMS | BX.25 | SETUP5 CMS message |
| DEFINITY | CTI adjunct | ASAI | various ASAI messages |

1. Refer to Information Forwarding (Category A only) section.

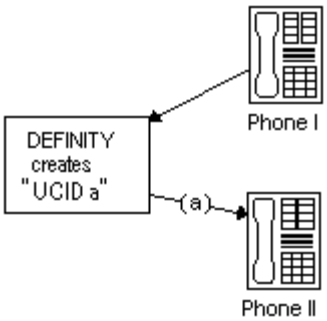
## How are UCIDs tracked?

The way a network maintains and tracks a UCID depends on the call path. To illustrate UCID transport throughout a call's life cycle, this section describes several call scenarios:

- Station-to-station Calls
- Incoming Trunk Calls
- Outgoing Trunk Calls
- Simple Transfer or Conference
- Complex Transfer and Conference

### Station-to-station calls

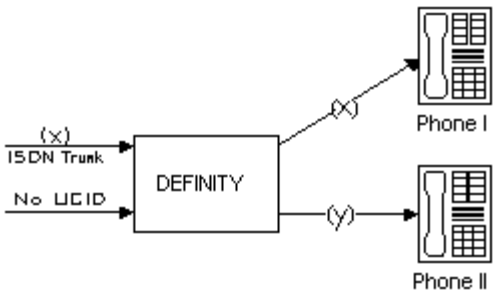
This scenario describes what happens when Phone I calls Phone II (both phones are on the same switch).




The DEFINITY ECS creates a new UCID (such as UCID "a") for any call originated by an internal station user.

### Incoming trunk calls

UCID is assigned to an incoming call.



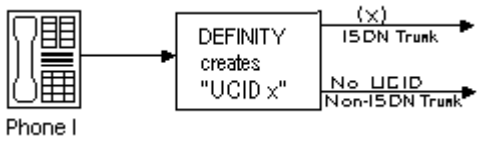
The DEFINITY ECS either

- receives UCID **x** information from an incoming call over an ISDN trunk.
- creates UCID **y** for incoming calls that do not already have a UCID.

There is one CMS call history record for each incoming call.

## Outgoing trunk calls

UCID is associated with the outgoing trunk call from Phone I.




The DEFINITY creates a UCID (such as UCID **x**) for an outgoing trunk call and then sends it over an outgoing shared UUI or QSIG ISDN trunk.

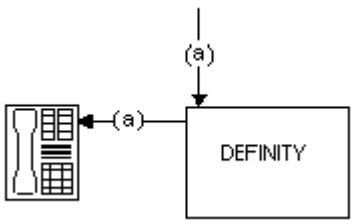
The DEFINITY creates a UCID (such as UCID **x**) for an outgoing trunk call even if the trunk (such as a non-ISDN trunk) does not support the transmission of a UCID.

## Simple transfer or conference

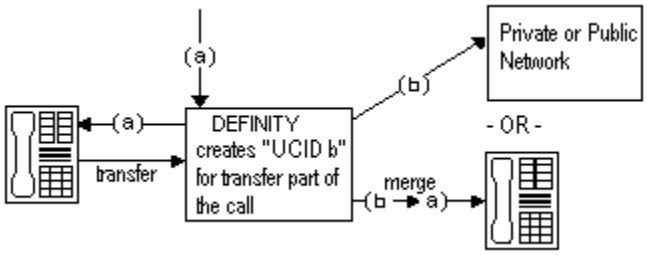
This scenario describes a simple transfer or conference call scenario.

When an incoming trunk or station call is received by the station user at Phone I and transferred to or conferenced with another station user or outside party:

1. The DEFINITY creates a UCID for the incoming call if it needs one.



2. The DEFINITY creates a new UCID for the temporary conference or transfer portion of the call.




3. The DEFINITY merges the temporary portion of the call with the original call when the conference or transfer is completed within the DEFINITY ECS. This is when the overriding UCID (such as UCID “a”), becomes the UCID for all parties within the DEFINITY.

**NOTE:**
If the outgoing trunk does not support the sending of UCIDs, then the UCID of the outgoing call at the receiving switch will be “null”.

If the call is transferred to another switch, only the UCID for the transfer (UCID “b”) gets passed on. This is because the DEFINITY cannot merge UCIDs if the call is not completed within the switch.

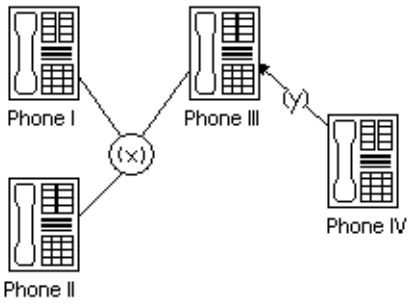
**NOTE:**
If, during the conference or transfer, the incoming call drops before the operation is complete, the two UCIDs will not appear to be associated because no merge of the two parts of the call was done.

## Complex conference

The following complex call scenario illustrates when a station user adds an incoming call to an existing conference.

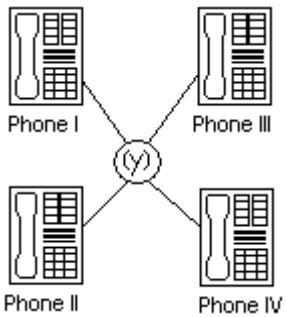
In this scenario,

1. Phones I, II, and III are in the same conference call with UCID “x”.
2. The person at Phone III receives an incoming call from Phone IV (this call has UCID “y” associated with it).




3. The person at Phone III puts the conference call on hold and answers the incoming call from Phone IV.
4. The person at Phone III decides to add Phone IV into the conference call.
5. The person at Phone III
   a. presses the Conference button
   b. presses the call appearance button to return to the conference call
   c. presses the Conference button again.

   This brings the conference call into the call between Phones III and IV.
6. UCID “y” overrides UCID “x” because the DEFINITY ECS views Phone IV as the primary party in the conference initiated by step 5.




7. The UCIDs associated with each segment of the complex conference are sent to CMS if the parties in the call are measured (for this example, if the parties are ACD agents in a measured split/skill).

## Configuration — switch before INTUITY Conversant

The following scenarios describe what happens to UCID information when a call comes in to the switch before it goes to INTUITY Conversant. In this configuration, the INTUITY Conversant serves as a Voice-Response Unit (VRU) that controls the routing of incoming ACD calls.

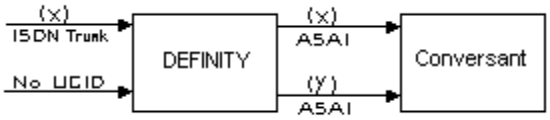
**NOTE:**
This configuration is more common than a call coming in to INTUITY Conversant before reaching the DEFINITY.

This section describes two scenarios:

- Simple call tracking
- Conversant transfers a call

### Simple call tracking

The following call scenario describes when a call comes in to the DEFINITY before INTUITY Conversant.



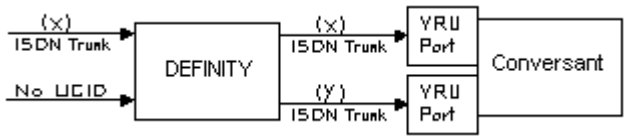

When the switch is before INTUITY Conversant:

1. The switch receives an incoming call over an ISDN trunk.
2. The switch does one of two things:
   - If the incoming call has a UCID (such as UCID “x”), then the switch passes it along.
   - If the incoming call does not have an associated UCID, the switch creates a new one (such as UCID “y”).
3. The switch passes the UCID to INTUITY Conversant through an ASAI connection (via the activation of split/skill or VDN “event notification” by the INTUITY Conversant).
4. UCID information is sent to the CMS if trunk, VDN(s), and/or split/skill(s) involved in the call are measured.

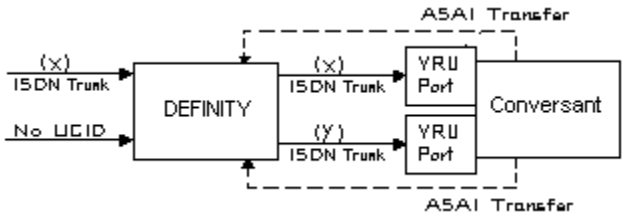
### INTUITY Conversant transfers a call

The following call scenario involves a Conversant behind the DEFINITY configuration when Conversant initiates a call transfer after the call is answered by a port on the INTUITY Conversant that serves as an ACD agent.

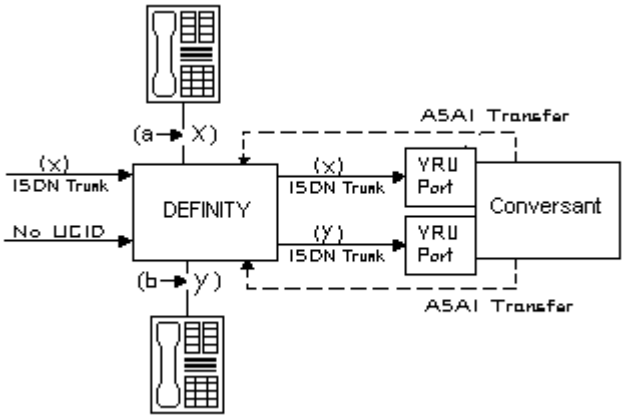
1. Call is directed to INTUITY Conversant VRU port (typically by call vectoring) with UCID information (UCID “x” or UCID “y”).




2. INTUITY Conversant determines the call’s destination and transfers the call (via an ASAI “third-party transfer” operation).




3. The switch temporarily creates a new UCID (such as UCID “a” or UCID “b”) for the transfer portion of the call (the original UCID is quickly merged into the call).

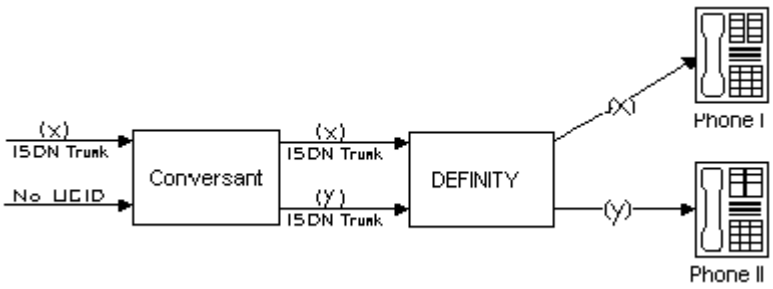



4. The UCIDs of the transfer segment and merged call are returned to INTUITY Conversant in ASAI acknowledgment messages.
5. The switch sends UCID information to CMS if trunk, VDN(s), and/or split/skill(s) involved in the call are measured.

## Configuration — INTUITY Conversant before the switch

This scenario illustrates a system configuration where a call comes in to INTUITY Conversant before reaching the switch. In this configuration, INTUITY Conversant provides voice response services and/or call screening so that the number of incoming calls to the switch is reduced.

**NOTE:**
This configuration is less common than the switch before INTUITY Conversant configuration.




When INTUITY Conversant is before the switch:

1. INTUITY Conversant receives an incoming call with UCID “x”.

   **or**

   INTUITY Conversant creates a new UCID “y” and associates it with the incoming call (if the call has no UCID already associated with it).

   **NOTE:**
   For INTUITY Conversant to recognize an incoming UCID (such as UCID “x”) from an ISDN trunk, special INTUITY Conversant scripting is required. When INTUITY Conversant receives a call from the public network, it automatically creates a new UCID because it cannot recognize whether or not the call already has a UCID.

2. INTUITY Conversant sends UCID to the DEFINITY ECS over an ISDN-PRI trunk.
3. The switch receives UCID and reuses it for the incoming call.
4. The switch reports UCID to the CMS if the trunks, VDNs, and/or splits/skills associated with the call are measured.

## Interactions

- Distributed Communications System (DCS)

  If DCS is used in a network of switches where UCIDs are tracked, the DCS feature must be configured with ISDN trunks having the Shared UUI service protocol. Otherwise, calls that are handled through one of the many DCS features (such as DCS Coverage) will not retain the UCID initially assigned to the call.

- Remote AUDIX

  For remote AUDIX over DCS, the DCS trunk(s) used to accomplish the remote AUDIX operation must be configured (as described previously in "Distributed Communications System") to retain the UCID associated with a call.

- Tandem Calls

  When a call is tandemed through the DEFINITY ECS, the UCID information may be blocked or passed through the tandem switch. To pass a UCID through a tandem switch, both the incoming and outgoing trunks at the tandem switch must be configured to handle UCIDs. See ''Information Forwarding (Category A only)'' for proper private and public network information forwarding administration.

## Before you start

Before you start to administer the UCID feature, be aware that UCIDs are successfully transmitted only when all of the DEFINITY network components meet the requirements (software and connections) specified below.

Some requirements vary, depending on how you want to use UCID. Table 3-51 shows the requirements for different applications of UCID.

**Table 3-51. Requirements for UCID applications**

| What do you want to do? | Your system must meet the following software requirements… | Your system must have the following connections… |
|---|---|---|
| Have DEFINITY create UCIDs | DEFINITY R6.3 or newer | |
| Have DEFINITY send UCID to another DEFINITY | DEFINITY R6.3 or newer | ISDN (BRI/PRI) trunks with Shared UUI or QSIG service protocol |
| Have DEFINITY send UCID to CONVERSANT | DEFINITY R6.3 or newer<br>CONVERSANT 7.0 or newer | ASAI link to CONVERSANT |

*Continued on next page*

**Table 3-51. Requirements for UCID applications (Continued)**

| What do you want to do? | Your system must meet the following software requirements… | Your system must have the following connections… |
|---|---|---|
| Have DEFINITY receive UCID from CONVERSANT | DEFINITY R6.3 or newer<br>CONVERSANT 7.0 or newer | ISDN-PRI connection (with shared UUI) between switch and CONVERSANT |
| Have DEFINITY send UCIDs to CMS | DEFINITY R6.3 or newer<br>CMS R3V6 or newer | BX.25 connection from switch to CMS |
| Have DEFINITY send UCIDs to a CTI Application | DEFINITY R6.3 or newer<br>T-Server R3.1.0 or newer<br>DEFINITY PBX Driver (G3PD)- R3.1.0 or newer<br>CallVisor PC V6 or newer | ASAI link to adjunct |

**NOTE:**
You can check your software version numbers by typing **list config software** at the SAT terminal. Because "R6" (Release 6) includes 6.1 through 6.3, you may have to check that your network has the separate 6.3 upgrade (this is the earliest version of the DEFINITY ECS software to support UCID).

To maximize the benefits of UCID, it is recommended that all switches be configured with the DEFINITY ECS R6.3 (or newer) software. However, because upgrading a network is often a gradual process, there may be a switch that cannot yet support UCIDs. In this environment, disallow the UCID transmission for any trunk group connected to a pre-DEFINITY ECS R6.3 switch. For information about enabling or disabling UCID transmission on a trunk group, see ''Administering UCID'' later in this chapter.

In the case of a DEFINITY network component that cannot support UCIDs, it is recommended that the component (ISDN trunk group, ASAI connection, or CMS software) be administered to disallow the sending or receiving of UCID. For example, if a DEFINITY ECS is connected to a non-Avaya switch, then the connecting ISDN trunk must be administered to not send UCID over that trunk for outgoing calls.

## Administering UCID

These instructions assume you're using the SAT (System Administration Terminal) screen or a terminal emulator to access the switch software.

There are three tasks involved in administering UCID on the switch. Complete these tasks in the following order:

Task A. Check ASAI Interface before enabling UCID

Task B. Set the switch to create and send UCIDs

Task C. Enable UCID Transmission on Trunk Groups

### Task A: Check ASAI interface before enabling UCID

If this procedure is not performed, you may encounter the "ASAI Interface feature not assigned" error message in later steps.

**Table 3-52. Required forms to check ASAI interface**

| Form | Field | Why? | Optional? |
|---|---|---|---|
| Optional Features | ■ ASAI Interface | Global setting to send UCIDs to ASAI | Y |

To check the ASAI interface:

1. In the command line, enter **change system-parameters customer-options** and press RETURN.
2. On page 1, enter **y** in the `ASAI Interface` field.
3. Log out and log back in if this and any other fields in this form have changed.

## Task B: Set the switch to create and send UCIDs

You must administer each switch that you want to create UCIDs. If you do not administer a switch, it will pass along an already-created UCID, but it won't create one if a call comes to it first.

**Table 3-53. Required forms for the switch to create and send UCID**

| Form | Field | Why? | Optional? |
|---|---|---|---|
| Feature-Related System Parameters | ■ Create Universal Call ID (UCID)? | To generate a UCID for each call when necessary. | N |
| | ■ UCID Network Node ID | Important component of the UCID tag. | N |
| | ■ Send UCID to ASAI? | So that ASAI receives UCIDs. | Y |
| | ■ Adjunct CMS Release | So that CMS receives UCIDs. | Y |

For the switch to create and send UCIDs:

1. If your network includes CMS and you want CMS to track UCIDs, then enter **busyout mis** in the command line. If not, go to step 2.
2. In the command line, enter **change system-parameters feature** and press RETURN.

   The Feature-Related System Parameters form comes up.
3. Go to page 4 of the form.
4. In the `Create Universal Call ID (UCID)?` field, enter **y**.
5. In the `UCID Network Node ID` field, enter the node ID number.

   Valid numbers are from 1 to 32,767.

   **CAUTION:**
   *The UCID Network Node ID **must** be unique for every switch and Conversant in the system. If it is not unique, the integrity of the UCID is compromised.*
6. If your network includes ASAI, go to page 7 of the form. If not, go to step 8.
7. In the `Send UCID to ASAI?` field, enter **y**.
8. If you have performed the **busyout mis** command, go to step 9. If not, you are done with this task (Task b), so press ENTER to save your work and go to Task c.
9. Go to page 8 of the form.
10. In the `Adjunct CMS Release` field, enter **R3V6**.
11. Press ENTER to save your work.
12. In the command line, enter **release mis**.

## Task C: Enable UCID transmission on trunk groups

When you send UCIDs over ISDN trunks, it is administered on a trunk group basis. Table 3-54 provides the form and field information that you need to perform this task.

**Table 3-54. Required forms to enable UCID transmission on trunk groups**

| Form | Field | Why? | Optional? |
|---|---|---|---|
| Trunk Group | Group Type | To specify correct trunk type: ISDN is the only type that supports UCID. | N |
| | Supplementary Service Protocol | Specify correct service type. **b** is for QSIG, others are for UUI. | N |
| | Send UCID? | Allows or blocks UCID transmission. | N |

To enable UCID transmission on a trunk group:

1. In the command line, enter **change trunk-group n** and press RETURN**.**

   The Trunk Group administration form comes up. *n* is the number of the trunk group you want to administer.

2. On page 1, enter **ISDN** in the Group Type field.

3. In the `Supplementary Service Protocol` field, enter the letter of the service protocol you want for this trunk group.

   **b** is for QSIG, other protocols are for UUI.

4. Go to page 2 of the form.

5. In the `Send UCID?` field, enter **y**.

6. Press ENTER to save your changes.

You also need to administer your trunk groups to send user data over your private and public networks. To administer the trunk groups, see ‘‘Information Forwarding (Category A only)’’.

## Considerations

— UCID has been tested with several major carriers. To find out if these capabilities work with your carrier, check with your account team for the most current information. If testing has not been done to verify operation over the public networks involved with the preferred specific configuration, use of private ISDN trunking between the nodes should be assumed until successful testing has been completed.

## Troubleshooting

The following troubleshooting hints should be reviewed when UCIDs are not transmitted, even though you received no error messages while administering the UCID feature, and all software and connections meet the minimum requirements:

— A tandem switch has the `Send UCID?` option set to **y** for all trunk groups that AAR/ARS or station users may use to tandem an incoming call.

— If DCS is used, make sure *all* ISDN trunks between the switches used for DCS or remote AUDIX are configured in the D-channel mode.

— For CMS tracking purposes, make sure all trunks, VDN, and split/skills that handle calls for which UCIDs are tracked are administered as “measured” (either “both” or “external”).

# VDN in a Coverage Path

VDN in a Coverage Path (VICP) enhances Call Coverage and Call Vectoring. If Basic Call Vectoring or Call Prompting is enabled on your switch, you can assign a Vector Directory Number (VDN) as the last point in a coverage path. Calls that reach this coverage point can be processed by a vector or by Call Prompting.

## Administering VICP

**Table 3-55. Required forms**

| Form | Field |
|---|---|
| Coverage Paths | ■ All |
| Call Vector | ■ All |
| Vector Directory Number | ■ All |

- Call Coverage Path form — Set one of the following to the extension of the VDN you want to use as a coverage point: Point 1, Point 2, Point 3, Point 4, Point 5, Point 6.

## Considerations

Once a call has covered to a VDN, it cannot be further redirected by features such as Call Coverage, Call Forwarding, or Night Service.

A VDN is not allowed to be a member of a coverage answer group. A vector cannot route a covered call to a coverage answer group — a coverage answer group can only be a point in a coverage path.

Removing a VDN from the system with the *remove vdn <extension>* command automatically removes the VDN from any coverage paths.

## Interactions

- AAR/ARS Partitioning

  The class of restriction assigned to the VDN determines the partition group number (PGN). The PGN in turn determines the AAR or ARS routing tables used by *route-to* commands.

- ASAI (Category A only)

  For direct calls to a VDN, the *adjunct routing* command operates like the command *route to digits with coverage=y*. For calls that cover to a VDN, however, the *adjunct routing* command operates the same as a *route to digits with coverage=n* command. Since calls redirected once to coverage should not be redirected again, the coverage option is disabled for the *adjunct routing* command in this situation.

- Attendant

  A call covering to a VDN can be connected to an attendant queue or hunt group by a vector. Internal calls that route to an attendant display the class of restriction of the originating station if the attendant presses the “display COR” button.

  An attendant cannot establish a conference with a call covering to a VDN if the call is in vector processing. If a call placed to a local destination has covered to a VDN and the attendant attempts to add this call to a conference, the conference will be denied until the call has completed vector processing.

  An attendant-extended call that covers to a VDN will not return. If the attendant extends a call to a local destination that covers the call to a VDN, the attendant’s return call timer is canceled when vector processing begins and the Return Call button will not affect the call.

  If a call covers to a VDN and is then routed to an attendant, the attendant can transfer the call to another VDN.

- AUDIX

  Calls that cover to a VDN can be routed to an AUDIX by the *route-to* or *messaging* vector commands. Calls that cover to a VDN may be subsequently transferred to AUDIX. Calls may also be transferred out of AUDIX to a VDN.

- Automatic Call Distribution (ACD)

  A VDN can be the last point in an agent’s coverage path for direct agent calls.

- Call Coverage

  A VDN cannot be a member of a coverage answer group. A vector cannot route a covered call to a coverage answer group.

  Calls that have covered to a VDN cannot be redirected again by Call Coverage.

  Coverage Callback and Leave Word Calling work normally when a vector delivers a call to a covering user.

- Call Forwarding

  Calls that have covered to a VDN cannot be redirected by Call Forwarding.

- Call Park

  A parked call will not cover to a VDN. When a call is parked at an extension with a VDN in its coverage path, the call will continue ringing the extension. If the call is parked to a hunt group extension and the call is in queue, the call will remain in the queue until it is retrieved, or answered by an agent, or abandoned by the caller. A vector event is generated for these calls when the administered coverage criteria are met.

  Once a call covers to a VDN, Call Park cannot be established until the call is delivered to an extension and vector processing ends.

- Call Vectoring

  The class of restriction assigned to a VDN determines the partition group number (PGN). The PGN in turn determines the AAR or ARS routing tables used by *route-to* commands.

  When a call covers to a VDN, VDN override has no effect on the display shown on an answering display. This station will show the normal display for a covered call.

  **adjunct routing (Category A only):** For direct calls to a VDN, the *adjunct routing* command operates like the *route to digits with coverage=y* command. For calls that cover to a VDN, however, the *adjunct routing* command operates the same as a *route to digits with coverage=n* command. Calls redirected once to coverage should not be redirected again, however, so in this situation the coverage option is disabled for the *adjunct routing* command.

  **converse (Category A only):** Covered calls to a VDN work with the *converse* command. If a call in vector processing is connected to an agent in a "converse split," the agent cannot activate Consult, Coverage Callback, or Coverage Leave Word Calling.

  **messaging:** The *messaging* command handles covered calls differently depending on whether an extension is specified in the command. If the command *messaging split xxxx extension none* is used, the mailbox of the principal extension is used for the call. The number of the principal extension and the reason for redirection are passed to the messaging adjunct in the CONNECT message.

  When an extension is specified in the *messaging* command, no information about the principal extension is passed to the adjunct. Instead, the number of the extension specified in the command is passed to the adjunct in the CONNECT message along with the reason for redirection. The mailbox for the specified extension is used.

  **route-to:** A call covering to a VDN can be routed to any valid destination by the call vectoring command *route-to*. The coverage option for the *route-to digits* command is disabled for covered calls. In other words, the *route-to digits with coverage=y* functions like the r*oute-to digits with coverage=n* command when processing covered calls. When the *route-to* command terminates a covered call locally, information identifying the principal and the reason for redirection are retained with the call. This information can be displayed on display phones or passed to an AUDIX or Message Center system.

- Class of Restriction (COR)

  The COR assigned to the covering VDN governs the vector routing of the call.

- Conference

  Calls in an established conference will not cover to a VDN.

  Once a call covers to a VDN, a conference cannot be established until the call is delivered to an extension and vector processing ends.

- Consult

  The Consult feature normally uses a Temporary Bridged Appearance on the principal's set. Call coverage to a VDN removes the Temporary Bridged Appearance from the principal's set, but the Consult feature still works.

- Hunt Groups

  A VDN can be the last point in a hunt group's coverage path. If the coverage vector for a split or hunt group routes calls to another via a *route-to* or *messaging* command, calls will queue at the second resource with the queue priority assigned for the first split or hunt group. If a *queue-to*, *check*, or *converse* command is used, calls will queue at the second split or hunt group with the priority specified in the command.

  If an inflow threshold has been assigned to a hunt group, the group will not allow new calls to queue when the oldest call in queue has exceeded the threshold. Therefore, covered calls are not connected to a hunt group when the group's inflow threshold has been exceeded. Note that this interaction can also occur when a *messaging split* or *route-to* command routes a covered call to a split that isn't vector-controlled.

- Look-Ahead Interflow (Category A only)

  For calls that have covered to a VDN, LAI works like a *route-to digits/number with cov=n* vector command. Any Dialed Number Identification Service (DNIS) digits sent with the interflowed call will indicate the VDN to which the call covered, not any VDN the call encountered before it went to coverage.

- Night Service

  Calls that have covered to a VDN cannot be redirected by Night Service.

- Personal CO lines (PCOL)

  A VDN may be assigned as the last point in a PCOL coverage path.

- Phone Display

  Calls covering to a VDN and then directed to an agent in a split or hunt group by a *queue-to*, *check*, *converse*, or *route-to* command display the following information to the agent:

  ```
  a=EXT 3174   to   EXT 3077     b
  ```

  In this example, station A called station B. Station B was busy, and the call covered to a VDN.

- Redirection on No Answer (RONA)

  RONA applies to calls that cover to a VDN. If the vector associated with the VDN queues the call to a resource (for example, a split or agent) that uses RONA, the call can be requeued for the same resource. The call cannot be redirected, however, since it has already covered to the VDN.

- Terminating Extension Groups

  A VDN may be assigned as the last point in the coverage path for a Terminating Extension Group.

- Transfer

  Calls may be transferred to extensions that cover to a VDN. Users who receive a covered call may transfer it to a VDN. If a transfer attempt goes to coverage and covers to a VDN, the user at the answering station can complete the transfer by pushing the Transfer button (or by flashing the switchhook on an analog station).

  Calls that cover to a VDN may be subsequently transferred to AUDIX. Calls may also be transferred out of AUDIX to a VDN.

# VDN of Origin Announcement (Category A only)

VDN of Origin Announcement (VOA) provides agents with a short message about a caller's city of origin or requested service based on the VDN used to process the call.

Use VOA messages to help agents to respond appropriately to callers. For example, if you have two 800 numbers, one for placing orders and one for technical support, you can administer two VDNs to route calls to the same set of agents. When an incoming call is routed to a VDN with a VOA assigned (for example, "new order" or "tech help"), the VDN routes the call to a vector, which can place the call in an agent queue. When an agent answers the call, he or she hears the VOA message and can respond appropriately to the caller's request.

## Administering VOA

**Table 3-56. Required forms**

| Form | Field |
|---|---|
| Attendant Console | ■ Feature Button Assignments — VOA Repeat |
| Class of Restriction (COR) | ■ VDN of Origin Announcements |
| Feature-Related System Parameters | ■ Hear Zip Tone Following VOA? |
| Announcements/Audio Sources | ■ All |
| Vector Directory Number | ■ VDN of Origin Annc. Extension |
| Phones | ■ Feature Button Assignments — VOA Repeat |

- Announcements/Audio Sources — Assign each VOA you want to use. You can administer aux-trunk types with queue, without queue, and with barge-in. You can administer integrated types with queue and without queue. Do not administer analog and integrated repeating announcement types as VOAs.

The VDN for which you are administering a VOA must be in a vector command line.

## Detailed description

The agent cannot hear the caller while the VOA message is playing. The caller is not connected to the agent until after the message completes and cannot hear the message or the agent during the message. The caller hears ringback while the agent is listening to the VOA.

Agents logged in at multiline telephones see the call-appearance button for an incoming call flash until after the VOA completes. An agent can press the flashing call-appearance button to stop the VOA.

To repeat the VOA, an agent presses the VOA Repeat button. The VOA Repeat button lamp lights during the VOA. The VOA Repeat button lamp remains lit if the repeat request is queued. If an agent presses the VOA Repeat button while the lamp is lit, the VOA is stopped. If an agent presses the VOA Repeat button but there is no VOA or the system cannot play the VOA within three seconds, the lamp flutters.

You assign VOAs for each VDN. However, the VOA applies to a COR, so you must administer a COR for agents who will receive VOAs.

You can set up VOAs in four ways:

- Agents can hear a unique announcement based on the dialed number identification service (DNIS) received from the service office or carrier switch. Assign each DNIS as the VDN of a vector. Set up the VOA to announce the services associated with the DNIS.

  **NOTE:**
  The announcement associated with the current VDN only plays if the VDN Override for the previous VDN is set to y. If VDN Override for the previous VDN is set to n, the VOA associated with that VDN plays.

- Use vector steps, an integrated prompting, or *converse-on* step to route calls to a VDN. Set up the VOA to announce the service the caller requested or to announce a condition that caused the call to *route-to* the VDN.
- You can route calls to a voice response system, directly or through a vector. Use voice prompting to direct the caller to enter a touchtone response, and route the call to a specific VDN based on the caller's response. Set up the VOA to indicate the service the caller selected.
- If agents require a caller's city of origin, assign the trunk group to a particular VDN. Set up the VOA to provide the location of the origin of the trunk group. Subsequent VDNs can be used to handle the call, or multiple VDNs can be assigned to a single vector.

  **NOTE:**
  VDN Override applies to VOA in the same way that VDN Override applies to display information. If a VDN with a VOA has VDN Override enabled, the system overrides the original VOA with VOAs in subsequent VDNs to which the call is routed.

## Considerations

- Because callers are kept waiting while a VOA plays, messages should be kept very brief — no more than 1.5 seconds in length. Agents should use a speakerphone or headset, so they do not miss the VOA while they are picking up the handset. If agents cannot use a speakerphone or headset, administer phones with a VOA Repeat button.
- If you have multiple announcement boards, you should place shorter VOAs on one board and longer recorded announcements on the other to avoid delaying delivery of VOAs. If you have only one announcement board, place VOAs on the integrated board and consider installing an auxiliary announcement device for longer announcements.
- Agents must be on the same switch as the VOA.
- A VOA can be assigned to multiple VDNs, but a VDN can have only one VOA.
- If you use the TN750 circuit board for integrated announcements, the system maintains a separate logical queue for VOAs. If the VOA cannot be delivered to the agent within 1 second because of traffic or inoperative equipment, the system does not provide the announcement. VOAs are higher priority than other announcements on the TN750. A burst of VOAs can delay other announcements. Therefore, record non-VDN of Origin Announcements as auxiliary or analog.
- Auxiliary announcements are connected for a duration of 1 to 2 seconds on a barge-in basis, immediately after the agent answers (or is assigned the call for auto-answer) and the incoming call is extended to the agent. Integrated and non-barge-in auxiliary announcements are connected for the duration of the announcement. The switch does not ensure that the integrated announcement is shorter than the allowed playback time.
- VOA supports Auxiliary Trunks (aux-trunk) with barge-in, queue, or without queue. For aux-trunk with or without queue, when the trunk is idle, a VDN call seizes the trunk to start the VOA and the system plays the entire announcement (not just 1 to 2 seconds). However, if the announcement is busy and if aux-trunk has barge-in, the call does not queue but bridges onto the announcement for 1 to 2 seconds. When the VOA completes, the trunk is released along with the listeners, and the next call requiring the VOA starts the process over again. For this reason, your aux-trunk announcements should consist of one short announcement that repeats during the full announcement time. For example, you might want to record “New Order” as many times as possible, so that when a call bridges to the announcement, the agent hears “New Order” no matter where the agent bridges into the announcement.
- If you use aux-trunk or integrated announcement without queue and a port is busy when a VDN call comes in, the system cannot play an announcement. If you use aux-trunk or integrated announcement with queue, the system plays the current announcement for an agent and then connects the next agent in the queue.

## Interactions

- Agent Call Handling (Answering Options)
  - — Automatic Answer

    ACD agents at phones in Auto Answer mode hear a zip tone, then the VOA. You can also administer a zip tone after the VOA completes, to alert agents that an announcement is complete and a caller is connected.

    Non-ACD agents can receive a VOA if a call is routed to them via vector processing. When non-ACD agents at phones in Automatic Answer mode receive calls, they hear a call ID tone then the VOA. Agents hear a second zip tone after the VOA indicating connection to the caller.

  - — Manual Answer

    When non-ACD agents at phones in Manual Answer mode receive calls they hear ringing, answer the call, and hear the VOA.
- ASAI Adjunct Routing

  If a vector step includes Adjunct Routing, the VOA is played for the agent to whom the call is routed.
- Auto-Available Split/Skill (AAS)

  AAS is intended to be used for splits/skills containing only nonhuman adjuncts such as AUDIX or Conversant; however, VOAs can be directed to Auto-Available splits/skills.
- Call Forwarding

  VOAs apply to forwarded calls, including those forwarded to a hunt group. The answering station must be on the same switch. If a VOA is forwarded, the message is played only if the destination extension is administered with a COR that allows VOA.
- Call Pickup

  Call Pickup allows an agent to pick up a ringing call on another extension. If the pick-up extension has COR permissions for VOA, the agent can receive a VOA.
- Conference

  If an agent receives a call and then conferences in additional stations, any station on the connection can use VOA Repeat button to replay the VOA. Only the person using the button can hear the VOA unless the call is being service observed.
- Converse-on split/skill

  A converse-on split/skill is one used in a *converse-on* vector step. When a *converse-on* vector step is executed, a VOA is not applied. After returning to the vector, the call can *be routed to* a station or VDN where the answering agent receives the VOA (as if the *converse-on* step had not been processed).
- Coverage

  VOA applies to coverage paths.

- Data Restriction

  Data Restriction prevents tones from being applied to line or trunk circuits during a data call. VOAs are not played for data-restricted calls.

- Direct Agent Calling

  Direct Agent Calling allows a vector to route a call to particular ACD agent and have the call treated as an ACD call. The VOA only applies to direct agent calls if the calls reach an agent through vector processing. Direct agent calls from a phone on a switch are not vector-processed and cannot cause a VOA to be played.

- Enhanced Automatic Wake-up

  If you are using enhancements to Automatic Wake-up with integrated announcements, there can be contention for integrated announcement ports. VOAs have priority over Automatic Wake-Up announcements.

- Expert Agent Selection (EAS)

  When you are using EAS, the logical agent COR definition determines the assignment of VOAs for each extension. EAS uses the COR of the logical agent instead of the COR for the telephone the agent is using.

- Hold

  Agents cannot use the VOA Repeat button if their calls are all on hold. The VOA Repeat button only applies to active calls.

- Home Agent

  You can assign an initial VOA to a home-agent port on the switch. However, home agents cannot use a VOA Repeat button because home agents need a dial access code (DAC) to reach features and VOA replay does not use a DAC.

- Hunt Groups

  VOAs apply to calls routed to a hunt group. The COR for the answering station's extension determines whether the station can receive a VOA.

- Look-Ahead Interflow

  VOAs apply only to the switch where the VDN is defined. If a call interflows to another switch, the VOA is lost. You can have the interflow to another switch access a VDN with the same VOA message as on the original switch.

- Redirection on No Answer (RONA)

  If a call re-queues to a split/skill because the RONA timer expired, the VOA applies to the call when an agent answers the call.

- Service Observing

  The system handles Service Observing calls as conference connections. If the observer presses the VOA Repeat button only he or she hears the announcement. However, if another party on the call presses the VOA Repeat button, the user and the observer hear the VOA.

- Supervisor Assist

  If an agent requests supervisor assistance and conferences the supervisor into a call, either the agent or the supervisor can use their VOA Repeat button to replay the VOA, but only the person who presses the button hears the VOA.

- Transfers

  If an agent receives a VDN call and transfers the call, the answering party can use the VOA Repeat button to replay the message.

- VOA distribution

  If you use long VOAs or multiple VOAs, there may be a delay between the zip tone and the announcement. The system provides multiple announcement circuit packs to help prevent announcement delays. Contact your Avaya representative for more information.

## Voice Response Integration (Category A only)

Voice Response Integration (VRI) integrates Call Vectoring with the capabilities of voice response units (VRUs) such as the Conversant Voice Response Unit (VRU). With Conversant, you can:

- Run a VRU script while retaining control of a call in vector processing
- Run a VRU script while a call is queued, retaining its position in the queue
- Pool Conversant ports for multiple applications
- Use a VRU as a flexible external-announcement device
- Pass data between the system and a VRU
- Tandem VRU data through a switch to an ASAI host

The *converse-on* command, which is part of Basic Call Vectoring, provides these capabilities. Use a *converse-on* call-vector step to integrate a VRU with Automatic Call Distribution (ACD). VRI allows you to use VRU capabilities while controlling a call in ACD.

Include VRUs with vector processing to take advantage of the following:

- Access to local and host databases
- Validation of caller information
- Text-to-speech capabilities
- Speech recognition
- Increased recorded announcement capacity
- Audiotex applications
- Interactive voice-response (IVR) applications
- Transaction-processing applications

VRI allows users to make productive use of queuing time. For example, while a call is queued, a caller can listen to product information via an audiotex application or can complete an interactive voice-response transaction. It may be possible to resolve the caller's questions while the call is queued, which helps reduce queuing time for other callers during peak times.

For more information on VRI and the *converse-on* command, see the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521.

## Administering VRI

Enable Call Prompting to allow the system to collect digits from the caller and Conversant to return data. You must have Call Prompting to administer the Converse Data Return Code and use the digits keyword for the <data_1> or <data_2> fields on the *converse-on* command.

**Table 3-57. Required forms**

| Form | Field |
|---|---|
| System Parameters Customer-Options | ■ Call Prompting |
| Feature Access Code (FAC) | ■ Converse Data Return Code |
| Feature-Related System Parameters | ■ Converse Delay Data1/Data2<br>■ Converse Signaling Tone/Pause |
| Call Vector | ■ All |

## Detailed description

A call queued to a split/skill retains position in the queue while a VRU script is being run. When an agent becomes available, the line to the VRU is dropped and the caller connects to the agent.

The *converse-on* command delivers a call to a predetermined converse split/skill. A converse split/skill is administered and operates exactly like other splits/skills. Nonconverse splits/skills are splits/skills that are accessed by *queue-to* and *check* vector steps.

Members of a converse split/skill are the ports connected to the VRU. If all VRU ports are busy, a call queues to the converse split/skill with the administered priority. After the VRU answers the call, the *converse-on* command may pass up to 2 data items to the VRU, depending on command parameters specified. You can pass data required by a VRU script or data that selects the VRU script to be run.

Whether or not you pass data, a caller is connected to the VRU, which runs the VRU script. Audible feedback provided by the vector is not heard and no further vector steps are run until the VRU script completes. The VRU may return data to the system and then drops the line to the system. Vector processing continues at the step following the *converse-on* command.

If the call was queued to a nonconverse split/skill before the *converse-on* command was run, the call retains its queue position. If an agent becomes available while the VRU script runs, the system drops the line to the VRU and connects the caller to the agent. The VRU detects the disconnect and terminates the VRU script. For *converse-on* command syntax, see the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521.

Call Prompting allows you to collect and use digits that the VRU returns. These digits are handled as dial-ahead digits. Rules for collecting and processing VRU digits are the same as for Call Prompting.

You can use digits returned from the VRU in the following ways:

- To display for the answering agent's (automatically for 2-line displays or with the CALLR-INFO button for other displays)
- As an extension in a *route-to digits* vector step. For example:

```
converse-on split. . . . (VRU returns 4 digits)
collect 4 digits after announcement none
route-to digits coverage y
```

- For vector-conditional branching in an *if digits equals* vector step. For example:

```
converse-on split . . . (VRU returns 1 digit)
collect 1 digit after announcement none
goto vector 101 if digits = 1
goto vector 102 if digits = 2
goto vector 103 if unconditionally
```

- Tandemed to an ASAI host

  Collected digits are passed to ASAI hosts in Call Offered to Domain Event reports and in *route request* messages, thus caller digits or database information returned from the VRU can be tandemed through the system to ASAI hosts. For example:

```
converse-on split ... (VRU returns 9 digits)
collect 9 digits after announcement none
adjunct route link Y
```

In this vector, the digits returned from the VRU are forwarded to the ASAI host in the adjunct routing *route request* message.

**⚠ SECURITY ALERT:**

*When you use a VRU application that returns data for a collect-digits step, the opportunity for toll fraud exists when the VRU application does not return any data. Take the following precautions:*

- If the collected digits are used to route calls internally, ensure that the Class of Restriction (COR) for the vector directory number (VDN) does not allow calls to route externally.
- If the collected digits are used to route calls externally, use a password to verify that the collected digits have been passed by the VRU application. For example, in the following vector, the VRU application returns a 3-digit password followed by the 8-digit external number. The vector routes calls without the correct password to a vector 23.

```
converse-on split 10 pri m passing none and none (VRU returns
11 digits)
collect 3 digits after announcement none
goto vector 23 if digits <> 234
collect 8 digits after announcement none
route-to digits with coverage n
```

## Interactions

Converse splits interact like other vector-controlled splits unless noted here.

- Adjunct Switch Applications Interface (ASAI)

  When a *converse-on* vector step places a call to an ASAI-monitored domain, ASAI event messages are sent over the ASAI link. When a *converse-on* step places an ASAI-monitored call, the ALERT message sent to the ASAI adjunct includes a cause IE, Coding Standard 3 value 23 (CS3/23), which informs the adjunct that the call has not been dequeued from any nonconverse splits.

  If a *converse-on* step is run while an adjunct routing request is outstanding, the request is canceled.

  ASAI cannot transfer or conference calls, but can direct the system to do this.

- Agents

  Although not recommended, you can use a *converse-on* step to deliver a call to a group of human agents. To agents, the call looks like an ACD call, except they cannot use certain features, such as Transfer, Conference, and Supervisor Assist.

  The agent can return data to vector processing by pushing the transfer button (or flash hook on analog) and dialing the converse-on data return code and required digits.

- Answer supervision

  Answer supervision is returned only once during a call. If a call is answered because of a *converse-on* step, answer supervision is sent if it hasn't previously been sent. If digits are passed to the VRU, answer supervision is sent after digits are sent.

- AUDIX

  If a *converse-on* step calls AUDIX, the call is handled as a direct call to AUDIX. The caller hears the AUDIX welcome message and can retrieve messages as usual.

  If a call is forwarded to a VDN and then delivered to an AUDIX hunt group by a *converse-on* step, the call to AUDIX is treated as a redirected call, and the caller may leave a message.

- Auto-Available Split/Skill (AAS)

  A *converse-on* vector step can place a call to an AAS. Use auto-available converse splits/skills for VRI except when ASAI controls the converse split/skill.

- Automatic answering

  When you administer Conversant ports as agents of a converse split/skill, do not administer agents as automatic answer. The system-provided zip tone may interfere with the interaction between Conversant and the calling party.

- BCMS/CMS

  BCMS tracks calls that a *converse-on* step places to a BCMS-measured hunt group. CMS tracks calls that a *converse-on* step places to a CMS-measured hunt group, split, or skill.

  The VDN tracks such calls as waiting in the vector. A call is considered answered when answered by a nonconverse split/skill agent, not when answered by a *converse split/skill agent*. The *converse split/skill* tracks this as a separate "answered" call when the VRU answers. Though trunk and split/skill totals may no longer match, VDN and trunk totals match.

- Call Detail Recording

  The duration of a call to a VDN is recorded from when answer supervision is returned after a successful *converse-on* step. Unsuccessful *converse-on* steps do not generate ineffective call-attempt records. Converse-on steps cannot place calls; these steps simply direct a call to a hunt group.

- Call Park

  Calls that a *converse-on* step placed cannot be parked.

- Call Pickup

  Do not use Call Pickup with *converse-on* steps.

- Class of Restriction

  The system does not check CORs when a *converse-on* vector step routes a call to a split.

- Conference

  You cannot conference a call routed by a *converse-on* step.

- Direct Department Calling

  You can administer a *converse split/skill* as a DDC split/skill.

- Distributed Communications System

  If an incoming DCS call is placed to a vector with a *converse-on split/skill x pri m passing ani...* step, the caller's DCS extension is sent to the VRU.

- Expert Agent Selection

  *Converse-on* steps can place calls to a skill hunt group.

- Hold

  An agent answering a converse call can put the call on hold, but the caller does not hear music on hold. If a call is queued to a backup split/skill before it was sent to the VRU and a nonconverse split/skill agent answers the call on hold, the agent who placed the call on hold is dropped, and the caller connects to the answering agent.

- Hold — Automatic

  Automatic hold applies to converse-on calls.

- Hunt Groups

  A *converse-on* step can deliver a call to a vector-controlled or AUDIX hunt group, ACD split, agent skill, or message center.

- ISDN

  You can administer a *converse-on* step to send a caller's calling party/ billing number (CPN/BN) to Conversant using the caller keyword.

- Intraswitch CDR

  If a converse-on call is answered and either the caller or the VDN associated with the call is administered for intraswitch recording, timing for the call is started and the CDR record shows "calling party to VDN" as the originating and answering parties.

- Line-side T1 connectivity

  T1 connectivity between the DEFINITY and Conversant is supported for VRI. The DS1 board must be a TN767E (or later) or TN464F (or later). Administer all converse agents as DS1FD-type stations. Operation of the converse step using Line-side T1 is identical to that over a tip/ring line. In particular, delay-timing and outpulsing speed is the same as for analog lines. T1 connectivity to Conversant is supported only in the United States and Canada.

- Look-Ahead Interflow

  If an incoming call or a call routed by a *converse-on* vector step is answered by a VRU, or is queued to the converse split/skill while a Look-Ahead Interflow call attempt is outstanding, the attempt is accepted.

- Message Center

  *Converse-on* steps can deliver calls to message hunt groups. Such calls are handled as direct calls to the message hunt group.

  If a call is forwarded to a VDN and a *converse-on* step delivers it to a message split, it is handled as a redirected call.

  A *converse-on* step can queue a call to three different skills and then to a converse skill group or split.

- Music-on-Hold

  During the data return phase of a *converse-on* step, the caller is placed on hold, but does not hear music.

- Nonvector-controlled splits

  A *converse-on* step cannot route a call to a nonvector-controlled split.

- Queuing

  Converse-on calls queue when they are delivered to busy hunt groups. Call Vectoring audible feedback is not disconnected while a converse-on call is queued.

  If a *converse-on* step is run while a call is queued to a non-converse split/skill, the call remains in queue, even after being answered by the VRU.

  *Converse-on* steps can queue calls at one of four priority levels: low, medium, high or top. You administer the queue priority of a call on the *converse-on* step.

- R2-MFC Signaling

  R2-MFC signaling trunks can send ANI to VRUs via the ani data item on the *converse-on* step.

- Recorded announcement

  Use VRI to increase the system's recorded announcement capacity by offloading some recorded announcements to a VRU, such as Conversant. Using the *converse-on* step, redirect callers to a group of VRU ports by passing the number of the announcement to be played. Conversant can play any announcement on any port.

  Although only one caller can be connected to each port, up to 48 callers can be connected simultaneously to Conversant. The maximum number of callers that can be connected to a VRU simultaneously varies with each VRU.

- Redirection on No Answer (RONA)

  If a *converse-on* step calls a hunt group with "no answer timeout" administered, and the call rings an agent/port for longer than the timeout interval, the call redirects and the agent/port is put into AUX work mode (or logged out if the agent is an AAS member).

  With RONA, the call is requeued to the split/skill. The call cannot requeue to the split/skill if it is an AAS with all agents logged out or if the queue is full. If the call cannot be requeued, the *converse-on* step fails, a vector event is logged, and processing restarts at the next vector step.

- Service Observing

  Calls delivered by a *converse-on* step can be observed. To prevent the observer from hearing tones associated with data being sent to the VRU, the observer is not connected to the call until after data is passed. If the VRU returns data, the observer is put in service-observing-pending mode and the caller is put on hold while the data is sent. When the converse-on session ends and the VRU drops the line, the observer remains in service-observing-pending mode and waits for the next call.

  In addition, the observer observing a VDN does not hear data being sent. After data is sent, the observer rejoins the call.

  Do not administer a service observing warning tone because the warning tone may interfere with the interaction between Conversant and the caller.

- System measurements

  System measurements track converse-on calls to hunt groups.

- Touch-tone dialing

  A caller can use touch-tone dialing while digits are passed in a converse-on session. The data is not corrupted. The system does not collect the dialed numbers as dial-ahead digits.

  After the system sends digits to Conversant, a caller can enter touch-tone digits at a Conversant prompt. After Conversant has returned data to the system and an additional *collect <#> digits* vector step is run, a caller can enter a touch-tone response to a system prompt.

- Transfer

  A call delivered by a *converse-on* step cannot be transferred.

  If an attempt to transfer a converse-on call is made, a vector event is logged, the line to Conversant is dropped, and processing restarts at the next vector step.

  If a human agent tries to transfer a call, the transfer fails and the agent reconnects to the call.

- Transfer out of AUDIX

  If a *converse-on* step delivers a call to an AUDIX hunt group and the caller tries to transfer out of AUDIX, the transfer fails and processing continues at the next vector step.

- Uniform Call Distribution (UCD)

  You can administer a converse split/skill as a UCD split/skill.

- VDN display override

  If a call that accesses multiple VDNs encounters a *converse-on* step that passes vdn, normal display override rules determine which VDN number is sent to the VRU.

- Vector-controlled splits/skills

  *Converse-on* steps can deliver calls only to skills or vector-controlled splits.

## VuStats (Category A only)

VuStats presents Basic Call Management System (BCMS) statistics on phone displays. Agents, supervisors, call center managers, and other users can press a button and view statistics for agents, splits/skills, VDNs, and trunk groups.

These statistics reflect information collected during the current BCMS interval, information collected since the agent logged in or since the day began, or historical data accumulated over an administered number of intervals. The information is limited to 40 characters displayed at a time. VuStats can display on demand or update periodically.

With VuStats, anyone who is using a telephone with digital display can view BCMS statistics, which are otherwise available only on BCMS reports or management terminals. These statistics can help agents monitor their own performance or can be used to manage splits/skills or small call centers.

**NOTE:**
Although VuStats can run with either BCMS or CMS enabled, neither is required.

Figure 3-4 illustrates a Callmaster with a VuStats display.

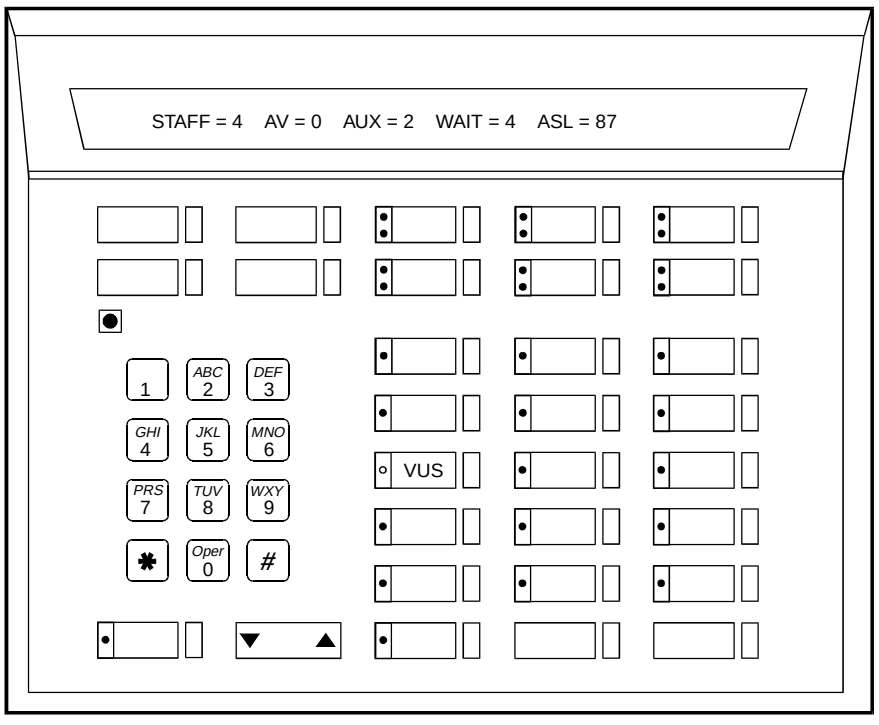



**Figure 3-4. Callmaster with VuStats display**

## Administering VuStats

**Table 3-58. System-Parameter Customer-Options form**

| Form | Field |
|---|---|
| System Parameter Customer-Options | ■ ACD<br>■ BCMS/VuStats Login ID<br>■ BCMS/VuStats Service Level<br>■ VuStats or VuStats (G3V4 Enhanced) |

Display the System-Parameter Customer-Options form and ensure that ACD, BCMS/VuStats Login IDs, BCMS/VuStats Service Level, and VuStats or VuStats (G3V4 Enhanced) are set to **y.**

**Table 3-59. Required forms**

| Form | Field |
|---|---|
| Feature-Related System Parameters | ■ ACD Login Identification Length<br>■ BCMS/VuStats Measurement Interval<br>■ BCMS/VuStats Abandoned Call Timer<br>■ Validate BCMS/VuStats Login IDs<br>■ Clear VuStats Shift Data |
| Trunk Group | ■ Measured |
| Attendant Console | ■ Feature Buttons |
| BCMS/VuStats Login ID | ■ Login ID, Name |
| Hunt Group | ■ ACD<br>■ Acceptable Service Level<br>■ Measured<br>■ Objective |
| Station | ■ Feature Buttons |
| Vector Directory Number | ■ Acceptable Service Level<br>■ Measured |
| VuStats | ■ All |

- Feature-Related System-Parameters form
  - — **ACD Login Identification Length —** If you are not using EAS, enter a number (1–9) that identifies the length of Agent Login IDs used by BCMS/VuStats. If you are not using BCMS/VuStats Login IDs, accept the default 0. This field defines the ACD login ID length and the BCMS login ID length, so you must coordinate with the BCMS administrator before changing this field.
  - — **BCMS/VuStats Measurement Interval —** This interval determines how frequently BCMS polls and records data for BCMS reports and VuStats displays. Set this field to **half-hour** or **hour**.

    If you specify **hour**, an entire day of traffic information is available for BCMS history reports. Otherwise, only half a day is available.There is a maximum of 25 measurement intervals, including the current interval.
  - — **BCMS/VuStats Abandon Call Timer —** Set this field to 1–10, or leave blank. This value is the number of seconds a call can last and still be recorded as an abandoned call. For example, if you set this field to 5, a call could last up to 5 seconds and be recorded as abandoned. Thus, very short calls are not included as ACD calls in BCMS and VuStats statistics. Abandoned time is measured from the time the call is answered until the agent hangs up. Any time an agent is on a call that is within the abandon call timer value is recorded as total AUX time with the default reason code. Use this timer if your central office does not provide disconnect supervision.
  - — **Validate BCMS/VuStats Login IDs —** Set to **n** to allow entry of any ACD login of the proper length. Set to **y** to allow entry only of login-IDs that have been entered on the BCMS/VuStats Login-ID form.
  - — **Clear VuStats Shift Data.** Set to **on-login** or **at-midnight** to specify when shift data for an agent is cleared.
- Agent Login ID form — Administer Agent Login IDs for EAS. With EAS, VuStats accesses agent and agent-extension object type information based on agent login ID. Agents logging in agent IDs (administered on this form or BCMS/VuStats Login ID form) can view their own statistics on any VuStats phone they are using. If agent IDs are not administered, VuStats displays only statistics collected for the agent's extension.
- Trunk Group form — For each trunk group that will have VuStat display statistics, set Measured to **internal** or **both**. Specify **internal** to record statistics for BCMS/VuStats. Specify **both** to record statistics for BCMS/VuStats and CMS.

- Attendant Console form — Administer a VuStats feature button (vu-display**)** to allow an attendant to display VuStats statistics. There is no limit to the number of VuStats buttons that can be administered.
  - **Fmt** — When you assign VuStats feature buttons, an Fmt field appears. You can associate a VuStats feature button with a particular display format. The Fmt value identifies the VuStats format used to display the information. Specify 1 — 50 in the Fmt (1 is the default format). See "Format Number" in this section for additional information.
  - **ID number** — Optionally administer an ID number for each vu-display button. Use the ID number to define the agent, split/skill, trunk group, or VDN that the VuStats display will describe. The ID can be an agent login ID or extension number, a split/skill or trunk group number, or a VDN extension. For example, a vu-display button administered with split/skill ID 6 is used to view statistics for split/skill number 6.

    Do not administer IDs for VuStats displays with the agent object type. Agent object type displays are limited to statistics for the logged-in agent.

    IDs allow supervisors and agents to bypass entering an agent extension, split/skill, or VDN number when viewing statistics. IDs can also be used to limit access to certain statistics to designated phones.
- BCMS/VuStats Login ID form — Administer Agent Login IDs if you do not have EAS. BCMS/VuStats Login IDs can be used to track statistics by specific agent rather than extension number. Specify any character, except a space, to be used as a placeholder for data in Format Description text. $ is the default. Each character holds a place for one character of data. See “Data Field Character” in this section for more information.
- Hunt Group form
  - **ACD** — Set this field to **y**.
  - **Acceptable Service Level** — Specify the number of seconds within which calls to this hunt group are answered. Calls answered within this time are considered acceptable. BCMS and VuStats use this value to determine the percentage of calls that meet the acceptable service level.
  - **Measured** — Set this field to **internal** or **both**. Specify **internal** to record statistics for BCMS/VuStats. Specify **both** to record statistics for BCMS/VuStats and CMS.
  - **Objective** — Specify an objective, or goal, for the split/skill. Examples include an agent objective of a number of ACD calls to be handled, an average talk time, or a percent of calls to be answered within the acceptable service level.
- Station form — Administer a VuStats feature button (vu-display) to allow agents to display VuStats statistics. See “Attendant Console form” above for more information.

- Vector Directory Number form

  For each VDN that has statistics displayed by VuStats, administer the following fields:

  — **Acceptable Service Level** — Specify the number of seconds within which calls to this VDN are answered. Calls answered within this time are considered acceptable. BCMS and VuStats use this value to determine the percentage of calls that meet the acceptable service level.

  — **Measured —** Set this field to **internal** or **both**. Specify **internal** to record statistics for BCMS/VuStats. Specify **both** to record statistics for BCMS/VuStats and CMS.

- VuStats Display Format form — see the ‘‘VuStats (Category A only)’’ in Chapter 4, ‘‘DEFINITY ACD call center forms’’ for definitions related to completing this form.

## Detailed description

The following forms and fields determine information that VuStats displays.

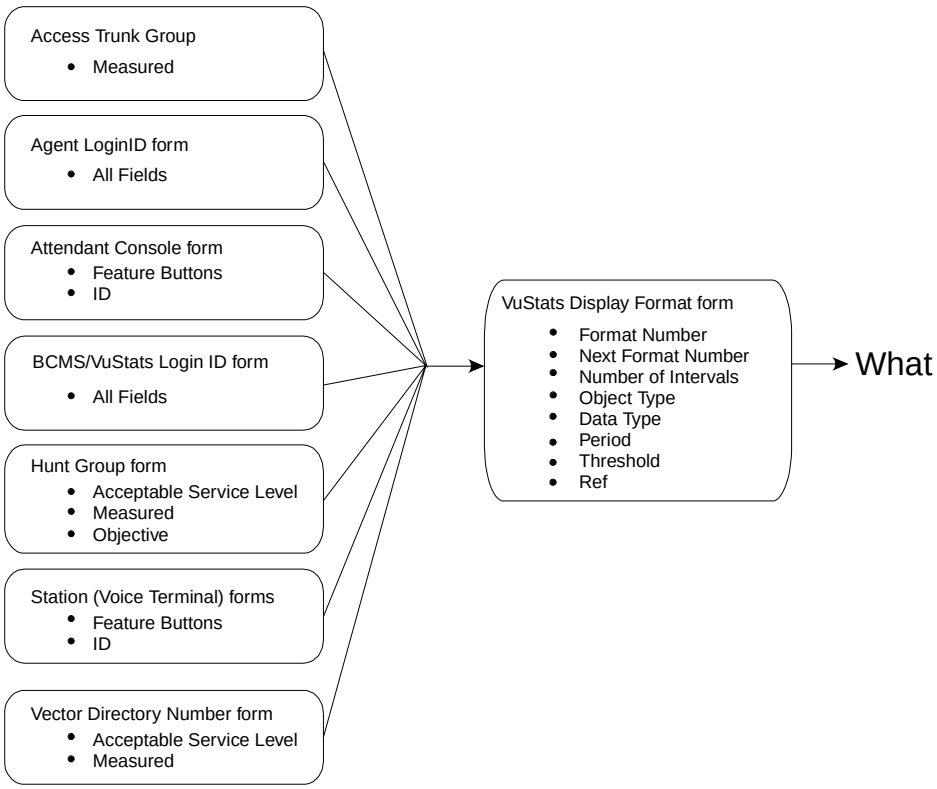



**Figure 3-5. Forms that determine what information appears on the VuStats display**

### Data type

Data type defines what data is displayed for an object type. For example, for an agent object type, VuStats can display information agents are interested in, such as the total number of calls the agent has answered since login, the average time the agent has spent on ACD calls, the number of agents available to receive calls for a split/skill, and the percent of calls within the acceptable service level.

For split/skill object types, VuStats can display split/skill description and performance information, such as average speed of answer, number of calls waiting, and agent work states. VuStats can also display an objective, acceptable service level, or percent of calls answered within the acceptable service level for a split/skill.

See the data types tables in Chapter 4, ‘‘DEFINITY ACD call center forms’’ for more information.

### Period

VuStats can show statistics that have accumulated for the day, or for an administered number of intervals. For example, if you administer VuStats to display the number of ACD calls for the past 4 completed intervals, it displays the number of ACD calls received in the past 2 hours (1/2-hour intervals) or 4 hours (1-hour intervals) plus those completed during the current interval. Using historical data can affect processor occupancy, depending upon the number of active users, their update rates, and the number of historical data types.

With agent or agent-extension object types, shift data is available for the number of ACD calls answered, the average ACD talk time, and AUX work mode time by Reason Code for an agent. You can clear shift data at midnight or the next time an agent logs in.

### Threshold

Many data types can be administered with a threshold comparator and value. When the condition defined by the threshold is true, and the data type is shown on the display, the VuStats button lamp flashes. For example, suppose a format is created in which the oldest call waiting data type is administered with a threshold of >= (greater than or equal to) five minutes. Whenever that VuStats format is displayed, if the oldest call in queue has been waiting for five minutes or longer, the VuStats lamp flashes on the phone. Each time the display updates, the threshold is checked for each data type being displayed.

### Format description

Use Format Description to create labels on the display to identify data. For example, in Figure 3-4 on page 3-208 “AUX=” identifies the data type “split-agents-in-aux-all” (that is, the number of agents currently in AUX work mode for a specified split/skill). Text appears on the display exactly as you enter it in the field. Text is optional.

Because of the 40-character limit, use abbreviations when possible. For example, use “S=” to indicate “split number”.

### Display linking

Link display formats to increase the amount of information users can view. For example, link a display of information for an agent's first split/skill to a display of information for the agent's second split/skill. Or, link a display of information about the work states of all agents on a split/skill linked to another display of information about calls waiting, number of calls abandoned, or oldest call waiting for the split/skill.

If you use display linking, assign a Next button on agent telephones.

## How the information looks

The following fields on the VuStats Display form determine how information looks on the VuStats display.

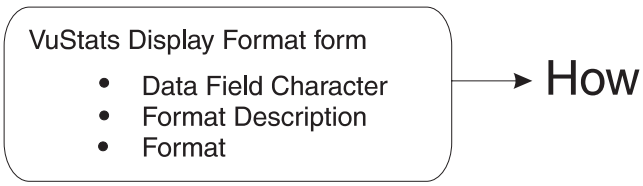



**Figure 3-6. Fields that determine what information appears on the VuStats display**

VuStats statistics appear on the second line of 2-line DCP telephone displays or on the first line of 1-line DCP telephones and all BRI telephones. On telephones with 2 x 24 displays, the display automatically wraps to the second line of the display. When VuStats is activated, it overwrites and cancels any display feature on the second line of a 2-line display and on the first line of a 1-line display.

You define the following format information on the VuStats Display Format form:

- Labels for data types and the amount of space reserved for data
- Order in which data types appear on the display
- Format for time-related data types
- Display links

### When the information updates

The following forms and fields determine when VuStats displays update.

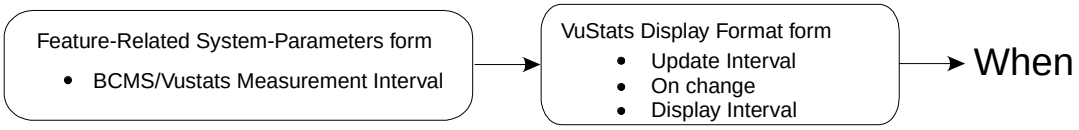



**Figure 3-7. Fields that determine when information updates on the VuStats display**

Most display features that use the second line of a 2-line display or the first line of a 1-line display overwrite and cancel VuStats. Reason Codes and Call Work Codes only suspend VuStats; when the prompt is removed, the VuStats display reappears.

User press the normal button to clear the VuStats display.

Administer VuStats to display information until agents press the normal button or another operation overwrites the VuStats display. Or, administer VuStats to display for an interval of 5, 10, 15, or 30 seconds.

You can also administer VuStats to update displayed statistics every 10, 20, 30, 60 or 120 seconds or every time an agent changes work mode or a BCMS Measurement Interval is completed, or not update at all.

### Considerations

Some VuStats data is accumulated for an agent's login session. This shift data clears either at midnight or the next time the agent logs in depending upon how the system is administered. If the data clears at login and agents log out to go to lunch, the system clears their accumulated data when they log back in after lunch.

To accumulate a full day's statistics, you can require agents and supervisors to keep a running total of all their login sessions, or, to avoid this, use historical data, require agents to use AUX work mode when temporarily unavailable, or administer the system to clear shift data at midnight.

## Interactions

- BCMS

  You must have BCMS activated to receive BCMS reports. VuStats displays data collected by BCMS, but BCMS need not be enabled for you to use VuStats.

- Call Prompting

  When Call Prompting digits are displayed, VuStats is canceled. When an agent reactivates VuStats, the VuStats display overwrites the Call Prompting display.

- Call Work Codes (CWC)

  The CWC-display prompt suspends VuStats, so when the CWC prompt is removed, the VuStats display reappears.

  If VuStats is activated while a CWC is being entered (that is, the pound (#) sign is not yet dialed), the CWC display is overwritten. The CWC must be reentered.

- Change skills

  An agent changing skills automatically cancels VuStats. Display of the new skills overwrites the VuStats display. When the agent reactivates VuStats, the VuStats display overwrites the new skills display.

- CMS

  Moving an agent from one split/skill to another does not affect the ID assigned to the vu-display button.

  If an agent is moved from one split/skill to another, the system does not associate VuStat buttons from the agent's previous split/skill to the new split/skill. Therefore if you must frequently move agents between splits/skills, do not associate agents' VuStats buttons with a specific split/skill. Instead, associate the VuStats button with the agent format (without an ID) on each agent's phone and use a split/skill reference to view the agent's split/skill.

- EAS-PHD

  When you have EAS-PHD enabled, VuStats can provide statistical data for all twenty skills. However, agent statistics by skill (agent or agent-extension object types) are available only for the current interval or for the "shift-acd-calls" and "shift-average-acd-talk-time" data types.

- Integrated Directory

  If an agent activates Integrated Directory, VuStats is automatically cancelled. The Integrated Directory display overwrites the VuStats display and the VuStats button extinguishes. When VuStats is reactivated, the VuStats display overwrites the Integrated Directory display.

- Queue-Status Indications

  The queue-status button display automatically cancels VuStats. When VuStats is reactivated, the VuStats display overwrites the queue-status display.

- Reason Codes

  Using certain VuStats data types, you can report real-time and historical AUX work mode time by Reason Code or AUX work mode time summed for each Reason Code.

  The Reason Codes display prompt suspends VuStats; when the Reason Codes prompt is removed, the VuStats display reappears.

- Service Observing

  On telephones with a 1-line display, the Service Observing button display automatically cancels VuStats. When VuStats is reactivated, the VuStats display overwrites the Service Observing display.

# DEFINITY ACD call center forms

# 4

## Introduction

This chapter defines the DEFINITY forms that are used to administer the ACD Call Center features.

## List of call center forms


| Forms | Page |
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| Best Service Routing (BSR) Application Plan (Category A only) | 4-7 |
| BCMS/VuStats Login ID (Category A only) | 4-9 |
| Call Center System Parameters | 4-12 |
| Call Vector | 4-18 |
| Holiday Table | 4-22 |
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# Agent LoginID (Category A only)

This form is used to administer Agent LoginIDs for the Expert Agent Selection feature.

## Administration commands

Use the following administration commands to administer the Agent LoginID form.

| Action | Object | Qualifier[1] |
|---|---|---|
| add | agent-loginid | xxxxx (extension) or **next** |
| change | agent-loginid | xxxxx (extension) |
| display | agent-loginid | xxxxx (extension) [**print** or **schedule**] |
| duplicate | agent-loginid | xxxxx (extension) start xxxxx (starting extension number) count x |
| remove | agent-loginid | xxxxx (extension) |
| list | agent-loginid | [**staffed** \|**unstaffed** [**name** x][**aas** y/n]] |

1. Brackets [ ] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

## Form instructions

```
add agent-loginID 9011                                        Page  1 of  1
                          AGENT LOGINID

                Login ID: 9011_                                    AAS? _
                    Name: ____________________________           AUDIX? _
                      TN: 1__                          LWC Reception: msa-spe
                     COR: 1                  AUDIX Name for Messaging: _______
          Coverage Path: ____    Messaging Server Name for Messaging: _______
          Security Code: ____                 LoginID for ISDN Display? n
      Direct Agent Skill: ___                                Password: _________
Call Handling Preference: skill-level          Password (enter again): _________
       Service Objective? _                                Auto Answer: ______

   SN  RL SL  PA       SN  RL SL  PA        SN  RL SL  PA        SN  RL SL  PA
1: __  _  __  ___   6: __  _  __  ___   11: __  _  __  ___   16: __  _  __  ___
2: __  _  __  ___   7: __  _  __  ___   12: __  _  __  ___   17: __  _  __  ___
3: __  _  __  ___   8: __  _  __  ___   13: __  _  __  ___   18: __  _  __  ___
4: __  _  __  ___   9: __  _  __  ___   14: __  _  __  ___   19: __  _  __  ___
5. __  _  __  ___  10: __  _  __  ___   15: __  _  __  ___   20: __  _  __  ___

      WARNING:  Agent must log in again before skill changes take effect
```

**Screen 4-1. Agent LoginID form**

Make assignments as required for the following fields on the form:

- **Login ID** — Display-only field. Contains the identifier for the Logical Agent as entered on the command line.
- **Name** — Enter up to a 27-character string naming the agent. Any alpha-numeric character is valid. Default is blank.
- **TN** — Enter the Tenant Partition number. Valid entries are **1**-**20**. Default is **1**.
- **COR** — Enter the Class of Restriction for the agent. Valid entries are **0**-**95**. Default is **1**.
- **Coverage Path** — Enter the number of the Coverage Path used by calls to the LoginID. Valid entries are a path number between **1**-**999**, time of day table **t1**-**t999** or blank (default). This is used when the agent is logged out, busy, or does not answer.
- **Security Code** — Enter the 4-digit security code (password) for the Demand Print messages feature. This field may be blank (default).
- **Direct Agent Skill** — Enter the number of the skill that is used to handle Direct Agent calls. Valid entries are **1**-**99**, or blank (default).
- **Call Handling Preference** — Choices are **skill-level** (default), **greatest-need**, and **percent-allocation**. When calls are in queue and an agent becomes available, **skill-level** delivers the oldest, highest priority call waiting for the agent's highest level skill. **Greatest-need** delivers the oldest, highest priority call waiting for any of the agent's skills. **Percent allocation** delivers a call from the skill that will otherwise deviate most from its administered allocation. **Percent-allocation** is available only with the CentreVu Advocate software. For more information, see the *CentreVu Advocate User Guide*, 585-215-953.
- **Service Objective** —This field is displayed only when the call handling preference is **greatest-need** or **skill-level**. You may enter **y** or **n** in this field. When Service Objective is administered on the Hunt Group form and the agent LoginID form, the DEFINITY selects calls for agents according to the ratio of Predicted Wait Time (PWT) or Current Wait Time (CWT) and the administered service objective for the skill. Service Objective is a feature that is part of the CentreVu Advocate software. For more information, see the *CentreVu Advocate User Guide*, 585-215-953.
- **Direct Agent Calls First** (not shown) — This field replaces the `Service Objective` field when **percent-allocation** is entered in the `Call Handling Preference` field. Enter **y** if you want direct agent calls to override the percent-allocation call selection method and be delivered before other ACD calls. Enter **n** if you want direct agent calls to be treated like other ACD calls. For more information, see the *CentreVu Advocate User Guide*, 585-215-953.

- **AAS** — Enter **y** if this extension will be used as a port for an Auto Available Split/Skill. Default is **n**.

  **WARNING:**
  *Entering **y** in the AAS field clears the password and requires execution of the **remove agent-loginid** command. To set AAS to **n**, this logical agent must be removed then re-added.*

  **WARNING:**
  *This option is intended for DEFINITY adjunct equipment ports only, not human agents.*

- **AUDIX** — Enter **y** if this extension will be used as a port for an AUDIX. Default is **n**.

  **NOTE:**
  The AAS and AUDIX fields cannot both be **y**.

- **LWC Reception** — Enter where LWC messages will be stored for this Agent LoginID. For the DEFINITY ECS R5r and newer configurations, valid entries are **audix**, **msa spe** (default), and **none**. For the DEFINITY ECS R5si and newer configurations, valid entries are **audix**, **msa-spe** (default), and **none**.
- **Port Extension** (not shown) — Only displayed if either the AAS or AUDIX field is **y**. Enter the assigned extension for the AAS or AUDIX port. This extension cannot be a VDN or an Agent LoginID. Default is blank.
- **AUDIX Name for Messaging** — Only applicable to the DEFINITY ECS R5r and newer configurations. Enter the name of the AUDIX used for LWC Reception and/or the name of the AUDIX that provides coverage for this Agent LoginID or leave blank (default).
- **Messaging Server Name for Messaging** — Only applicable to the DEFINITY ECS R5r and newer configurations. Enter the name of the Messaging Server used for LWC Reception and/or the name of the Messaging Server that provides coverage for this Agent LoginID or leave blank (default).
- **LoginID for ISDN Display** — Enter **y** if the Agent LoginID CPN and Name field is to be included in ISDN messaging over network facilities. In this case, the physical station extension CPN and Name is sent. Default is **n**.
- **Password** — Only displayed if both the AAS and AUDIX fields are **n**. Enter up to nine digits as the password the Agent must enter upon login. Valid entries are the digits 0 through 9. The minimum number of digits that must be entered in this field is specified in the Minimum Agent-LoginID Password Length field on the Feature-Related System Parameters form. Default is blank.

  **NOTE:**
  Values entered into this field will not be echoed to the screen.

- **Password (enter again)** — Only displayed if both the AAS and AUDIX fields are **n**. Reenter the same password exactly as it was entered in the Password field. Default is blank.

  **NOTE:**
  Values entered into this field will not be echoed to the screen.

- **Auto Answer** — Valid entries are **all**, **acd**, **none**, and **station**. When Expert Agent Selection is optioned, the agent's auto answer setting will apply to the station where the agent logs in. If the auto answer setting for that station is different, the agent's setting will override the station's.

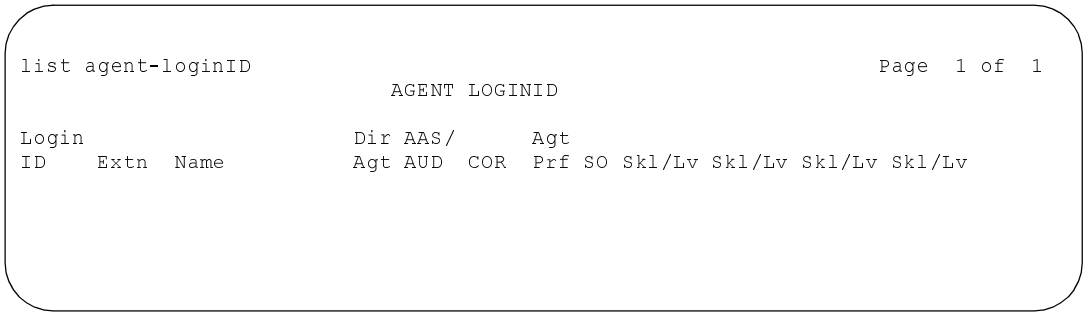
  The entries **all**, **acd**, and **none** have the same effect as the corresponding entries on the Station form. Enter **all** to allow all calls (ACD and non-ACD) terminated to the agent to be cut through immediately. Enter **acd** to allow only ACD split /skill calls and direct agent calls to auto answer. If this field is **acd**, Non-ACD calls terminated to the agent ring audibly. Enter **none** (default) to cause all calls terminated to this agent to receive an audible ringing treatment. Enter **station** if you want auto answer for the agent to be controlled by the auto answer field on the Station form.

- **SN (Skill Number)** — Enter the Skill Hunt Group(s) that this agent handles. The same skill may not be entered twice. If EAS-PHD is not optioned, up to 4 skills can be entered. If EAS-PHD is optioned, up to 20 skills can be entered.

- **RL (Reserve Level)** — Enter the reserve level (if any) assigned to this agent with the Service Level Supervisor feature. You may assign a reserve level of **1** or **2**. When this skill reaches the corresponding EWT threshold set on the Hunt Group form, this agent will automatically be logged into the skill and will take calls until the skill's EWT drops below the preassigned overload threshold. Service Level Supervisor is available as part of the CentreVu Advocate software. For more information, see the *CentreVu Advocate User Guide*, 585-215-953.

- **SL (Skill Level)** — Enter a skill level for each of an agent's assigned skills. If EAS-PHD is not optioned, 2 priority levels are available. If EAS-PHD is optioned, 16 priority levels are available. In releases prior to R3V5, level 1 was the primary skill and level 2 was the secondary skill.

- **PA (Percent Allocation)** — If the call handling preference is **percent-allocation**, you must enter a percentage for each of the agent's skills. Enter a number between **1–100** for each skill. Your entries for all of the agent's skills together must total 100%. Do not use target allocations for reserve skills. Percent Allocation is available as part of the CentreVu Advocate software. For more information, see the *CentreVu Advocate User Guide*, 585-215-953.




**Screen 4-2. List Agent LoginID form**

The following fields appear only on the List Agent LoginID form. All of these fields are display-only:

- **Extn** — The physical extension at which this agent is currently logged in. This field is blank if the agent is not logged in.
- **Dir Agt** — Shows the entry in the Direct Agent Skill field.
- **AAS/AUD** — This field is **y** if the login ID is assigned as an auto-available split/skill or an AUDIX port.
- **Agt Pref** — Shows the call handling preference assigned to this loginID.
- **SO** — Shows the entry in the Service Objective field. If you are not using Service Objective, this field is blank.
- **Skl/Lv** — Shows the agent's assigned skills and the skill level for each one.

## Implementation notes

The Auto Answer field is only displayed if G3 Version on the System Parameters Customer-Options form is set to **V6** or later.

The AUDIX Name for Messaging and Messaging Server Name for Messaging fields are only displayed for the DEFINITY ECS R5r and newer configurations.

The Password and Password (enter again) fields are only displayed when both the AAS and AUDIX fields are **n**.

The Port Extension field is only displayed if either the AAS or AUDIX field is **y**.

# Best Service Routing (BSR) Application Plan (Category A only)

Use this form to identify the remote locations used in each BSR application.

**NOTE:**
For an explanation of BSR application plans see ‘‘Best Service Routing (Category A only)’’.

For more information about Best Service Routing, refer to the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521.

## Administration commands

Use the following administration commands to administer the Best Service Routing form.

| Action | Object | Qualifier[1] |
|---|---|---|
| add | best-service-routing | xxx (application number) or ‘next’ |
| change | best-service-routing | xxx (application number) |
| display | best-service-routing | xxx (application number) |
| remove | best-service-routing | xxx (application number) |
| list[2] | best-service-routing | |

1. Brackets [ ] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.
2. The command **List best-service-routing** displays the List Best Services Routing Applications form. This is a display-only form and is shown below.

Valid application numbers are 1–255.

## Form instructions

```
                        BEST SERVICE ROUTING APPLICATION

Number: 1     Name: International     Maximum Suppression Time: 60     Lock? y

Num  Location Name    Switch Node   Status Poll VDN   Interflow VDN   Net Redir?
1    Denver            320          95022011          3035389425          y
2    New Jersey        18           95022111          3038053652          y
3    New York          12245        95032211          95032221            n
```

**Screen 4-3. Best Service Routing Application Plan form**

Make assignments as required for the following fields on the form:

- **Number**—This display-only field shows the identifying number of the plan you're working with. Numbered from 1 to 255.
- **Name**—Give the application plan a name with up to 15 characters.
- **Maximum Suppression Time** — Enter the maximum poll suppression time in seconds from **0**-**60**. This value applies when a subsequent Call Vector consider command replaces a location as the best. For example, if the poll suppression time is set to 30 seconds, the remote location polling is suppressed for up to 30 seconds if the adjusted Expected Wait Time (EWT) is very far from being the best.
- **Lock** — When set to **y**, this field provides extra security by not sending the information over the CMS. When set to **n**, the system sends the information.
- **Num** — Enter the location number. One plan may have 1–255 locations. Location numbers are identifiers, and therefore need not be in sequential order. For example, you could assign locations with the identifiers 1, 3, 14 and 89 to one application plan.
- **Location Name**—Give each location a name with up to 15 characters.
- **Switch Node**—This is an optional field. If you're using Universal Call ID, enter the UCID Network Node ID for each DEFINITY. Valid Network Node IDs range from 1–32,767.
- **Status Poll VDN**—In this field, enter the routing number (including the dial access code) your DEFINITY will use to access the Status Poll VDN at the remote location. Valid entries may be up to 16 characters long and contain the digits 0–9, * or #, p (pause), w/W (wait), m (mark), and s (suppress) characters.
- **Interflow VDN**—In this field, enter the routing number (including the dial access code) your DEFINITY will use to access the Interflow VDN at the remote location. Valid entries may be up to 16 characters long and contain the digits 0–9, * or #, p (pause), w/W (wait), m (mark), and s (suppress) characters.
- **Net Redir**—When set to **y**, this field enables network call redirection. When set to **n**, network call redirection is not enabled. Default is **n**.

# BCMS/VuStats Login ID (Category A only)

If you want to monitor call activity by agent login IDs, and if the BCMS/VuStats Login ID field on the System-Parameters Customer-Options form is set to **y** but the EAS feature is not optioned, the administrator uses this form to administer valid logins.

You do not have to enter names. If you do not use names with the login IDs, the data you receive from BCMS and/or VuStats defaults to **ID xxxxxxxxx** where **xxxxxxxxx** is the login ID.

**NOTE:**
Only agents using one of the administered login IDs can successfully log in to a split/skill measured by BCMS.

## Administration commands

Use the following administration commands to administer the BCMS/VuStats Login ID form.

| Action | Object | Qualifier[1] |
|---|---|---|
| add | bcms/vustats login IDs | |
| change | bcms/vustats login IDs | [login ID] |
| display | bcms/vustats login IDs | [login ID] |
| list | bcms/vustats login IDs | [login ID] count X |

1. Brackets [ ] indicate the qualifier is optional.

## Form instructions

```
change bcms/vu-stats login IDs
                                                              Page 1 of x
                          BCMS/VU-STATS LOGIN IDS
      Assigned Numbers: 300 of 400
         Login Id   Name                      Login Id   Name
       1: _________ ________________    17: _________ ________________
       2: _________ ________________    18: _________ ________________
       3: _________ ________________    19: _________ ________________
       4: _________ ________________    20: _________ ________________
       5: _________ ________________    21: _________ ________________
       6: _________ ________________    22: _________ ________________
       7: _________ ________________    23: _________ ________________
       8: _________ ________________    24: _________ ________________
       9: _________ ________________    25: _________ ________________
      10: _________ ________________    26: _________ ________________
      11: _________ ________________    27: _________ ________________
      12: _________ ________________    28: _________ ________________
      13: _________ ________________    29: _________ ________________
      14: _________ ________________    30: _________ ________________
      15: _________ ________________    31: _________ ________________
      16: _________ ________________    32: _________ ________________
```

**Screen 4-4. BCMS/VuStats Login IDs form**

Make assignments as required for the following fields on the form:

- **Login ID** — A number up to nine digits that an agent must enter to be measured in a split/skill by BCMS. The login IDs are restricted to up to five digits if you are using EAS. The system validates each login ID. If you enter a duplicate login ID, the system displays an error message and places the cursor at the duplicate field. Also, the login ID must be the same length as the number in the **ACD Login Identification Length** field on the Feature-Related System-Parameters form. If the login ID you enter does not match the length specified in the **ACD Login Identification Length** field, the system displays an error message and places the cursor at the field that is incorrect.

  **NOTE:**
  The administered login length may change to another value, but doing so changes the allowed length for all IDs entered on this form. Before agents with logins that do not match the administered login length can log on, you must readminister either the ACD login identification length to fit the existing logins or change the logins to match the ACD login identification length.

- **Name** — A name associated with the login ID (optional).

## Implementation notes

The form appears only two pages (64 IDs) at a time. If you are adding login IDs, you can fill two pages and then reissue the command to fill an additional two pages, and so on. If you are changing or displaying login IDs, the system displays two pages of login IDs beginning with the ID you specified; if you did not specify a login ID when you issued the command, the display begins with the first login ID. The **list** command lists all login IDs and may run to 63 pages.

# Call Center System Parameters

Call Center System Parameters are listed on pages 8 and 9 of the Feature-Related System Parameters form. For a complete discussion of the Feature-Related System Parameters form, see the *DEFINITY ECS Administrator's Guide*, 555-233-506.

## Administration commands

Use the following administration commands to administer the BCMS/VuStats Login ID form.

| Action | Object | Qualifier |
|---|---|---|
| change | system-parameters | features |
| display | system-parameters | features |

## Form instructions

```
change system-parameters features                                Page 8 of 10
                     FEATURE-RELATED SYSTEM PARAMETERS

CALL CENTER SYSTEM PARAMETERS
   EAS
          Expert Agent Selection (EAS) Enabled? y
         Minimum Agent-LoginID Password Length: _
           Direct Agent Announcement Extension: _____          Delay: ___
     Message Waiting Lamp Indicates Status For: station

   VECTORING
                    Converse First Data Delay: 0       Second Data Delay: 2
                Converse Signaling Tone (msec): 100          Pause (msec): 70_
                     Prompting Timeout (secs): 10
                  Interflow-qpos EWT Threshold: 2
     Reverse Star/Pound Digit For Collect Step? n

  SERVICE OBSERVING
              Service Observing Warning Tone? y        or Conference Tone? n

ASAI
 Call Classification After Answer Supervision? n      Send UCID to ASAI? n
```

**Screen 4-5. Feature-Related System Parameters form (page 8 of 10)**

```
change system-parameters features                                Page 9 of 10
                     FEATURE-RELATED SYSTEM PARAMETERS

CALL CENTER SYSTEM PARAMETERS
   AGENT AND CALL SELECTION
                         MIA Across Splits or Skills? _
                          ACW Agents Considered Idle? _
                          Call Selection Measurement: ____________________
    Service Level Supervisor Call Selection Override? _
                                Auto Reserve Agents: ____________

   REASON CODES
                           Aux Work Reason Code Type: ____
                             Logout Reason Code Type: ____

   CALL MANAGEMENT SYSTEM
                                   Adjunct CMS Release: ____
                     ACD Login Identification Length: _
                   BCMS/VuStats Measurement Interval: ____
           BCMS/VuStats Abandon Call Timer (seconds): ____
                     Validate BCMS/VuStats Login IDs? _
                          Clear VuStats Shift Data: ________
```

**Screen 4-6. Feature-Related System Parameters form (page 9 of 10)**

Make assignments as required for the following fields on the form:

## Page 8 of the form

### EAS parameters (Category A only)

- **Expert Agent Selection (EAS) Enabled** — Only displays if `Expert Agent Selection (EAS)` on the System-Parameters Customer-Options form is **y**. Enter **y** to enable Expert Agent Selection. To enable this field, either no ACD or vectoring hunt groups may exist or, existing ACD or vectoring hunt groups must be skilled. Default is **n**.
- **Minimum Agent-LoginID Password Length** — Only displays if `Expert Agent Selection (EAS)` on the System-Parameters Customer-Options form is **y**. Enter the minimum number of digits that must be administered as an EAS Agent's LoginID password. Valid entries are **0** through **9** or blank. Entering a **0** or blank indicates no password is required. Default is blank.
- **Direct Agent Announcement Extension** — Only displays if `Expert Agent Selection (EAS)` or `ASAI` on the System-Parameters Customer-Options form is **y**. Enter a valid announcement extension (consistent with the dial plan).
- **Delay** — Only displays if `Expert Agent Selection (EAS)` or `ASAI` on the System-Parameters Customer-Options form is **y**. Enter the number of seconds (**0** to **99**) the caller will hear ringback before the Direct Agent Announcement is heard by the calling party.

- **Message Waiting Lamp Indicates Status For** — Only displays if `Expert Agent Selection (EAS)` on the System-Parameters Customer-Options form is **y**. If `Expert Agent Selection (EAS) Enabled` is **y**, you can enter either **station** or **loginID**, otherwise you can only enter **station**.

### Vectoring parameters

- **Converse First Data Delay/Second Data Delay (Category A only)** — Only displays if `Vectoring (Basic)` on the System-Parameters Customer-Options form is **y**. The `First Data Delay` prevents data from being outpulsed (as a result of a converse vector step) from the system to a voice response unit (VRU) before the unit is ready. The delay commences when the VRU port answers the call. Enter the number of seconds (**0** to **9**) for the delay. Default is **0**. The `Second Data Delay` is used when two groups of digits are being outpulsed (as a result of a converse vector step) from the system to the VRU. The `Second Data Delay` prevents the second set from being outpulsed before the VRU is ready. The delay commences when the first group of digits has been outpulsed. Enter the number of seconds (**0** to **9**) for the delay. Default is **2**.
- **Converse Signaling Tone/Pause (Category A only)** — Only displays if `Vectoring (Basic)` and `DTMF` on the System-Parameters Customer-Options form are **y**. In the `Signaling Tone` field, enter the length in milliseconds of the digit tone for digits being passed to a voice response unit (VRU). In the `Pause` field, enter the length in milliseconds of the delay between digits being passed. The optimum timers for the VRU are a 100 msec tone and 70 msec pause.

  Values entered in the `Tone/Pause` fields are rounded up or down depending upon the type of circuit pack used to outpulse the digits.

  - **TN742B or later suffix analog board** — Tone and pause round up or down to the nearest 25 msecs. For example a 130 msec tone rounds down to 125 msecs, a 70 msec pause rounds up to 75 msec for a total of 200 msecs per tone.
  - **TN464F, TN767E or later suffix DS1 boards** — Tone and pause round up to the nearest 20 msecs. For example a 130 msec tone rounds up to 140 msecs, a 70 msec pause rounds up to 80 msecs for a total of 220 msecs per tone.

  If a circuit pack has been used for end-to-end signalling to the VRU, and has then been used to send digits to a different destination, the VRU timers may stay in effect. To reset your timers to the system default, pull and reseat the circuit pack.
- **Prompting Timeout (secs)** — Only displays if `Vectoring (Prompting)` on the System-Parameters Customer-Options form is **y**. Enter the number of seconds, from **4** to **10** (default), before the Collect Digits command times out for callers using rotary dialing.
- **Interflow-qpos EWT Threshold (Category A only)** — Part of enhanced Look-Ahead Interflow. Any calls predicted to be answered before this threshold will not be interflowed (therefore saving CPU resources). Enter the number of seconds for this threshold. The default is 2 seconds.

- **Reverse Star/Pound Digit For Collect Step?** — Effective with DEFINITY R8.2 and newer releases. Setting this field to **y** reverses the normal handling of the asterisk (*) and pound (#) digits by the *collect* vector command. With the `Reverse Star/Pound Digit for Collect Step` set to **y**, the asterisk (*) digit is interpreted as a caller end-of-dialing indicator and the pound (#) digit is interpreted to clear all digits that were previously entered for the current *collect* vector step.

  Any use of the asterisk (*) or pound (#) digits in the *converse* and *adjunct-route* vector commands is not changed by this field.

### Service Observing parameters

- **Service Observing: Warning Tone** — `Service Observing (Basic)` on the System-Parameters Customer-Options form must be **y** before this field may be administered. Enter **y** to assign a warning tone to be given to telephone users and calling parties whenever their calls are being monitored using the Service Observing feature. Default is **n**.

  **NOTE:**
  The use of Service Observing features may be subject to federal, state, or local laws, rules or regulations or require the consent of one or both of the parties to the conversation. Customers should familiarize themselves and comply with all applicable laws, rules, and regulations before using these features.

- **Service Observing: or Conference Tone** — `Service Observing (Basic)` on the System-Parameters Customer-Options form must be **y** before this field may be administered. Enter **y** to assign a warning tone to be given to the caller and the agent when a call that is being service observed is conferenced with another extension. Default is **n**.

### ASAI parameters (Category A only)

- **Call Classification After Answer Supervision?** — For use with ASAI Outbound Call Management (OCM). Enter **y** to force the DEFINITY to rely on the network to provide answer/busy/drop classification to the DEFINITY. After the call has been answered, a call classifier can be added to perform answering machine, modem and voice answering detection. Enter **n** for standard operation.
- **Send UCID to ASAI?** — Enter **y** to enables transmission of Universal Call ID (UCID) information to ASAI. Enter **n** (default) to prevent transmission of UCID information to ASAI.

## Page 9 of the form

### Agent and Call Selection parameters

- **MIA Across Splits or Skills?** — Enter **y** to remove an agent from the MIA queue for all the splits/skills that the agent is available in when the agent answers a call from any of his or her splits/skills. The default is **n**.
- **ACW Agents Considered Idle?** — Enter **y** (default) to have agents who are in After Call Work included in the Most-Idle Agent queue. Enter **n** to exclude ACW agents from the queue.
- **Call Selection Measurement (Category A only)** — Valid entries are **current-wait-time** (default) and **predicted-wait-time**. This field determines how the DEFINITY ECS selects a call for an agent when the agent becomes available and there are calls in queue. Current Wait Time selects the oldest call waiting for any of the agent's skills. Predicted Wait Time is a feature of the CentreVu Advocate software. For more information, see the *CentreVu Advocate User Guide*, 585-215-953.
- **Service Level Supervisor Call Selection Override? (Category A only)** — Enter **y** (default) to enable an agent to receive a lower priority call from a skill in an over threshold state before receiving an higher priority call from a skill not in an over threshold state.
- **Auto Reserve Agents: (Category A only)** — Enter **all** so that an agent will be intentionally left idle in a skill if her work time in the skill has exceeded her target allocation for the skill. Enter **secondary-only** to activate this feature only for the agent's nonprimary skills (skill levels 2 through 16). Auto Reserve Agents is a feature of the CentreVu Advocate Release 9 software. For more information, see the *CentreVu Advocate User Guide*, 585-215-953.

### Reason Codes parameters (Category A only)

- **Aux Work Reason Code Type** — Enter **none** if you do not want an agent to enter a Reason Code when entering AUX work. Enter **requested** if you want an agent to enter a Reason Code when entering AUX mode but do not want to force the agent to do so. Enter **forced** to force an agent to enter a Reason Code when entering AUX mode. To enter **requested** or **forced**, the `Reason Codes` and `EAS` on the System-Parameters Customer-Option form must be **y**.
- **Logout Reason Code Type** — Enter **none** if you do not want an agent to enter a Reason Code when logging out. Enter **requested** if you want an agent to enter a Reason Code when logging out but do not want to force the agent to do so. Enter **forced** to force an agent to enter a Reason Code when logging out. Enter **forced** to force an agent to enter a Reason Code when entering AUX mode. To enter **requested** or **forced**, the `Reason Codes` and `EAS` on the System-Parameters Customer-Option form must be **y**.

### Call Management System Parameters (Category A only)

- **Adjunct CMS Release** — Specifies the release of the CMS adjunct used with the system. For CMS, this field cannot be blank. Default is blank.
- **ACD Login Identification Length** — Enter the number of digits (**0** through **9**) for an ACD Agent Login ID if `Expert Agent Selection (EAS)` on the System-Parameters Customer-Options form is **n**. Default is **0**. If `BCMS/VuStats Login IDs` is **y**, the ACD Login ID length must be greater than 0. This field identifies an ACD agent to CMS. The number you enter in this field must equal the number of characters in the agent's login ID. For CMS, this field cannot be 0.
- **BCMS/VuStats Measurement Interval** — You can enter **half-hour** or **hour** (default) for polling and reporting measurement data if the `BCMS (Basic)` and/or the `VuStats` on the System-Parameters Customer-Options form is **y**. If neither of these features is optioned, and if you enter a value in the `BCMS Measurement Interval` field, the system displays the following error message:

  **<value> cannot be used; assign either BCMS or VuStats first**

  If you receive this message, see your Avaya representative to turn on `BCMS (Basic)` and/or `VuStats` on the System-Parameters Customer-Options form.

  There are a maximum of 25 time slots available for measurement intervals. If **hour** is specified, an entire day of traffic information will be available for history reports; otherwise, only half a day will be available. This does not affect daily summaries as they always reflect traffic information for the entire day. The interval may be changed at any time, but will not go into effect until the current interval completes.
- **BCMS/VuStats Abandon Call Timer (seconds)** — Enter **none** or **1**–**10** to specify the number of seconds for calls to be considered abandoned. Calls with talk time that is less than this number (and that are not held) are tracked by BCMS and displayed by VuStats as ABAND calls.
- **Validate BCMS/VuStats Login IDs** — Enter **n** to allow entry of any ACD login of the proper length. Enter **y** to allow entry only of login-IDs that have been entered on the BCMS Login-ID form.
- **Clear VuStats Shift Data** — Enter **on-login** to clear shift data for an agent when the agent logs in. Enter **at-midnight** to clear shift data for all agents at midnight.

# Call Vector

This form programs a series of commands that specify how to handle calls directed to a Vector Directory Number (VDN). For additional information, refer to the *Call Vectoring/EAS Guide* for your switch.

## Administration commands

Use the following commands to administer the Call Vector form.

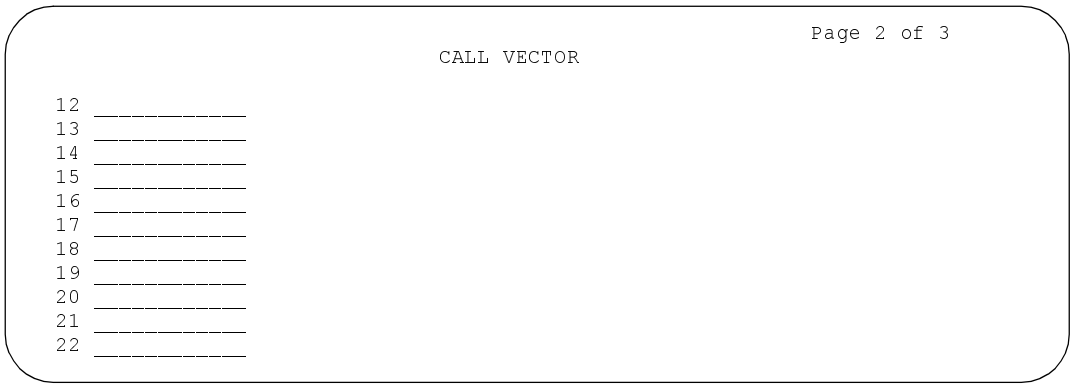
| Action | Object | Qualifier[1] |
|---|---|---|
| change[2] | vector | 1-MAX |
| display | vector | 1-MAX [’print’ or ’schedule’] |
| list | vector | 1-MAX [‘count’ 1-MAX] [’print’ or ’schedule’] |

1. Brackets [ ] indicate the qualifier is optional. Single quotes (‘ ’) indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration.
2. Do not change a call vector while it is processing a call. It is recommended to add a new vector with the Call Vector form, and then use the Vector Directory Number form to point an existing VDN to the new vector.

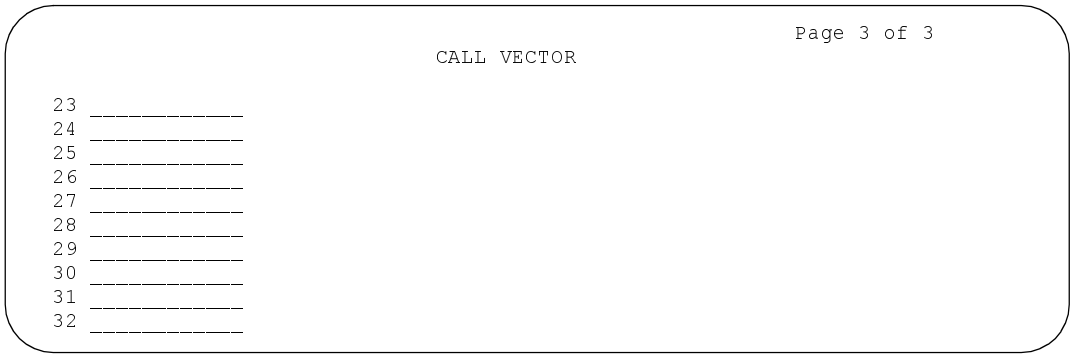
## Form instructions

```
change vector 37                                                page 1 of 3
                                  CALL VECTOR

         Number: 37                   Name: Reroute using NCR Feature
   Multimedia? n     Attendant Vectoring? n                          Lock? n
        Basic? y   EAS? y  G3V4 Enhanced? y  ANI/II-Digits? y  ASAI Routing? y
    Prompting? y  LAI? y  G3V4 Adv Route: y    CINFO? n     BSR? y Holidays? n

01 ____________
02 ____________
03 ____________
04 ____________
05 ____________
06 ____________
07 ____________
08 ____________
09 ____________
10 ____________
11 ____________
```

**Screen 4-7. Call Vector form (Page 1 of X)**




**Screen 4-8. Call Vector Form (Page 2 of X)**




**Screen 4-9. Call Vector Form (Page 3 of X)**

Make assignments as required for the following fields on the form:

- **Number** — Display-only field when the form is accessed using a **change** or **display** administration command. Enter a vector number when completing a paper form.
- **Name** — Enter up to 27 alphanumeric characters to represent the vector name. This is an optional field. Default is blank.
- **Multimedia (Category A only)** — Indicates whether the vector should receive early answer treatment for multimedia calls. This only applies if Multimedia Call Handling is enabled. If you expect this vector to receive multimedia calls, set this field to **y**. Valid values are **y** or **n** (default). If this value is **y**, the call is considered to be answered at the start of vector processing, and billing for the call starts at that time.

- **Attendant Vectoring** — Appears only when Attendant Vectoring is optioned. Valid entries are **y** and **n** (default). The Attendant Vectoring field defaults to **n** and changes are allowed to the field. If Basic Vectoring and Vector Prompting are both set to **n**, then the Attendant Vectoring field defaults to **y** and no changes are allowed to the field.

  To associate VDNs and vectors for attendant vectoring, a field has been added to both the VDN and the call vectoring forms to indicate attendant vectoring. When attendant vectoring is indicated for VDNs and vectors, all call center-associated fields (such as Skills and BSR) are removed.

- **Lock**—This field controls access to the vector from the CentreVu CMS or CentreVu Visual Vectors. Valid entries are **y** and **n**(default). Enter **n** to give CentreVu CMS and CentreVu Visual Vectors users the ability to administer this vector from these client programs. Enter **y** if you do not want this vector to be accessible to these client programs. Locked vectors can only be displayed and administered through the SAT or a terminal emulator.

  **NOTE:**
  Always lock vectors that contain secure information (for example, access codes).

- **Basic** — Display-only field. Indicates whether the `Vectoring (Basic)` option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.

- **EAS (Category A only)** — Display-only field. Indicates whether the `Expert Agent Selection (EAS)` option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.

  **NOTE:**
  When Expert Agent Selection (EAS) is enabled, the help messages and error messages associated with this form will reflect a terminology change from "Split" to "Skill". In addition, the vector commands entered also will be affected by this terminology change (for example, *check backup split* becomes *check backup skill* when EAS is enabled).

- **G3V4 Enhanced (Category A only)** — Display-only field. Indicates whether you can use G3V4 Enhanced Vector Routing commands and features.

- **ANI/II-Digits (Category A only)** — Display-only field. Indicates whether you can use ANI and II-Digits Vector Routing Commands. ANI/II-Digits Routing requires that `G3V4 Enhanced` be set to **y**.

- **ASAI Routing (Category A only)** — Display-only field. Indicates whether or not the `CallVisor Adjunct/Switch Applications Interface (ASAI) Routing` option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.

- **Prompting** — Display-only field. Indicates whether the `Vectoring (Prompting)` option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.

- **LAI (Category A only)** — Display-only field. Indicates whether Look-Ahead Interflow is enabled.
- **G3V4 Adv Route (Category A only)** — Display-only field. Indicates whether you can use the G3V4 Advanced Vector Routing commands.
- **CINFO (Category A only)** — Display-only field. Indicates whether the `Vectoring (CINFO)` option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.
- **BSR (Category A only)** — A **y** in this display-only field indicates that the Vectoring (Best Service Routing) option is enabled on the System-Parameters Customer-Options form. Thus, you can use BSR commands and command elements in your vectors. An **n** indicates that the BSR option is not enabled.
- **Holidays** — Display-only field. The value of **y** appears if Holiday Vectoring is set to **y** on the system Parameters Customer Options form.
- **01 through 32** — Enter vector commands as required (up to the maximum allowed in your configuration). Valid entries are **adjunct**, **announcement**, **busy**, **check**, **collect**, **consider**, **converse-on**, **disconnect**, **goto**, **messaging**, **que-to**, **reply-best**, **route-to**, **stop**, **wait-time**. Default is blank.

# Holiday Table

This form is used to establish the days/times for which Holiday Vectoring will apply. It is available to you only if Holiday Vectoring is set to **y** on the Customer Options form.

For more information on Holiday Vectoring, refer to the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521.

## Administration commands

You can use the commands listed in the table below to administer Holiday Tables.

| Action | Object | Qualifier |
|---|---|---|
| add | holiday-table | 1 through 10, or next |
| change | holiday-table | 1 through 10, or next |
| display | holiday-table | 1 through 10, or next |
| remove | holiday-table | 1 through 10, or next |
| list | holiday-table | none - all Holiday Tables will display |

## Form instructions

```
change holiday-table 1                                          Page 1 of 1
                                HOLIDAY TABLE

        Number: 1               Name: Bank Holidays

        ______START_______      ________END________
        Month Day Hour Min      Month Day Hour Min      Description
        12    24                12    31                Christmas
        01    01  00   00       01    01  10   00       New Year's Day
```

**Screen 4-10. Holiday Table form**

Make assignment as required for the following fields on the form:

- **Number** — This is the table number that you entered on the command line. It is a display only field.
- **Name** — Enter a 1 to 15-character alphanumeric table name. You may leave this field blank. Default is blank.

- **Start** — Enter the Month (1 through 12), the Day (optional, 1 through 31), Hour (optional, 00 through 23), and the Min (minute) (optional, 00 through 59) on which vector processing for this holiday should begin.

  See the Implementation notes for entering dates section below for additional information.

- **End** — Enter the Month (1 through 12), the Day (optional, 1 through 31), Hour (optional, 00 through 23), and the Min (minute) (optional, 00 through 59) on which vector processing for this holiday should end.

  See the Implementation notes for entering dates section below for additional information.

- **Description** — Enter a description of the holiday defined on this line. Default is blank.

## Implementation notes for entering dates

**NOTE:**
When using a range of dates, the end date must be greater than the start date. Ranges must be within one calendar year. In the example above, two entries were made — one for each calendar year.

The Holiday Table Form can be used for entering individual holiday or for holiday ranges. The following rules apply to entering dates on this form:

- If a day is entered, the corresponding month must be entered.
- If a month is entered, the corresponding day must be entered.
- If an hour is entered, the corresponding minute must be entered.
- If a minute is entered, the corresponding hour must be entered.
- If an hour/minute is entered, the corresponding month/day must be entered.
- If a month/day is entered, the corresponding hour/minute is not required.
- If an end month/day is entered, the corresponding start month/day must be entered.
- If a start month/day is entered, the corresponding end month/day is not required.
- To enter an individual holiday, enter a start month/day, but do not enter an end month/day.
- To enter a holiday range, enter both a start month/day and an end month/day.
- The start m/d/h/m must be less than or equal to the end m/d/h/m.

## Implementation notes

Consider the following when administering a holiday table:

- There is no validation that verifies the consistency among the 15 holidays in any table. If the same holiday is entered twice, the system stops checking with the first entry found.
- With holidays that are ranges of dates, the ranges could overlap. When a call is in vector processing, the holidays are checked from top to bottom on the table and the check stops if a match is found. Even though there might be multiple entries that would match, the check stops at the first match.
- There is a validation that the day of the month that is entered is valid with the given month. Specifically, if the month is April, June, September, or November, then the date must be 1 - 30. If the month is January, March, May, July, August, October, or December, then the date can be 1 - 31. If the month is February, then a range of 1 - 29 is allowed.

  **NOTE:**
  The year is not checked in holiday vector processing. This allows the same holidays to be used year-to-year when the holiday is on a fixed date. For holidays where the date changes from year-to-year, the holiday tables must be readministered.

# Hunt Group

The ACD software directs a high volume of calls to hunt groups that are designed as ACD splits. Each ACD split is created to receive calls for one or more services, such as Business Travel or Billing. The services that are defined are based on the needs of the people who are calling the call center.

The Hunt Group form is used to define how the DEFINITY sends calls to extensions in ACD and non-ACD environments.

One Hunt Group form needs to be completed for each split/skill.

For a full discussion of all of the fields on the Hunt Group form, refer to the *DEFINITY ECS Administrator's Guide*, 555-233-506.

## Administration commands

You can use the commands listed in the table below to administer the Hunt Group form.

| Action | Object | Qualifier |
|---|---|---|
| add | hunt-group | 1-99 (si/csi), 1-999 (r), or next |
| change | hunt-group | 1-99 (si/csi), 1-999 (r), or next |
| display | hunt-group | 1-99 (si/csi), 1-999 (r), or next |
| remove | hunt-group | 1-99 (si/csi), 1-999 (r), or next |
| list | hunt-group | 1-99 (si/csi), 1-999 (r), or none (all hunt groups display) |

## Form instructions

Below are examples of the Hunt Group form pages. Refer to the *DEFINITY ECS Administrator's Guide*, 555-233-506 for a description of each field on the forms.

```
change hunt-group xxx                                Page 1 of X

                            HUNT GROUP

          Group Number: ___                              ACD? _
            Group Name: _____________________________ Queue? _
       Group Extension: ____                           Vector? _
            Group Type: _______                 Coverage Path: ____
                    TN: ___     Night Service Destination: _____
                   COR: _                  MM Early Answer? _
         Security Code: ____
       ISDN Caller Disp: ________

           Queue Length: ___
Calls Warning Threshold: ___   Port: ____  Extension: ____
 Time Warning Threshold: ___   Port: ____  Extension: ____
```

**Screen 4-11. Hunt Group form (page 1 of x)**

```
change hunt group xxx                                Page 2 of X
                            HUNT GROUP

               Skill?___   Expected Call Handling Time sec):___
                 AAS?____    Acceptable Service Level (sec):___
            Measured:____           Service Objective (sec):___
Supervisor Extension:____         Service Level Supervisor?___

 Controlling Adjunct:____

                            Dynamic Percentage Adjustment?___
                                     Service Level Target:___
                                   Dynamic Queue Position?___

                            Redirect on No Answer (rings):___
                                                Redirect to VDN:___
        Forced Entry of Stroke Counts or Call Work Codes?___
```

**Screen 4-12. Hunt Group form (page 2 of x)**

```
change hunt group xxx                                    Page 3 of X
                              HUNT GROUP

                  Message Center:___




                   LWC Reception:______
                      AUDIX Name:______
            Messaging Server Name:______

  First Announcement Extension:___  Delay (sec):___
 Second Announcement Extension:___  Delay (sec):___ Recurring?_
```

**Screen 4-13. Hunt Group form (page 3 of x)**

```
change hunt group xxx                                    Page 4 of X
                              HUNT GROUP

    Group Number:___   Group Extension:_____   Group Type:____
 Voice Mail Number:_____   Administered Members (min/max):____
                               Total Administered Members:____
GROUP MEMBER ASSIGNMENTS
      Ext    Name                       Ext    Name
   1: _____  ____________________    14: _____  ____________________
   2: _____  ____________________    15: _____  ____________________
   3: _____  ____________________    16: _____  ____________________
   4: _____  ____________________    17: _____  ____________________
   5: _____  ____________________    18: _____  ____________________
   6: _____  ____________________    19: _____  ____________________
   7: _____  ____________________    20: _____  ____________________
   8: _____  ____________________    21: _____  ____________________
   9: _____  ____________________    22: _____  ____________________
  10: _____  ____________________    23: _____  ____________________
  11: _____  ____________________    24: _____  ____________________
  12: _____  ____________________    25: _____  ____________________
  13: _____  ____________________    26: _____  ____________________

At End of Member List
```

**Screen 4-14. Hunt Group form (page 4 of x)**

**NOTE:**
Hunt Group for page 4 and the following pages are used to assign agent extensions to the split hunt group. If the group is a skill (Skill field on page 2 is set to y), these pages do not appear.

# Reason Code Names (Category A only)

Use the Reason Code Names form to assign names to Reason Codes. You can assign a different name to each Reason Code for Aux Work and for Logout.

## Administration commands

Use the following administration commands to access the Reason Code Names form.

| Action | Object |
|---|---|
| display | reason-code-names |
| change | reason-code-names |

## Form instructions

```
                              REASON CODE NAMES

                        Aux Work    Logout     Affect Agent Occupancy

          Reason Code 1: __________  __________  _
          Reason Code 2: __________  __________  _
          Reason Code 3: __________  __________  _
          Reason Code 4: __________  __________  _
          Reason Code 5: __________  __________  _
          Reason Code 6: __________  __________  _
          Reason Code 7: __________  __________  _
          Reason Code 8: __________  __________  _
          Reason Code 9: __________  __________  _

    Default Reason Code: __________  __________  _
```

**Screen 4-15. Reason Code Names form**

Make assignments as required for the following fields on the form.

- **Aux Work** — For each Reason Code enter the name to be associated with this Reason Code when the agent uses this Reason Code to enter Aux Work mode. Names can be up to ten characters long. Default is blank.
- **Logout** — For each Reason Code enter the name to be associated with this Reason Code when the agent uses this Reason Code to log out. Names can be up to ten characters long. Default is blank.
- **Affect Agent Occupancy** — For each Reason Code enter **y** (yes) or **n** (no). Enter **y** to include the total AUX time in the agent work time and total samples while in AUX work mode in the **staffed any skill** measurement. The default is **n**.

# SIT Treatment for Call Classification (Category A only)

This form is used to provide the capability of specifying the treatment of Special Information Tones (SITs) used for Outbound Call Management type calls with USA tone characteristics. The TN744 Call Classifier circuit pack ports are used to detect SITs. The TN744 is capable of detecting the following six SITs:

- SIT Ineffective Other
- SIT Intercept
- SIT No Circuit
- SIT Reorder
- SIT Vacant Code
- SIT Unknown
- AMD Treatment

## Administration commands

Use the following administration commands to administer the SIT Treatment For Call Classification form. In some cases, just the most commonly used commands are shown. Refer to *DEFINITY ECS Administrator's Guide*, 555-233-506, for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

| Action | Object | Qualifier[1] |
|---|---|---|
| change | sit-treatment | — |
| display | sit-treatment | ['print' or 'schedule'] |

1. Brackets [ ] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word can be entered.

## Form instructions

```
                SIT TREATMENT FOR CALL CLASSIFICATION
   SIT Ineffective Other:  dropped
            SIT Intercept:  answered
          SIT No Circuit:  dropped
             SIT Reorder:  dropped
         SIT Vacant Code:  dropped
             SIT Unknown:  dropped
           AMD Treatment:  dropped
Pause Duration (seconds): 0.5
 Talk Duration (seconds): 2.0
```

**Screen 4-16. SIT Treatment For Call Classification form**

Make assignments as required for the following fields on the form:

In the field following each type of SIT, enter **answered** to specify that the call is classified as answered, and is therefore sent to an agent; or enter **dropped** to specify that the call is classified as not answered, and is therefore not sent to an agent.

- **SIT Ineffective Other** — Sample announcement following this SIT — "You are not required to dial a "1" when calling this number." Valid entries are **answered** and **dropped**. Default is **dropped**.
- **SIT Intercept** — Sample announcement following this SIT — "XXX-XXXX has been changed to YYY-YYYY, please make a note of it." Valid entries are **answered** and **dropped**. Default is **answered**.
- **SIT No Circuit** — Sample announcement following this SIT — "All circuits are busy, please try to call again later." Valid entries are **answered** and **dropped**. Default is **dropped**.
- **SIT Reorder** — Sample announcement following this SIT — "Your call did not go through, please hang up and dial again." Valid entries are **answered** and **dropped**. Default is **dropped**.
- **SIT Vacant Code** — Sample announcement following this SIT — "Your call cannot be completed as dialed, please check the number and dial again." Valid entries are **answered** and **dropped**. Default is **dropped**.
- **SIT Unknown** — A situation or condition that is unknown to the network is encountered. Valid entries are **answered** and **dropped**. Default is **dropped**.
- **AMD (Answering Machine Detected)** — An ASAI adjunct can request AMD for a DEFINITY -classified call. If Answering Machine is detected, one of two treatments is specified. Valid entries are **dropped** and **answered**. Default is **dropped**.

  AMD Treatment has two separately administrable subfields. Talk Duration is for full seconds and Pause Duration is for fractions of a second, separated by a display-only decimal point. Talk Duration defaults to 2.0 seconds and allows a range from 0.1 seconds to 5.0 seconds in increments of 0.1 seconds. Pause duration defaults to 0.5 seconds and allows a range from 0.1 seconds to 2.0 seconds in increments of 0.1 seconds.

# Vector Directory Number

This form is used to define vector directory numbers (VDNs) for the Call Vectoring feature. A VDN is an extension number used to access a call vector. Each VDN is mapped to one call vector.

VDNs are software extension numbers (that is, not assigned to physical equipment). A VDN is accessed via direct dial CO trunks mapped to the VDN (incoming destination or night service extension), DID trunks, and LDN calls. The VDN may be Night Destination for LDN.

For additional information, refer to the *Call Vectoring/EAS Guide* for your switch.

## Administration commands

Use the following administration commands to administer the Vector Directory Number form.

| Action | Object | Qualifier[1] |
|---|---|---|
| add | vdn | xxxxx (extension number of VDN to be added) or 'next' |
| change | vdn | xxxxx (extension number of VDN to be changed) |
| display | vdn | xxxxx (extension number of VDN to be displayed) ['print' or 'schedule'] |
| list | vdn | xxxxx (extension number of VDN to be listed) ('count' 1-MAX) ['print' or 'schedule'] |
| | vdn | bsr xxx (number of a BSR application plan) |
| remove | vdn | xxxxx (extension number of VDN to be removed) |

1. Brackets [ ] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word can be entered. MAX is the maximum number available in your system configuration. Refer to the *DEFINITY ECS System Description Pocket Reference.*

## Form instructions

When the Attendant Vectoring field is set to **n**, the VDN form appears like this:

```
change vdn xxxxx                                                    page 1 of 2
                          VECTOR DIRECTORY NUMBER

                          Extension: 2001
                               Name: vdn 2001
                     Vector Number: 1

                Attendant Vectoring? n
                 Allow VDN Override? n
                                COR: 1
                                 TN: 1
                           Measured: internal
      Acceptable Service Level (sec): ____
             Service Objective (sec): 20

       VDN of Origin Annc. Extension:
                           1st Skill:
                           2nd Skill:
                           3rd Skill:
```

```
change vdn xxxxx                                                    page 2 of 2
                          VECTOR DIRECTORY NUMBER

                        Audix Name:
               Messaging Server Name:
                  Return Destination:
            VDN Timed ACW Interval:
                   BSR Application:
        BSR Available Agent Strategy: 1st-found
            Observe on Agent Answer?: n
```

**Screen 4-17. Vector Directory Number (Attendant Vectoring set to n) form**

When the Attendant Vectoring field is set to **y**, the VDN form appears like this

```
change vdn xxxxx                                              page 1 of 1
                          VECTOR DIRECTORY NUMBER

                           Extension: 2001
                                Name: vdn 2001
                       Vector Number: 1
                  Attendant Vectoring? y

                                 COR: 1
                                  TN: 1
                            Measured:
```

**Screen 4-18. Vector Directory Number (Attendant Vectoring set to y) form**

```
                        VECTOR DIRECTORY NUMBERS
                                                                  Event
                                VDN             Vec        Orig   Notif  Skills
Name                       Ext  Ovrd  COR TN Num  Meas  Annc   Adj 1st 2nd 3rd
Tech Support               50000  y    59  1  234  none  301
Customer Serv.             50001  n    1   1    1  none  302
New Orders                 50002  y    23  1    5  none  303
Denver                     50003  y    23  1  123  int   304
San Francisco              50004  y    39  1  123  ext   305
Chicago                    50005  y    12  1  123  both  306
```

**Screen 4-19. Vector Directory Numbers list form**

Make assignment as required for the following fields on the form:

- **Extension** — Enter the extension associated with the VDN when completing a paper form. The extension is a 1- to 5-digit number that starts with a valid first digit and length as defined by the System's dial plan. This is a display-only field when using an administration command such as add or change to access the form.
- **Name** — Enter up to a 27-character alphanumeric name that identifies the VDN. This is an optional field that need not contain any data. The name may be truncated on agents' displays depending on the application. When information is forwarded with an interflowed call, only the first 15 characters are sent. Default is blank.
- **Vector Number** — Enter a 1- to 3-digit vector number that specifies a particular call vector that is accessed through the VDN. Valid entries for the DEFINITY ECS R8csi/si are **1**-**512** and for the DEFINITY ECS R8r are **1**-**999**. Valid entries for the DEFINITY ECS R7vs/csi/si are **1**-**256** and for the DEFINITY ECS R7r are **1**-**512**. See the Capacities chapter for valid entries for switch release prior to Release 9. Default is **1**. The field cannot be blank.

- **Attendant Vectoring** — When Attendant Vectoring is optioned, a field on the VDN form identifies if this is an Attendant Vectoring VDN. If this field is **n**, there are no changes on the VDN form. If this field is **y**, the form appearance changes (see below).

  When removing a VDN, validation verifies that this VDN is not being used on either the Console Parameters form or the Tenant Partitioning forms.

  **NOTE:**
  Attendant Vectoring is used in non-call center environments. See the *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521, for more information.

- **Allow VDN Override?** — Valid entries are **y** and **n** (default). This entry affects the operation of an agent's display and certain options/data assigned to the VDN when a call is routed through several VDNs. If it is set to **n**, the name of this VDN appears on the agent's display and the VDN's AUDIX mail is accessed. If any subsequent VDNs are used to process this call, their names will not appear on the terminating display and the AUDIX mail for the original VDN is accessed. If the field is set to **y**, the name of the VDN appearing on the terminating display will depend on the administration and chaining of the subsequent VDNs and the AUDIX mail for the last VDN is accessed. Default is **n**.

  For Expert Agent Selection (EAS) (Category A only), if this field is **y** on the original VDN, the Skills of the new VDN will be used. If this field is **n** on the original VDN, the Skills of the original VDN will be used.

  For Best Service Routing (BSR) (Category A only), if this field is **y** on the original VDN, the BSR Application and Available Agent Strategy of the new VDN will be used. If this field is **n** on the original VDN, the BSR Application and Available Agent Strategy of the original VDN will be used.

- **COR** — Enter a 1- to 2-digit number that specifies the class of restriction (COR) to be assigned the VDN. The default value is **1**. The field cannot be blank and must have an entry in the range from **0**-**95**.

- **TN** — Enter the Tenant Partition number. Valid entries are **1**-**20**. The default value is **1**.

- **Measured** — Used to collect measurement data for this VDN. Valid entries for Category A only are **internal**, **external**, **both**, or **none**. Valid entries for Category B are **internal** or **none**. Data may be collected for reporting by BCMS or CMS. Default is **none**.

  **NOTE:**
  The BCMS feature must be enabled on the System-Parameters Customer-Options form for the Measured field to be set to **internal** or **both**. In addition, the appropriate CMS release must be administered on the Feature-Related System Parameters form if the field is being changed to **external** or **both**.

- **Service Objective (sec) (Category A only)** — Displayed in one of two cases:
  - — When the BCMS/VuStats Service Level option is enabled on the System-Parameters Customer-Options form and the Measured field is **internal** or **both**. Enter the number of seconds within which calls to this VDN should be answered. This will allow BCMS to print out a percentage of calls that were answered within the specified time. Valid entries are 0 through 9999 seconds. Default is blank.
  - — When the CentreVu Dynamic Advocate customer option is set on the System-Parameters Customer-Options form. This field enables the Dynamic Queue Position feature, which is new with CentreVu Advocate Release 9. The new feature allows you to queue calls from multiple VDNs to a single skill, while maintaining different service objectives for those VDNs. Enter the service level, in seconds, that you want to achieve for the VDN. Valid entries are 1 through 9999. The default value is 20.
- **VDN of Origin Annc. Extension (Category A only)** — Only displayed if VDN of Origin Announcements is enabled on the System-Parameters Customer-Options form.
  Enter the extension number of the VDN of Origin announcement. Default is blank.
- **1st/2nd/3rd Skill (Category A only)** — Only displayed when Expert Agent Selection is enabled on the System-Parameters Customer-Options form. Enter the desired Skill numbers (or leave blank) in each field. Valid entries are **1**-**99**, or blank (default).
- **AUDIX Name (Category A only)** — Only displayed for the DEFINITY ECS R5r and newer configurations. If this VDN is associated with the AUDIX vector, enter the name of the AUDIX machine as it appears in the Adjunct Names form.
- **Messaging Server Name (Category A only)** — Only displayed for the DEFINITY ECS R5r and newer configurations. If this VDN is associated with MSA, enter the name of the server as it appears in the Adjunct names form.
- **Return Destination (Category A only)** — The VDN extension number to which an incoming trunk call will be routed if it returns to vector processing after the agent drops the call. Valid entries are the VDN extension, or blank (default).
- **VDN Timed ACW Interval (Category A only)** — When a value is entered in this field, an agent in auto-in work mode who receives a call from this VDN is automatically placed into After Call Work (ACW) when the call drops. Enter the number of seconds the agent should remain in ACW following the call. When the administered time is over, the agent automatically becomes available. This field has priority over the **Timed ACW Interval** field on the Hunt Group form.
- **BSR Application (Category A only)** — To use multi-site Best Service Routing with this VDN, enter a 1- to 3-digit number to specify an application plan for the VDN. This field only appears if Look-Ahead Interflow (LAI) and Vectoring (Best Service Routing) are enabled on the System Parameters Customer-Options form.

- **BSR Available Agent Strategy (Category A only)** — The available agent strategy determines how Best Service Routing identifies the best split/skill to service a call in an agent surplus situation. To use Best Service Routing with this VDN, enter an agent selection strategy in this field. Acceptable entries are 1st-found, UCD-LOA, UCD-MIA, EAD-LOA, and EAD-MIA.

  This field only appears if Vectoring (Best Service Routing) is enabled on the System Parameters Customer-Options form.

- **Observe on Agent Answer?** — Valid entries are **y** and **n** (default). This entry allows for a service observer to start observing of a call to the VDN when the call is delivered to the agent/station.

## Implementation notes

- AUDIX Name and Messaging Server Name are only displayed for the DEFINITY ECS R5r and newer configurations.
- The BCMS feature must have been optioned if the Measured field is set to **internal** or **both**. In addition, the appropriate CMS release must be administered on the Feature-Related System Parameters form if the field is being changed to **external** or **both**.
- The 1st/2nd/3rd Skill fields are only displayed when Expert Agent Selection is enabled on the System-Parameters Customer-Options form.
- The BCMS Acceptable Service Level (sec) field is only displayed if the BCMS Acceptable Service Level option is enabled on the System-Parameters Customer-Options form and the Measured field is **internal** or **both**.
- Data for the Orig Annc column appears only when VDN of Origin Announcement is enabled on the System-Parameters Customer-Options form.
- To list all VDNs using the same BSR Application Plan, type the administration command **list VDN BSR *xxx*** (xxx is the number of the BSR Application Plan used by one or more VDNs).
- To associate VDNs and vectors for attendant vectoring, a field has been added to both the VDN and the Call Vectoring forms to indicate attendant vectoring. When attendant vectoring is indicated for VDNs and vectors, all call center-associated fields (such as Skills and BSR) are removed.

# Vector Routing Table (Category A only)

This form is used to store ANI or Digits that you refer to in *goto* vector steps. It is available to you only if the Vectoring (G3V4 Enhanced) field on the System-Parameters Customer-Options form is set to **y**.

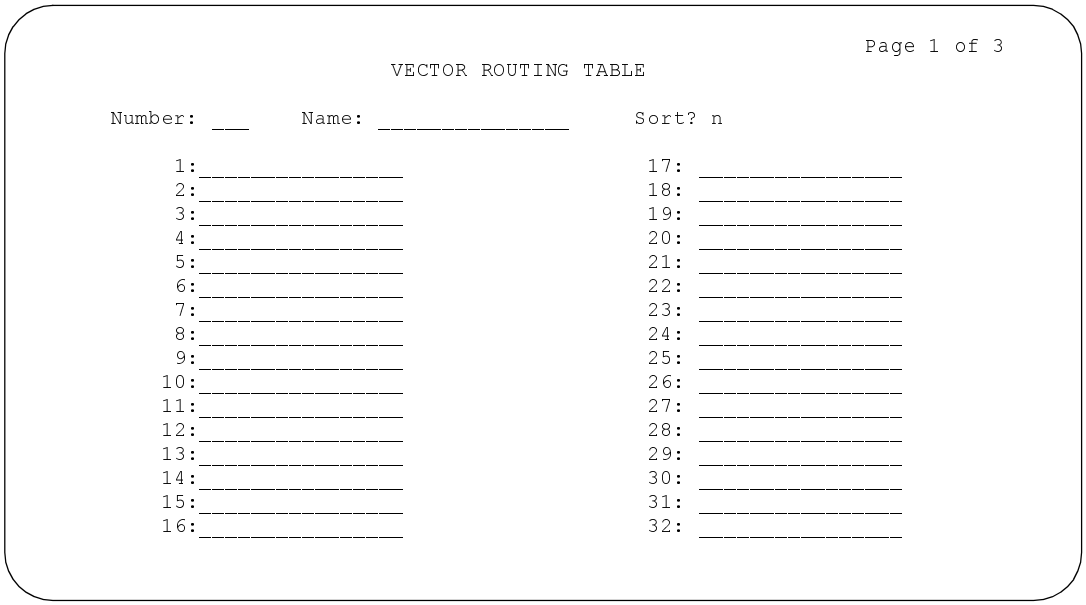
For more information, refer to ‘‘Call Vectoring’’ or to *DEFINITY ECS Call Vectoring/EAS Guide*, 555-230-521.

## Administration commands

You can use the commands listed in the table below to administer Vector Routing Tables. In addition, you can use the **List Usage** command to see the vectors and digit fields used by a Vector Routing Table.

| Action | Object | Qualifier |
|---|---|---|
| add | vrt | 1 through x, or next |
| change | vrt | 1 through x, or next |
| display | vrt | 1 through x, or next |
| remove | vrt | 1 through x, or next |
| list | vrt | none - all Routing Tables will display |

## Form instructions



```
                                                          Page 1 of 3
                          VECTOR ROUTING TABLE

Number: ___     Name: _______________      Sort? n

     1:_________________                  17: _________________
     2:_________________                  18: _________________
     3:_________________                  19: _________________
     4:_________________                  20: _________________
     5:_________________                  21: _________________
     6:_________________                  22: _________________
     7:_________________                  23: _________________
     8:_________________                  24: _________________
     9:_________________                  25: _________________
    10:_________________                  26: _________________
    11:_________________                  27: _________________
    12:_________________                  28: _________________
    13:_________________                  29: _________________
    14:_________________                  30: _________________
    15:_________________                  31: _________________
    16:_________________                  32: _________________
```

**Screen 4-20. Vector Routing Table form (1 of 3)**

Make assignment as required for the following fields on the form:

- **Number** — This is the table number that you entered on the command line. It is a display only field.
- **Name** — Enter a 1 to 15-character alphanumeric table name. You may leave this field blank. Default is blank.
- **Sort?** — Enter **y** if you want the digit fields to be sorted. Default is **n**. If you elect not to sort the numbers, they will remain in the order that you entered them. If you elect to sort the number fields, they will be sorted as described below. Remember that leading zeros are significant. That means that 02 will sort ahead of a 2 followed by a space.
  - — Any Plus signs (+) will sort first.
  - — Any question marks (?) will sort second.
  - — All numbers (0–9) will sort last.

- **Number (1-32)** — Enter a number. Default is blank. Entries in this field also can include the **+** and/or **?** wildcard. The **+** represents a group of digits. The **?** represents a single digit. The field is limited to 16 characters and these characters are restricted as follows:
  - — You may enter only a plus sign (+), a question mark (?), or the numbers 0 through 9. No other entries are valid.
  - — You may enter one plus sign (+) as either the first or last character in the number field. However, you cannot use this character as the sixteenth character of the number field.
  - — You may use as many question marks (?) as you wish, anywhere in the number field.
  - — You may not embed blanks in the number field.
  - — You may leave the field entirely blank. If you leave the field blank, the DEFINITY ECS will store the entry as a null value.

# VuStats Display Format (Category A only)

Use the VuStats Display Format form to define the content and layout of information on VuStats telephone displays. The system has 50 different display formats; the first display is a predefined example format, which can be changed; displays 2 through 50 are blank. Each display format can contain up to ten data items. However, the amount of data to be displayed is limited to 40 characters, due to the physical limitations on display telephones.

## Administration commands

Use the following administration commands to access the VuStats Display Format form.

| Action | Object | Qualifier[1] |
|---|---|---|
| change | vustats-display-format | 1-50 |
| display | vustats-display-format | 1-50 |
| list | vustats-display-format | 1-50 count ## |

1. Specify a number from 1 to 50 to indicate the number of the display format to be to changed or displayed. **Count ##** is the number of display formats to list.

## Form instructions

```
                          VUSTATS DISPLAY FORMAT
      Format Number: ___                  Object Type: _______________
  Next Format Number: _____            Update Interval: ___________ On Change? _
Data Field Character: _               Display Interval: _____________
 Number of Intervals:__

  Format Description: ________________________________________

     Data Type                                 Format  Period   Threshold Ref
  1: ________________________________________ _______ ________  __ ___    ___
  2: ________________________________________ _______ ________  __ ___    ___
  3: ________________________________________ _______ ________  __ ___    ___
  4: ________________________________________ _______ ________  __ ___    ___
  5: ________________________________________ _______ ________  __ ___    ___
  6: ________________________________________ _______ ________  __ ___    ___
  7: ________________________________________ _______ ________  __ ___    ___
  8: ________________________________________ _______ ________  __ ___    ___
  9: ________________________________________ _______ ________  __ ___    ___
 10: ________________________________________ _______ ________  __ ___    ___
```

**Screen 4-21. VuStats Display Format blank change/display form**

Screen 4-22 shows an example of a completed VuStats Display Format screen.

```
change display-format 11                                        Page   1 of   1
                            VUSTATS DISPLAY FORMAT
        Format Number: 11                   Object Type: agent
   Next Format Number: 12                Update Interval: 30          On Change? n
 Data Field Character: $
  Number of Intervals: 16

   Format Description: SPLIT=$$ ASL=$$ ASA=$$ PSL=$$$

      Data Type                                 Format  Period   Threshold  Ref
   1: split-number                                                          1
   2: split-acceptable-service-level            s                           1
   3: split-average-speed-of-answer             s       interval            1
   4: split-percent-in-service-level                    interval            1
   5:
   6:
   7:
   8:
   9:
  10:
```

**Screen 4-22. VuStats Display Format example change/display form**

Enter the data as required for the following fields on the form:

- **Format Number** — The system generates a format number automatically when it creates a VuStats display. You cannot change this number. You can create 50 different display formats. Format Number 1 is a predefined sample format that you can modify. See “Attendant Console form” in this section for more information
- **Object Type** — The type of object for which data will be displayed. Enter one of the following values: **agent** (for staffed agents to view their own statistics), **agent-extension** (for other users to view agent statistics), **split/skill** (default), **trunk-group**, or **vdn**.
  - **Agent** — Provides agents with their own statistics, or statistics about the splits/skills they log into.
  - **Agent-extension** — Provides supervisors with statistics about agents or the splits/skills the agents log into. VuStats can automatically display statistics for a specific agent (if you administer agent login ID or BCMS/Vustats Login ID). Or, supervisors can enter the ID of any agent they want to review.
  - **Split/Skill** — Displays statistics about a specific split/skill. You must administer the split/skill as Measured (internal or both) on the Hunt Group form.
  - **Trunk-group** — Displays statistics about a specific trunk group. You must administer the trunk group as Measured (internal or both) on the Trunk Group form.
  - **VDN** — Displays statistics about a specific VDN. You must administer the VDN as Measured (internal or both) on the Vector Directory Number form.

- **Next Format Number** — To link this display to another display, enter the number of the display format (between **1**-**50**) that should appear when a VuStats user presses the next button, or enter **none** (default). In general, you only link displays with the same object type.
- **Update Interval** — The interval, in seconds, between display updates. Enter one of the following values:

| Valid Input | Description |
|---|---|
| no-update | The display is not updated, and appears only for the interval specified in the Display Interval field |
| polled | Updates the display hourly or half-hourly, based on the value in **BCMS Measurement Interval** (System-Parameters Features form) |
| 10 | Updates every 10 seconds |
| 20 | Updates every 20 seconds |
| 30 | Updates every 30 seconds, default value |
| 60 | Updates every 1 minute |
| 120 | Updates every 2 minutes |

- **On Change** — Enter **y** to update the display whenever the agent's state changes. The update on agent state change is in addition to the update as a result of the value entered in the Update Interval field. If **n** is entered, an update will only occur based on the Update Interval and not on the agent state change.
- **Data Field Character** — The character that will be used in the Format Description field to identify the position and length of each data field (see the Format Description field description below). The default is **$**. Enter another character if the **$** is needed for fixed text in the Format Description field. Any character is valid except a space.
- **Display Interval** — The interval, in seconds, for which data is displayed if **no update** is entered in the Update Interval field. Enter one of the following values:

| Valid Input | Description |
|---|---|
| Body | |
| 5 | Display clears after 5 seconds |
| 10 | Display clears after 10 seconds, default value |
| 15 | Display clears after 15 seconds |
| 30 | Display clears after 30 seconds |
| not-cleared | The display does not clear, and the data appears until the display is used for another operation or until you press the Normal button. |

- **Number of Intervals** — Specify the number of BCMS intervals used to collect data when you have specified **interval** as the period for a historical Data Type. You can enter a number between **1** and **25**, or blank for current interval. The default is blank. If you enter 24, and the BCMS measurement interval on the Feature-Related System Parameters form is set to 1 hour, you will receive information on the previous 24 hours. If the BCMS measurement interval is set to half-hour, you will receive information on the previous 12 hours. You can also leave this field blank. If you do, you will receive information on the current interval.

- **Format Description** — The definition of the layout for the 40-character display. Specify the starting position and the length of the data items by entering, for each data field, an optional label for the field followed the appropriate number of data field characters (such as $s). Each **$** represents one character in the display. For example, if the data will be a maximum of five characters long (for example, to display 5-digit agent extensions), enter **$$$$$**.

  **NOTE:**
  Some data types have preset maximum field length limits based on the DEFINITY administration. For example, the data type **acceptable-service-level** is taken from the BCMS Acceptable Service Level field on the Hunt Group and Vector Directory Number forms; on this form, the field allows a maximum number of four characters. Therefore, for the acceptable-service-level, you should not create a VuStats display field that consists of more than four characters (that is, **$$$$**). Other data types have similar limits.

  Field lengths for data items that appear as time must match the value in the Format field, which is discussed below. Remember to account for possible colons when the display will be in a time format.

  Format descriptions can be all text (such as a message of the day) or they can be all data fields, in which case users will have to memorize the labels or use customer-provided overlays above or below the display.

  **NOTE:**
  If the numeric data for a field is too large for the number of data field characters entered, the VuStats display will show asterisks instead of data. If name database items are too large for the number of data field characters, the VuStats display will truncate the data to fit the data field size. The split/skill objective, as entered on the Hunt Group form, will display as asterisks if the information exceeds the data field size.

  If the data for a field is too large for the number of data field characters entered, VuStats displays asterisks. If name database items are too large for the number of data field characters, VuStats truncates the data. VuStats also displays Split/Skill Objective (assigned on the Hunt Group form) as asterisks if the information exceeds the data field size.

### Data Item Fields

On lines 1 through 10, beneath the Data Type field label enter data items for the display format. These data items are associated with the sets of data field characters in the Format Description field. Each data item is defined by one or more of the following fields: Data Type, Format, Period, Threshold, and Reference. Input for these fields is described in more detail below.

Enter each data item in the same order as data fields are defined in the Format Description field. For example, Line 1 of the Data Type field must contain the data item for the first data field (that is, the first set of $s).

- **Data Type** — The data item to be included in the current display format. For a complete list of data types available for each object type, see the ‘‘Required and allowed fields — split data types’’, ‘‘Agent and agent-extension data types’’, ‘‘Split data types’’, ‘‘VDN data types’’, and ‘‘Trunk group data types’’ tables for a description of data types associated with each object type. The default is blank.
- **Format** — The format for displaying the data type. The format is required only for a data type with a time value. Enter one of the following Format values.

| Valid Input | Description | Minimum Input Length |
|---|---|---|
| ccs | Hundred call seconds (CCS) rounded to the nearest CCS | 1 |
| h | Hours rounded to the nearest hour | 1 |
| h:mm | Hours and minutes rounded to the nearest minute | 4 |
| h:mm:ss | Hours, minutes, and seconds | 7 |
| m | Minutes rounded to the nearest minute | 1 |
| m:ss | Minutes and seconds | 4 |
| s | Seconds | 1 |

  Default is blank.

- **Period** — Enter the amount of time to be used to collect the historical data for display. If the data type is historical data, you cannot leave this field blank. Valid entries are **day** (midnight to the current time), **interval** (the time specified in the **Number of Intervals** field), or blank. Refer to ‘‘Tables of VuStats required and allowed fields’’ to determine if a measurement period is required for a particular Data Type. The default is blank.

- **Threshold** — The threshold field is always an optional field. It contains two subfields, the threshold comparator and the threshold value. The threshold value is used with the threshold comparator to determine if a threshold warning should be generated. A threshold warning is generated if the specified condition is met for one or more of the data items. If the specified condition is not met for any of the data items, then no threshold warning is generated. The threshold value can be any numeric value from **0** to **9999**. Default is blank. Valid threshold comparators are:
  - — = (equal to)
  - — <> (not equal to)
  - — < (less than)
  - — <= (less than or equal to)
  - — > (greater than)
  - — >= (greater than or equal to)

- **Ref** — A reference to a split/skill; this field does not appear unless the Object Type is either **agent** or **agent-extension**. This field is required only if the data type is an agent-related data type collected on a per-split/skill basis or a split/skill-related data type for one of the agent's logged-in splits/skills. Enter one of the following values:
  - — **Top** references the first-administered, highest-level skill for EAS agents, or the first split/skill logged into for non-EAS agents.

    **NOTE:**
    With EAS, the top skill for VuStats is the first administered, highest level skill measured **internally** or **both**. For CMS it is the first-administered, highest-level skill measured **externally** or **both**. Therefore, it is possible for the top skill to be a different number skill for CMS than it is for VuStats. To avoid this, measure all skills as **both**.

  - — **All** displays the combined data for all splits/skills the agent is logged into.
  - — Any number from **1-20**. The number represents a split/skill to which the agent has logged in. For example, if the Ref field contains **1**, VuStats displays the data for the first split/skill the agent logged into, if the Ref field contains **2**, VuStats displays the data for the second split/skill the agent logged into, and so on.

### List VuStats Display Format Screen

A second VuStats Display Format screen is available with the **list** command. The purpose of this screen is to present the format of all, or a selected number, of VuStats displays. The List VuStats Display Format screen displays the Format Number, Next Format Number, Number of Intervals, Object Type, Update Interval, and Format Description fields, and all designated data items, including the Data Type, Format, Threshold, and Ref (split/skill reference).

Use this screen to compare VuStats displays to each other. This list presentation is most helpful when trying to see how displays are linked to each other. The screen includes the Next field, which contains the number of the next display (if any) to which a display is linked.

Screen 4-23 shows an example of the List VuStats Display Format screen. The fields for this screen are described below. Refer to the previous field descriptions in this section for more information.

- **No** — Number. The unique identifying number of each display format.
- **Next** — The number of the next display if the current display is linked to (followed by) another display format, or **none** if the current display format is not linked to another display format.
- **Int** — Number of Intervals. The number of measurement intervals.
- **Object Type** — The type of object for which data will be displayed.
- **Update** — Update Interval. The time between display updates.
- **Format Description** — The definition of the display's layout. The first line of the Format Description contains the text that precedes the data on a display plus the length of each data field (indicated by $s). The succeeding lines of the Format Description identify the data items, in the order they are to appear. The data items are the actual measurements and other information that tell how agents, splits/skills, vector directory numbers (VDNs), trunk groups, and the call center are performing. The data items are followed by the format (if any), which identifies how the data is to appear in the display, the period and threshold (if any), and the split/skill reference (if any).

```
                                                                    Page   1
                            VUSTATS DISPLAY FORMATS
No Next Int Object Type     Update    Format Description
1  none     split           30        SPLIT=$$ WAITING=$$$ OLDEST=$$$$$
            split-number
            calls-waiting
            oldest-call-waiting            m:ss
2  none     agent-extension on-change AGENT=$$$$ STATE=$$$$$$$$$ TIME=$$$$$$$$
            agent extension
            agent state                                          1
            time-agent-entered-state                             1


press CANCEL to quit --  press NEXT PAGE to continue
```

**Screen 4-23. VuStats Display Formats list form**

## Tables of VuStats required and allowed fields

**Table 4-1. Required and allowed fields — agent and agent-extension data types**

| VuStats data type | Format | Period | Threshold | Reference |
|---|---|---|---|---|
| acd-calls | | required | allowed | required |
| agent-extension | | | | |
| agent-name | | | | |
| agent-state | | | | required |
| average-acd-call-time | required | required | allowed | |
| average-acd-talk-time | required | required | allowed | required |
| average-extension-time | required | required | allowed | |
| call-rate | | required | allowed | |
| current-reason-code | | | allowed | |
| current-reason-code-name | | | allowed | |
| elapsed-time-in-state | | | | |
| extension-calls | | required | allowed | |
| extension-incoming-calls | | | allowed | |
| extension-outgoing-calls | | | allowed | |
| shift-acd-calls | | | allowed | required |

*Continued on next page*

**Table 4-1. Required and allowed fields — agent and agent-extension data types (Continued)**

| VuStats data type | Format | Period | Threshold | Reference |
|---|---|---|---|---|
| shift-aux-time-1 | required | | allowed | |
| shift-aux-time-2 | required | | allowed | |
| shift-aux-time-3 | required | | allowed | |
| shift-aux-time-4 | required | | allowed | |
| shift-aux-time-5 | required | | allowed | |
| shift-aux-time-6 | required | | allowed | |
| shift-aux-time-7 | required | | allowed | |
| shift-aux-time-8 | required | | allowed | |
| shift-aux-time-9 | required | | allowed | |
| shift-aux-time-all | required | | allowed | |
| shift-aux-time-default | required | | allowed | |
| shift-aux-time-non-default | required | | allowed | |
| shift-aux-time-reason-code | required | | allowed | |
| shift-average-acd-talk-time | required | | allowed | required |
| skill-level | | | | required |
| split-acceptable-service-level | required | | | required |
| split-acd-calls | | required | allowed | required |
| split-after-call-sessions | | | allowed | required |
| split-agents-available | | | allowed | required |
| split-agents-in-after-call | | | allowed | required |
| split-agents-in-aux-1 | | | allowed | required |
| split-agents-in-aux-2 | | | allowed | required |
| split-agents-in-aux-3 | | | allowed | required |
| split-agents-in-aux-4 | | | allowed | required |
| split-agents-in-aux-5 | | | allowed | required |
| split-agents-in-aux-6 | | | allowed | required |
| split-agents-in-aux-7 | | | allowed | required |
| split-agents-in-aux-8 | | | allowed | required |
| split-agents-in-aux-9 | | | allowed | required |
| split-agents-in-aux-all | | | allowed | required |

*Continued on next page*

**Table 4-1. Required and allowed fields — agent and agent-extension data types (Continued)**

| VuStats data type | Format | Period | Threshold | Reference |
|---|---|---|---|---|
| split-agents-in-aux-default | | | allowed | required |
| split-agents-in-aux-non-default | | | allowed | required |
| split-agents-in-other | | | allowed | required |
| split-agents-on-acd-calls | | | allowed | required |
| split-agents-on-extension-calls | | | allowed | required |
| split-agents-staffed | | | allowed | required |
| split-average-acd-talk-time | required | required | allowed | required |
| split-average-after-call-time | required | | allowed | required |
| split-average-speed-of-answer | required | required | allowed | required |
| split-average-time-to-abandon | required | required | allowed | required |
| split-call-rate | | | allowed | required |
| split-calls-abandoned | | required | allowed | required |
| split-calls-flowed-in | | required | allowed | required |
| split-calls-flowed-out | | required | allowed | required |
| split-calls-waiting | | | allowed | required |
| split-extension | | | | required |
| split-name | | | | required |
| split-number | | | | required |
| split-objective | | | | required |
| split-oldest-calling-waiting | required | | allowed | required |
| split-percent-in-service-level | | required | allowed | required |
| split-total-acd-talk-time | required | required | allowed | required |
| split-total-after-call-time | required | required | allowed | required |
| split-total-aux-time | required | required | allowed | required |
| time-agent-entered-state | | | | required |
| total-acd-call-time | required | required | allowed | |
| total-acd-talk-time | required | required | allowed | |
| total-after-call-time | required | required | allowed | |
| total-aux-time | required | required | allowed | |

*Continued on next page*

**Table 4-1. Required and allowed fields — agent and agent-extension data types (Continued)**

| VuStats data type | Format | Period | Threshold | Reference |
|---|---|---|---|---|
| total-available-time | required | required | allowed | |
| total-hold-time | required | required | allowed | |
| total-staffed-time | required | required | allowed | |

**Table 4-2. Required and allowed fields — split data types**

| VuStats data type | Format | Period | Threshold |
|---|---|---|---|
| acceptable-service-level | required | | |
| acd-calls | | required | allowed |
| after-call sessions | | | allowed |
| agents-available | | | allowed |
| agents-in-after-call | | | allowed |
| agents-in-aux-1 | | | allowed |
| agents-in-aux-2 | | | allowed |
| agents-in-aux-3 | | | allowed |
| agents-in-aux-4 | | | allowed |
| agents-in-aux-5 | | | allowed |
| agents-in-aux-6 | | | allowed |
| agents-in-aux-7 | | | allowed |
| agents-in-aux-8 | | | allowed |
| agents-in-aux-9 | | | allowed |
| agents-in-aux-all | | | allowed |
| agents-in-aux-default | | | allowed |
| agents-in-aux-non-default | | | allowed |
| agents-in-other | | | allowed |
| agents-on-acd-calls | | | allowed |
| agents-on-extension-calls | | | allowed |
| agents-staffed | | | allowed |
| average-acd-talk-time | required | required | allowed |

*Continued on next page*

**Table 4-2. Required and allowed fields — split data types (Continued)**

| VuStats data type | Format | Period | Threshold |
|---|---|---|---|
| average-after-call-time | required | | allowed |
| average-speed-of-answer | required | required | allowed |
| average-time-to-abandon | required | required | allowed |
| call-rate | | | allowed |
| calls-abandoned | | required | allowed |
| calls-flowed-in | | required | allowed |
| calls-flowed-out | | required | allowed |
| calls-waiting | | | allowed |
| oldest-calling-waiting | required | | allowed |
| percent-in-service-level | | required | allowed |
| split-extension | | | |
| split-name | | | |
| split-number | | | |
| split-objective | | | |
| total-acd-talk-time | required | required | allowed |
| total-after-call-time | required | required | allowed |
| total-aux-time | required | required | allowed |

**Table 4-3. Required and allowed fields — VDN data types**

| VuStats data type | Format | Period | Threshold |
|---|---|---|---|
| acceptable-service-level | required | | |
| acd-calls | | required | allowed |
| average-acd-talk-time | required | required | allowed |
| average-speed-of-answer | required | required | allowed |
| average-time-to-abandon | required | required | allowed |
| calls-abandoned | | required | allowed |
| calls-flowed-out | | required | allowed |
| calls-forced-busy-or-disc | | required | allowed |

*Continued on next page*

**Table 4-3. Required and allowed fields — VDN data types**

| VuStats data type | Format | Period | Threshold |
|---|---|---|---|
| calls-offered | | required | allowed |
| calls-waiting | | | allowed |
| non-acd-connected-calls | | required | allowed |
| oldest-calling-waiting | required | | allowed |
| percent-in-service-level | | required | allowed |
| total-acd-talk-time | required | required | allowed |
| vdn-extension | | | |
| vdn-name | | | |

**Table 4-4. Required and allowed fields — trunk group data types**

| VuStats data type | Format | Period | Threshold |
|---|---|---|---|
| average-incoming-call-time | required | required | allowed |
| average-outgoing-call-time | required | required | allowed |
| incoming-abandoned-calls | | required | allowed |
| incoming-calls | | required | allowed |
| incoming-usage | required | required | allowed |
| number-of-trunks | | | |
| outgoing-calls | | required | allowed |
| outgoing-completed-calls | | required | allowed |
| outgoing-usage | required | required | allowed |
| percent-all-trunks-busy | | required | allowed |
| percent-trunks-maint-busy | | required | allowed |
| trunk-group-name | | | |
| trunk-group-number | | | |
| trunks-in-use | | | allowed |
| trunks-maint-busy | | required | allowed |

Table 4-5 through Table 4-8 on page 4-65 describe the data types you can define for each object type.

**Table 4-5. Agent and agent-extension data types**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| acd-calls | Split/skill calls and direct agent calls answered by an agent | Split status/VDN Status/Agent Report: ACD CALLS |
| agent-extension | The extension for a specific agent; if either BCMS/VuStats Login IDs or EAS is optioned, then this shows the agent's login ID. | Split Status: Login ID or EXT |
| agent-name | The administered name for a specific agent. | Split Status/Agent Report/Agent Summary Report: Agent |
| agent-state | The agent's current work state | Split Status: STATE |
| average-acd-call- time | The average of hold-time plus talk-time. | None |
| average-acd-talk- time | The average time a specific agent has spent talking on completed ACD calls during a specified time period for all internally-measured splits/skills that the agent was logged into. This does not include the time a call was ringing or was on hold at an agent's terminal. | Agent Report/Agent Summary Report: AVG TALK TIME |
| average-extension- time | The average amount of time an agent spent on non-ACD calls while logged into at least one split/skill during the reported interval. This average does not include time when the agent was holding the EXTN call. | Agent Report/Agent Summary Report: AVG EXTN TIME |
| call-rate | The current rate of ACD calls handled per agent per hour for all split/skills. | None |
| current-reason-code | The number of the Reason Code associated with the agent's current AUX work mode, or with the agent's logout. | None |
| current-reason-code- name | The name of the Reason Code associated with the agent's current AUX work mode or with the agent's logout. | None |
| elapsed-time-in-state | The amount of time an agent has been in the current state. | None |
| extension-calls | The number of incoming and outgoing non-ACD calls that an agent completed while logged into at least one split/skill. | Agent Report: EXTN CALLS |

***Continued on next page***

**Table 4-5. Agent and agent-extension data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| extension-incoming- calls | The number of non-ACD calls that an agent receives while logged into at least one split/skill. | Split Report: EXT IN CALLS |
| extension-outgoing- calls | The number of non-ACD calls that an agent places while logged into at least one split/skill. | Split Report: EXT OUT CALLS |
| shift-acd-calls | The number of ACD calls answered by an agent during the administered period. | None |
| shift-aux-time-1 | The amount of time an agent has spent in AUX work mode for Reason Code 1 during the administered period. | None |
| shift-aux-time-2 | The amount of time an agent has spent in AUX work mode for Reason Code 2 during the administered period. | None |
| shift-aux-time-3 | The amount of time an agent has spent in AUX work mode for Reason Code 3 during the administered period. | None |
| shift-aux-time-4 | The amount of time an agent has spent in AUX work mode for Reason Code 4 during the administered period. | None |
| shift-aux-time-5 | The amount of time an agent has spent in AUX work mode for Reason Code 5 during the administered period. | None |
| shift-aux-time-6 | The amount of time an agent has spent in AUX work mode for Reason Code 6 during the administered period. | None |
| shift-aux-time-7 | The amount of time an agent has spent in AUX work mode for Reason Code 7 during the administered period. | None |
| shift-aux-time-8 | The amount of time an agent has spent in AUX work mode for Reason Code 8 during the administered period. | None |
| shift-aux-time-9 | The amount of time an agent has spent in AUX work mode for Reason Code 9 during the administered period. | None |
| shift-aux-time-all | The amount of time an agent has spent in AUX work mode for all Reason Codes during the administered period. | None |

*Continued on next page*

**Table 4-5. Agent and agent-extension data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| shift-aux-time-default | The amount of time an agent has spent in AUX work mode for the default Reason Code (code 0) during the administered period. | None |
| shift-aux-time-non- default | The amount of time an agent has spent in AUX work mode for Reason Codes 1 through 9 during the administered period. | None |
| shift-aux-time-reason-code | The amount of time an agent has spent in AUX work mode for the agent's current Reason Code during the administered period. | None |
| shift-average-acd-talk-time | The average talk time for ACD calls for a specific agent during the administered period. | None |
| skill-level | The skill level at which the skill was assigned to the agent. | None |
| split-acceptable-service-level | The number of seconds within which calls must be answered to be considered acceptable. Identified on a per-hunt group basis. Timing begins when the call enters the hunt group queue. | Split Status: Acceptable Service Level |
| split-acd-calls | Split/skill calls and direct agent calls answered by an agent. | System Status/Split Report/Split Summary Report: ACD CALLS |
| split-after-call- sessions | The number of times all agents have entered After Call Work (ACW) for a specific split/skill. | None |
| split-agents-available | The number of agents currently available to receive ACD calls for a specific split. This includes agents in Auto-In or Manual-In work mode. | Split Status: Avail |
| split-agents-in-after- call | For a specific split, the number of agents currently in ACW. | Split Status: ACW |
| split-agents-in-aux-1 | For a specific skill, the number of agents currently in Aux work mode with Reason Code 1. | None |
| split-agents-in-aux-2 | For a specific skill, the number of agents currently in Aux work mode with Reason Code 2. | None |
| split-agents-in-aux-3 | For a specific skill, the number of agents currently in Aux work mode with Reason Code 3. | None |

*Continued on next page*

**Table 4-5. Agent and agent-extension data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| split-agents-in-aux-4 | For a specific skill, the number of agents currently in Aux work mode with Reason Code 4. | None |
| split-agents-in-aux-5 | For a specific skill, the number of agents currently in Aux work mode with Reason Code 5. | None |
| split-agents-in-aux-6 | For a specific skill, the number of agents currently in Aux work mode with Reason Code 6. | None |
| split-agents-in-aux-7 | For a specific skill, the number of agents currently in Aux work mode with Reason Code 7. | None |
| split-agents-in-aux-8 | For a specific skill, the number of agents currently in Aux work mode with Reason Code 8. | None |
| split-agents-in-aux-9 | For a specific skill, the number of agents currently in Aux work mode with Reason Code 9. | None |
| split-agents-in-aux- all | For a specific split/skill, the total number of agents currently in Aux work mode for all Reason Codes. | Split Status: AUX |
| split-agents-in-aux- default | For a specific split/skill, the number of agents currently in Aux work mode with the default Reason Code (code 0). | None |
| split-agents-in-aux-non-default | For a specific skill, the number of agents currently in Aux work mode with Reason Codes 1 through 9. | None |
| split-agents-in-other | The number of agents currently who: are on a call for another split, are in ACW work mode for another split, have a call on hold but are not in another state, or have a call ringing at their terminals, or are dialing a number while in AI/MI. | Split Status: Other |
| split-agents-on-acd- calls | The number of agents currently on split/skill or direct agent ACD calls for a specific split. | Split Status: ACD |
| split-agents-on-extension-calls | The number of agents in a specific split who are currently on non-ACD calls. | Split Status: Extn |

***Continued on next page***

**Table 4-5. Agent and agent-extension data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| split-agents-staffed | The number of agents currently logged into a split. | Split Status: Staffed |
| split-average-acd-talk-time | The average talk time for ACD calls during a specific period/day for a specified split. | System Status/Split Report/Split Summary Report: AVG TALK TIME |
| split-average-after-call-time | The average time for call-related ACW completed by agents for this split (the same as average-after-call-time, but only available for agent and agent-extension object types). Call-related ACW time is recorded when an agent leaves the ACW state. If an agent is in call-related ACW when an interval completes, all of the ACW time will be recorded for the interval in which the agent leaves ACW. | System Status: AVG AFTER CALL |
| split-average-speed-of-answer | The average speed for answering split and direct agent ACD calls that have completed for a specified split/skill. | System Status/Split Report/Split Summary Report: AVG SPEED ANS |
| split-average-time-to-abandon | The average time calls waited in queue and ringing before abandoning. | System Status/Split Report/Split Summary Report: AVG ABAND TIME |
| split-call-rate | The current rate of ACD calls handled per agent per hour for a specific split or skill. | None |
| split-calls- abandoned | The number of calls that abandoned from queue (provided this is the first split/skill queued to) or abandoned from ringing. | System Status/Split Report/Split Summary Report: ABAND CALLS |
| split-calls-flowed-in | The total number of calls for a specific split/skill that were received as a coverage point (intraflowed) from another internally-measured split/skill, or were call-forwarded (interflowed) to the split/skill. | Split Report/Split Summary Report: FLOW IN |
| split-calls-flowed-out | The total number of calls for a specific split/skill that successfully extended to the split/skill's coverage point, were call-forwarded out, or were answered via call pick-up. | Split Report/Split Summary Report: FLOW OUT |
| split-calls-waiting | The number of calls that have encountered a split but have not been answered, abandoned, or outflowed. | System Status: CALLS WAIT |

***Continued on next page***

**Table 4-5. Agent and agent-extension data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| split-extension | The administered extension for a split. | None |
| split-name | The administered name for a split/skill. | Split Report/Split Status: Split Name System Status: SPLIT |
| split-number | The administered number for a split/skill. | Split Report/Split Status: Split Name System Status: SPLIT |
| split-objective | The administered objective for a split/skill. | None |
| split-oldest-call- waiting | The time the oldest call has been waiting for a specific split/skill. | System Status: OLDEST CALL |
| split-percent-in-service-level | For a specific split/skill, the percentage of calls answered within the administered service level on the hunt group form. | System Status/Split Report/Split Summary Report: % WITHIN SERVICE LEVEL |
| split-total-acd-talk- time | For a specified split/skill, the total time agents spent talking on split/skill calls and direct agent calls for this split. | None |
| split-total-after-call- time | The total time an agent spent in call-related ACW for this split/skill and non-call-related ACW for any split/skill during a specific time period, excluding time spent on incoming or outgoing extension calls while in ACW. | Split Report/Split Summary Report: TOTAL AFTER CALL |
| split-total-aux-time | The total time an agent spent in AUX mode for this split/skill. | Split Report/Split Summary Report: TOTAL AUX/OTHER |
| total-acd-call-time | The total talk time plus the total hold time for split/skill and Direct Agent ACD calls. | None |
| total-acd-talk-time | The total time agents spent talking on split/skill calls and direct agent calls. | None |
| total-after-call-time | The total time an agent spent in call-related or non-call-related ACW for any split during a specific time period, excluding time spent on incoming or outgoing extension calls while in ACW. (With EAS, all non-call related ACW time is associated with the first skill logged into.) | Agent Report/Agent Summary Report: TOTAL AFTER CALL |

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**Table 4-5. Agent and agent-extension data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| total-aux-time | The total time an agent spent in AUX work for all splits/skills (simultaneously) that the agent was logged into. If an agent entered AUX in one interval, but ended AUX in another, each of the intervals will reflect the appropriate amount of time spent in the interval (agent reports also include OTHER time). | Agent Report/Agent Summary Report: TOTAL AUX/OTHER |
| total-available-time | The time an agent was available in at least one split/skill. | Agent Report: TOTAL AVAIL TIME |
| total-hold-time | The total amount of time ACD calls were on hold at a specific agent's phone. This time is the "caller's hold time" and is independent of the agent's state. This time does not include hold time for non-ACD calls on hold. | Agent Report: TOTAL HOLD TIME |
| total-staffed-time | The total amount of time an agent was logged into one or more splits/skills during a specific period/day. An agent is clocked for staff time as long as he or she is logged into any split. | Agent Report: TOTAL TIME STAFFED |

**Table 4-6. Split data types**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| acceptable-service-level | The number of seconds within which calls must be answered to be considered acceptable. Identified on a per-hunt group basis. Timing begins when the call enters the hunt group queue. | Split Status/Split Report: Acceptable Service Level |
| acd-calls | Split calls and direct agent calls answered by an agent | Split status/VDN Status/Agent Report: ACD CALLS |
| after-call sessions | The number of times all agents have entered After Call Work (ACW). | None |
| agents-available | The number of agents currently available to receive ACD calls. This includes agents in Auto-In or Manual-In work mode. | Split Status: Avail |

***Continued on next page***

**Table 4-6. Split data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| agents-in-after-call | The number of agents currently in ACW mode. | Split Status: ACW |
| agents-in-aux-1 | The number of agents currently in Aux work mode for Reason Code 1 for the referenced skill. | None |
| agents-in-aux-2 | The number of agents currently in Aux work mode for Reason Code 2 for the referenced skill. | None |
| agents-in-aux-3 | The number of agents currently in Aux work mode for Reason Code 3 for the referenced skill. | None |
| agents-in-aux-4 | The number of agents currently in Aux work mode for Reason Code 4 for the referenced skill. | None |
| agents-in-aux-5 | The number of agents currently in Aux work mode for Reason Code 5 for the referenced skill. | None |
| agents-in-aux-6 | The number of agents currently in Aux work mode for Reason Code 6 for the referenced skill. | None |
| agents-in-aux-7 | The number of agents currently in Aux work mode for Reason Code 7 for the referenced skill. | None |
| agents-in-aux-8 | The number of agents currently in Aux work mode for Reason Code 8 for the referenced skill. | None |
| agents-in-aux-9 | The number of agents currently in Aux work mode for Reason Code 9 for the referenced skill. | None |
| agents-in-aux-all | The number of agents currently in Aux work mode for all Reason Codes for the referenced split/skill. | Split Status: AUX |
| agents-in-aux-default | The number of agents currently in Aux work mode for the default Reason Code (code 0) for the referenced split/skill. | None |
| agents-in-aux-non- default | The number of agents currently in Aux work mode for Reason Codes 1 through 9 for the referenced skill. | None |

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**Table 4-6. Split data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| agents-in-other | The number of agents who currently: are on a call for another split, are in ACW work mode for another split, have a call on hold but are not in another state, or have a call ringing at their terminal, or are dialing a number from AI/MI mode. | Split Status: Other |
| agents-on-acd-calls | The number of agents currently on split/skill or direct agent ACD calls for a specific split. | Split Status: ACD |
| agents-on-extension- calls | The number of agents in a specific split who are currently on non-ACD calls. | Split Status: Extn |
| agents-staffed | The number of agents currently logged into the specified split. | Split Status: Staffed |
| average-acd-talk-time | The average talk time for ACD calls during a specific period/day for a specified split. | System Status/Split Report: AVG TALK TIME |
| average-after-call- time | The average time for call-related ACW completed by agents in this split. Call-related ACW time is recorded when an agent leaves the ACW state. If an agent is in call-related ACW when an interval completes, all of the ACW time will be recorded for the interval in which the agent leaves ACW. | System Status: AVG AFTER CALL |
| average-speed-of- answer | The average speed for answering split/skill and direct agent ACD calls that have completed for a specified split/skill during a specified time. This includes queue time and ringing time for this split. | System Status/Split Report: AVG SPEED ANS |
| average-time-to- abandon | The average time calls waited before abandoning. | System Status/Split Report: AVG ABAND TIME |
| call-rate | The current rate of ACD calls handled per agent per hour for all split/skills. | none |
| calls-abandoned | The number of calls that abandoned. | System Status/Split Report: ABAND CALLS |

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**Table 4-6. Split data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| calls-flowed-in | The total number of calls for a specific split that were received as a coverage point (intraflowed) from another internally-measured split, or were call-forwarded (interflowed) to the split. This does not include calls that were interflowed from a remote switch by the Look Ahead Interflow feature. | Split Report/Split Summary Report: FLOW IN |
| calls-flowed-out | The number of calls the split extended to its coverage point, calls that call-forward out or are answered by call pickup, calls that queued to this split as a primary split and were answered or abandoned from ringing in another split. | Split Report/Split Summary Report: FLOW OUT |
| calls-waiting | The number of calls that have encountered a split/skill but have not been answered, abandoned, or outflowed. | System Status: CALLS WAIT |
| oldest-call-waiting | The time the oldest call has been waiting in the split/skill. Timing begins when the call enters the split/skill. | System Status: OLDEST CALL |
| percent-in-service- level | The percentage of calls offered to the split that were answered within the service level administered on the hunt group form. | System Status/Split Report/Split Summary Report: % IN SERV LEVL |
| split-extension | The administered extension for a split. | None |
| split-name | The administered name for a split. | Split Report/Split Status: Split Name System Status: SPLIT |
| split-number | The administered number for a split. | Split Report/Split Status: Split Name System Status: SPLIT |
| split-objective | The administered objective for a split. | None |
| total-acd-talk-time | The total time agents spent talking on split/skill calls and direct agent calls for this split. | None |

***Continued on next page***

**Table 4-6. Split data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| total-after-call-time | The total time agents spent in call-related or non-call-related ACW for any split during a specific time period. | Split Report/Split Summary Report: TOTAL AFTER CALL |
| total-aux-time | The total time agents spent in AUX work mode for all Reason Codes for the referenced split/skill during the administered period. | Split Report/Split Summary Report: TOTAL AUX/OTHER |

**Table 4-7. VDN data types**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| acceptable-service- level | The number of seconds within which calls must be answered to be considered acceptable. Identified on a per-VDN basis. Timing begins when the call enters the vector. | VDN Status/VDN Report: Acceptable Service Level |
| acd-calls | Split calls and direct agent calls answered by an agent | VDN Status: ACD CALLS |
| average-acd-talk-time | The average talk time for ACD calls during a specific period/day for a specified VDN. | VDN Status/Split Report: AVG TALK HOLD |
| average-speed-of- answer | The average speed for answering ACD and CONNect calls that have completed for a specified VDN during a specified time. This includes time in vector processing. | VDN Status/VDN Report/VDN Summary Report: AVG SPEED ANS |
| average-time-to- abandon | The average time calls waited before abandoning. | VDN Status/VDN Report: AVG ABAND TIME |
| calls-abandoned | The number of calls that abandoned. | VDN Status/VDN Report/VDN Summary Report: ABAND CALLS |
| calls-flowed-out | The total number of calls for a specific VDN that successfully routed to another VDN or off the switch. | VDN Status/VDN Report/VDN Summary Report: FLOW OUT |

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**Table 4-7. VDN data types (Continued)**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| calls-forced-busy-or- disc | The number of calls given forced busy or forced disconnect. | VDN Status/VDN Report/VDN Summary Report: CALLS BUSY/DISC |
| calls-offered | All calls offered to a VDN, including ACD calls, connected calls, abandoned calls, busy calls (calls that received a busy signal), disconnected calls (calls disconnected by the switch), and outflow calls (calls directed to another VDN or off-switch destination). | VDN Status/VDN Report/VDN Summary Report: CALLS OFFERED |
| calls-waiting | The number of calls that have encountered a VDN, but have not been answered, abandoned, or outflowed. | VDN Status: CALLS WAIT |
| non-acd-connected-calls | The number of non-ACD calls routed from a specific VDN that were connected to an extension. | VDN Status/VDN Report/VDN Summary Report: CONN CALLS |
| oldest-calling-waiting | The time the oldest call has been waiting in the VDN. Timing begins when the call enters the vector. | VDN Status: OLDEST CALL |
| percent-in-service- level | The percentage of calls offered to the VDN that were answered within the service level administered for the VDN. | VDN Status/VDN Report/VDN Summary Report: % IN SERV LEVL |
| total-acd-talk-time | The total time agents spent talking on split/skill calls and direct agent calls. | None |
| vdn-extension | The extension of a vector directory number (VDN). | VDN Status/VDN Report: VDN EXT |
| vdn-name | The name of a vector directory number (VDN). | VDN Status/VDN Summary Report: VDN NAME |

**Table 4-8. Trunk group data types**

| VuStats data type | Description | BCMS report: field name/column heading |
|---|---|---|
| average-incoming-call-time | Average holding time for incoming trunk calls. | Trunk Group: INCOMING TIME |
| average-outgoing-call-time | Average holding time for outgoing trunk calls. | Trunk Group: OUTGOING TIME |
| incoming-abandoned-calls | Incoming calls abandoned during a specified time period for a specified trunk group. | Trunk Group: INCOMING ABAND |
| incoming-calls | Incoming calls carried by a specified trunk group. | Trunk Group: INCOMING CALLS |
| incoming-usage | The total trunk holding time for incoming calls in hundred call seconds. | Trunk Group: INCOMING CCS |
| number-of-trunks | The number of trunks in a specified trunk group. | Trunk Group: Number of Trunks |
| outgoing-calls | The number of outgoing calls carried by a specified trunk group. | Trunk Group: OUTGOING CALLS |
| outgoing-completed- calls | The number of outgoing calls that received answer supervision or answer timeout. | Trunk Group: OUTGOING COMP |
| outgoing-usage | The total trunk holding time for outgoing calls in hundred call seconds. | Trunk Group: OUTGOING CCS |
| percent-all-trunks- busy | The percent of time all the trunks in a specified trunk group were busy during a specified period/day. Timing for a call begins when the last trunk is seized. | Trunk Group: % ALL BUSY |
| percent-trunks-maint-busy | The percent of time trunks were busied out for maintenance during a specified period/day. | Trunk Group: % TIME MAINT |
| trunk-group-name | The name administered for a specific trunk group. | Trunk Group: Trunk Group Name |
| trunk-group-number | The number administered for a specific trunk group. | Trunk Group: Trunk Group Number |
| trunks-in-use | The number of trunks currently in use (not idle). | None |
| trunks-maint-busy | The number of trunks currently busied out for maintenance. | None |

# Recorded announcements

A

## Introduction

The Recorded Announcement feature provides an announcement to callers under a variety of circumstances. For example, announcements let callers know that their call is in queue or that the lines are busy.

This appendix gives you extended information about using the recorded announcement feature of the DEFINITY. The sections included in this appendix are:

- How to Administer Recorded Announcements
- Recorded Announcement Types
- When to Use Recorded Announcements
- About Barge-in
- Integrated Announcements and Announcements Recorded on External Devices
- Procedures for Recorded Announcements
- Recorded Announcements, the ACD, and other Call Center Features
- Recorded Announcements and Automatic Wakeup

Refer to the “Managing announcements” and “Recorded announcements” chapters in the *DEFINITY ECS Administrator’s Guide*, 555-233-506, for procedural instructions on adding, recording, saving, copying, restoring, and deleting announcements.

# Administering recorded announcements

The following table lists the forms that you will use to administer announcements.

**Table A-1. Required forms**

| Form | Field |
|---|---|
| Announcements/Audio Sources (includes Integrated Announcement Translations) | ■ All |
| Feature Access Code (FAC) | ■ Announcement Access Code |
| Station | ■ COS |
| Data Modules (for Save/Restore/Copy)<br>■ Netcon Data Module<br>■ System Port Data Module (SAP)<br>■ Announcement Data Module | ■ All |
| Circuit Packs[1] | ■ All |
| Feature-Related System Parameters[2] | ■ DID/Tie/ISDN Intercept Treatment<br>■ Controlled Outward Restriction Intercept Treatment<br>■ Controlled Termination restriction (DoNot Disturb)<br>■ Controlled Station-to-Station Restriction |
| Hospitality[2] | ■ Announcement Type<br>■ Length of Time to Remain Connected to Announcement |
| Trunk Groups (All)[2] | ■ Incoming Destination |
| Coverage Path[2] | ■ Coverage Points |
| Hunt Group[2] | ■ First Announcement Extension<br>■ Second Announcement Extension |
| Call Vector[2] | ■ All fields that require announcements |

1. You only need to complete the Circuit Pack form if you administer the Board Location on the Announcements/Audio sources form or Data Module form and do not have the circuit pack plugged in.
2. You only need to complete this form if you plan to use Recorded Announcements with the form's associated feature. For example, if you want to use announcements with the Hospitality features, you need to complete the Hospitality form.

# Recorded announcement types

The DEFINITY supports several recorded announcement types. Each support announcement type is described below.

## Analog line types

If you are using an analog line, then it is required that you use an external announcement machine for recorded announcements. The external announcement machine must be connected by an analog line port.

### Analog

The analog announcement type provides an analog voice terminal interface via an analog line port for use with an announcement/audio source device that emulates analog voice terminals. The DEFINITY starts playback by applying ringing; the device indicates playback has stopped by going on-hook (opening the loop). The DEFINITY does not indicate to the device to stop playback. Use the analog type for announcements that play for a specific period and then go on-hook at the end. When the device goes on-hook to indicate that the playback ended, the caller listening to the announcement hears a click. (See ds1, aux-trk, or integrated types for alternative types).

### Analog-fd

Like the analog type, analog-fd provides an analog line interface and ringing starts the playback. However, a forward disconnect signal (open loop for about one-half second) is sent to the device to stop playback when there are no callers left to hear it.

### Analog-m

Like the analog type, analog-m provides an analog line interface. However, ringing is not applied to start playback. Use this type for continuous playing music or audio sources. The device stays in an off-hook state when active and goes on-hook when it is not playing, is turned off, or is disconnected. This announcement type is used when the Q field is set to **b** to provide barge-in repeating or continuous-play announcements.

## DS1 types

The DS1 types provide analog-like interfaces via DS1 line ports, which are called Line Side DS1 or Line Side T1. Each of these types indicate to the announcement, music, or audio-source device to start playback via the Line Side T1 equivalent of ringing. The DS1 types also expect off-hook from the device to indicate that the playback is active and on-hook to indicate that the playback is not active.

The ds1-id and ds1-sa types provide a forward disconnect via transitions of the "A" signaling bit to the device, which indicates when playback should be stopped. Callers listening to announcements do not hear clicks when the device disconnects (goes on-hook).

### ds1-fd

The ds1-fd announcement type provides an EIA/TIA foreign-exchange (FX) type DS1 interface. The forward disconnect signal is a toggle of the "A" bit from 0 to 1 and then back to 0 after 600 msecs. This type is used for Conversant Line Side T1 ports when they are used as an analog-like announcement device and is the recommended method for interfacing.

### ds1-sa

The ds1-sa announcement type provides an EIA/TIA special-access type DS1 interface. The forward disconnect signal is a toggle of the "A" bit from 1 to 0 and then back to 1 after 600 msecs.

### ds1-ops

The ds1-ops announcement type provides an EIA/TIA off-premises-station type DS1 interface that is used when the device does not support forward disconnect.

## Auxiliary trunk types

The Auxiliary Trunk announcement type supports an external announcement machine connected via a 4-wire auxiliary trunk interface, such as a 15A announcement system. The DEFINITY indicates to the device to start or stop the playback on the S lead; the device indicates that the playback is active on the S1 lead.

### aux-trunk

Use the aux-trunk (auxiliary trunk) announcement type with a 4-wire interface external device when the playback is to be stopped and started by way of the S1 lead and S1 is used by the device to indicate playback started.

### aux-trk-m

Use the aux-trk-m (auxiliary trunk music) with a 4-wire interface device for continuously playing music or audio sources that do not indicate that playback is active on the S1 lead. This announcement type is used when the Q field is set to **b** to provide barge-in repeating or continuous-play announcements

## Integrated types

The integrated announcement type is stored internally on the DEFINITY on an Integrated Announcement circuit pack (TN750 or TN2501AP). The TN750 circuit pack has 16 ports and the TN2501AP circuit pack has 31 ports that are available for playing announcements. This is the recommended source for VDN of Origin Announcements and other general and ACD announcement needs.

### integrated

Use the integrated announcement type for announcements that are stored on the switch in TN750 or TN2501AP announcement circuit packs. This announcement type is recommended for general, ACD, and vectoring announcements and for VDN of Origin Announcements.

### integ-rep

The integ-rep (integrated-repeating) announcement type is used to provide integrated, repeating automatic wakeup announcements and is implemented along with the multi-integ hospitality announcement type setting.

## When to use recorded announcements

The following list summarizes the most common instances of recorded announcement use:

- DID calls cannot be completed as dialed.
- Incoming private-network access calls cannot be completed as dialed.
- Calls enter a split or skill (first announcement).
- DDC, UCD, or direct-agent calls have been in queue for an assigned interval.
- ACD and Call Vectoring calls have been in queue for an assigned interval.
- A call's destination is a recorded-announcement extension.
- A call routes to a vector that contains an announcement step.
- An announcement extension is specified as a coverage point.
- An announcement is the incoming destination of a trunk group.
- VDN of Origin announcement.
- Security violation notification.
- The Hospitality Automatic Wakeup feature is in use.

# About barge-in

Normally, the system connects multiple callers to the beginning of an announcement, regardless of announcement type. However, you can also administer auxiliary trunk announcements, DS1 announcements, and integrated announcement to allow callers to begin listening to an announcement after the system has begun playing its message. This capability is called “barge-in.”

## What happens when you use barge-in

When you administer “barge-in” by setting the Q field to **b**, only one port plays the announcement at any one time. When the system routes a call to that announcement, the call immediately connects to the port and the caller hears the announcement as it is playing. Most administrators administer barge-in announcements to repeat continually while callers are connected to the port. In this way, the caller listens until the system plays the entire announcement.

## What happens When you do not use barge-in

If an announcement port is available when a call arrives, the system connects the call to the announcement.

If an announcement port is not available and the announcement is administered with “no” as the queue option, the call does not enter the queue for the announcement and the caller hears busy or other feedback, depending upon how the announcement was accessed.

If an announcement port is not available and the announcement is administered with ‘yes” as the queue option, the call enters the announcement queue. When a port becomes available, the DEFINITY connects the calls waiting in the queue to the beginning of the announcement. The system first connects the call that has been waiting in queue the longest and then connects as many calls as it can.

## Integrated announcements and announcements recorded on external devices

Recorded Announcement allows you to administer either integrated announcements or announcements recorded on external devices. The external devices connect to the switch via analog line circuit packs or auxiliary trunk interfaces, such as a TN2183 or a TN763.

The system stores an integrated announcement on a TN750, TN750B, TN750C, or TN2501AP integrated-announcement circuit pack. The system can store multiple announcements on each circuit pack up to the system capacity. See the *DEFINITY ECS Administrator's Guide*, 555-233-506, for capacity information.

**NOTE:**
The TN750C is replaced with the TN2501AP effective with DEFINITY R9.5. A mixture of TN750C and TN2501AP circuit packs is supported.

Each TN2501AP integrated-announcement circuit pack allows up to 1 hour of uncompressed voice storage, has 31 playback ports (can play up to 31 simultaneous announcements) and 1 dedicated port for telephone access to be used for recording and playback. The TN2501AP is connected to the customer LAN to enable announcement file transfers to take place by way of FTP from a computer. Announcements are RIFF wave files that are recorded as CCITT u-law/a-law, 8kHz, 8-bit mono files using a utility such as Microsoft's Sound Recorder on a computer or using a DEFINITY telephone.

Each TN750 circuit pack has 16 ports and can play up to 16 simultaneous announcements. The DEFINITY can connect multiple users to each of these announcements.

Any announcement stored on a a circuit pack can play through any port on the circuit pack. Any announcement (not administered for barge-in) can play simultaneously through multiple ports. For instance, all 31 ports on the TN2501AP can play the same announcement at the same time.

You must set the Q field to **y** on the Announcements/Audio Sources form for each extension that you want to queue for Integrated Announcements. Calls that hear integrated announcements at extensions that have queue assigned only queue when all of the ports on the circuit pack that contains the announcement are busy. The TN750 has 16 ports and the TN2501AP has 31 ports. The same queueing pool is used over all boards. The DEFINITY controls the announcement queue length for integrated announcements, but you must set the queue length for analog or aux-trunk announcements.

### Single integrated announcement boards

When your switch has one integrated announcement circuit pack, the circuit pack can be a TN2501AP, TN750, a TN750B, or a TN750C.

### TN750 and TN750B

You need to back up a TN750 or TN750B in the following situations:

- Before someone removes a TN750 or TN750B from the switch
- Before someone shuts down power to the switch.

In both situations, the system loses any announcements stored on the circuit pack. Therefore, you need to backup announcements stored on the TN750 or TN750B circuit packs to the Mass Storage System (MSS). When someone inserts or resets a circuit pack, or when someone powers up the system, the DEFINITY checks the circuit pack for announcements. If the system determines that there are no announcements on the circuit pack, then it automatically restores the announcements from the MSS. Only one TN750 can be stored in MSS.

**CAUTION:**

*The announcements from MSS that are automatically restored are the last announcement saved to MSS. If multiple circuit packs are used, MSS might not contain the announcement for the B or A circuit pack.*

### TN2501AP and TN750C

The TN750C circuit pack has on-board FLASH memory backup, which substantially reduces the time required for power-up restore and eliminates the need for a manual save of the circuit pack contents.

The system retains announcements on the circuit packs, even when someone removes the circuit pack or when the system loses power. Therefore, the TN2501AP and the TN750C do not require the save and restore procedure. However, you can still use the save and restore procedure to copy the contents of a TN750C to another circuit pack.

**NOTE:**

The contents of the TN2501AP cannot be saved to the MSS. To copy the contents of the TN2501AP, use FTP to transfer the information to a computer for storage.

## Multiple integrated announcement circuit packs

Multiple integrated announcement circuit packs can be installed in the DEFINITY si and r packages. However, only one of these circuit packs can be a TN750 or a TN750B. Any additional circuit packs must be TN2501AP or TN750C circuit packs. The DEFINITY csi/si allows for up to 5 circuit packs. The DEFINITY r allows for up to 10 circuit packs.

**CAUTION:**

*Do not copy announcements from a TN750C to a TN750 or TN750B. This action may corrupt the announcement data.*

## Compression rates

Two options are available with the TN2501AP circuit pack, a high-end offer and a low-end offer. The offer is set by way of the `VAL Full 1-Hour Capacity` and the `Maximum VAL Boards` fields on the Customer Options form. See the *DEFINITY What's New for Release 9.5*, 555-233-418, and the *DEFINITY ECS Administrator's Guide*, 555-233-506, for details.

With the high-end TN2501AP circuit pack offer, up to 1 hour of uncompressed recorded announcements can be stored on each circuit pack.

With the low-end TN2501AP circuit pack offer, up to 10 minutes of uncompressed recorded announcements can be stored on each circuit pack. Compression is not supported with the TN2501AP circuit pack.

The system stores integrated announcements on the TN750 at a compression rate of 32 Kbps. The system can store integrated announcements at one of three compression rates on the TN750B and TN750C circuit packs. You administer the compression rate separately for each announcement extension. In this way, the system can store announcements with different compression rates on the same circuit pack. During playback, the switch sets the port to the correct compression rate for the announcement that is playing.

- A 64-Kbps compression rate allows for 128 seconds of recorded announcement per circuit pack.
- A 32-Kbps compression rate allows for 256 seconds of recorded announcement per circuit pack. This is the default compression rate.
- A 16-Kbps compression rate allows for 512 seconds of recorded announcement per circuit pack. The 16-Kbps rate does not provide a high-quality recording. It is not recommended for customer announcements, but is adequate for VDN of Origin announcements.

## Procedures for recorded announcements (TN2501AP)

You can transfer to and from a computer or delete announcement files over the LAN for the TN2501AP using the Voice Announcement over the LAN Manager software or using an FTP client in conjunction with SAT commands. For information on performing this type of transfer, see the *VAL Manager*, 555-233-223.

Announcements for the TN2501AP circuit pack can also be recorded using the procedures discussed below. For additional information, see the *DEFINITY What's New for Release 9.5*, 555-233-418, and the *DEFINITY ECS Administrator's Guide*, 555-233-506.

## Procedures for recorded announcements (TN750, TN750B, TN750C, and TN2501AP)

You can record, play back, or delete integrated announcements by initiating an announcement session. To do this, you must have console permissions assigned to your Class of Service (COS) for the internal station or Remote Access barrier code in order to initiate an announcement session.

Announcement sessions always use port 0, which is also used for playing announcements, on the TN750 circuit packs. Announcement sessions always use port 1, which is dedicated for telephone access, on the TN2501AP circuit packs. With the TN2501AP circuit pack, the port is only busy if another telephone access session is active.

To begin an announcement session, the user must dial the administered feature access code (FAC) followed by the announcement extension. If an announcement session is already in progress, or if a save or restore command is in progress, then the user hears reorder tone (fast busy) and the system drops the call.

If the telephone session port is in use, then the user hears reorder tone followed by silence. This indicates that the port will be reserved for an announcement session. The user should redial the FAC and extension every 45 seconds to gain access to the port.

Once an end user accesses an announcement session, the user can dial **1** to record an announcement, **2** to play an announcement, or **3** to delete an announcement. If the circuit pack memory is more than 90% full, then the DEFINITY gives stutter dial tone when the user gains access to an announcement session. Even if the user hears stutter tone, the user should begin speaking to record the announcement.

### Record the announcement

If the you dial 1, then the DEFINITY attempts to start a recording session. If an announcement already exists and is protected (designated as protect = y), then you will hear an intercept tone. If the announcement is currently being played to callers, then you will hear the reorder tone. If the DEFINITY is starting the recording session, then you will hear a record tone and can begin recording the announcement.

### Stop recording the announcement

When the recording is complete, dial **#** from a hybrid or digital telephone or hang up from an analog telephone. If you are using an analog telephone to record announcements, then ending with a # puts the tone in the message. If you are using an analog telephone that is not connected via lineside T1 (DS1 type), then the system records a click when you hang up. With a hybrid or digital station, the # tones or a click will not be recorded. Ending the recording with a # returns you to the dial tone, allowing a playback, delete, or record over operation to be requested. After hanging up, you must redial the FAC plus announcement extension to start a new recording session, then you can record another announcement for this extension or rerecord the same announcement before 15 seconds by you must wait 15 seconds to record a different announcement. If the circuit pack memory becomes full during recording, you will hear a reorder tone, the system will drop you, and the announcement is not retained.

### Play back the announcement

After you have completed a recording and hung up, do not immediately dial the extension. The announcement just recorded remains busy for approximately 15 seconds. The announcement just recorded can be played back by dialing the FAC plus the announcement extension, the **2** before the 15 second timer expires.

Upon completion of the recording session (drop), the DEFINITY sets a 15-second timer. During this interval, the system restricts you to one of two tasks: to listen to the announcement just recorded or to record another announcement.

If you want to listen to the announcement before it is available to others, then dial the FAC, the extension, and 2. The announcement plays and then generates dial tone. You can then perform another operation, such as record a message.

### Delete the announcement

If you dial the FAC, the extension, and then 3, then the DEFINITY deletes the announcement and you hear a confirmation tone. If the announcement is protected or is currently being played, then the system does not delete the announcement an you will hear a reorder tone.

## Recorded announcements, the ACD, and other call center features

Recorded announcements are used extensively for ACD, Call Vectoring, Call Prompting, Expert Agent Selection, VDN of Origin Announcement, Direct Department Calling, and UCD features. See the individual features for interaction details.

## Recorded announcements and automatic wakeup

Recorded announcements allow Automatic Wakeup to use the built-in TN750B or later announcement circuit pack in place of the Audichron adjunct.

If you use an integrated, multiple integrated, or external type of announcement for Automatic Wakeup, then you can also administer the announcement to repeat (with the integ-rep announcement type) and to allow barge-in as a queue type. The benefit of repeating announcements and barge-in queues is that you do not need to use a separate port for each wakeup announcement. When guests go off-hook to receive an announcement at a particular time, they use only one port and the message repeats on the port until the last guest goes off-hook and the message ends.

# Administering VRUs/IVRs as station ports

# B

## Introduction

When Voice Response Units (VRUs) or Interactive Voice Response Units (IVRs) are used in a call center as station ports in a hunt group or in an ACD split/skill, either as a non-vector controlled split or accessed via the *converse*, *queue-to*, or *route-to* command, the station ports must be administered on the station form (see the *DEFINITY ECS Administrator's Guide*, 555-233-506) with the "type" required by the VRU/IVR ports. The types for VRU/IVR ports supported by DEFINITY are:

| Type VRU/IVR ports | Forward disconnect needed | C&D tones[1] support needed | Station type to use | Description |
|---|---|---|---|---|
| analog "T&R" | NA | no | 2500 | Standard station set interface[2]. |
| analog "T&R" | NA | yes | VRU | Provides standard station set interface[2] with Connect tone and Disconnect tone support via the DEFINITY DTMF Feedback Signals feature. |
| lineside DS1/DS0 or lineside T1/E1[3] | no | no | ops | OPS is a DS1 type that provides an EIA/TIA off-premises station type DS1 interface used where the device does not require or support forward disconnect. |

| Type VRU/IVR ports | Forward disconnect needed | C&D tones[1] support needed | Station type to use | Description |
|---|---|---|---|---|
| lineside DS1/DS0 or lineside T1/E1 | yes | no | ds1fd | ds1fd provides an EIA/TIA foreign-exchange (FX) type DS1 interface. The forward disconnect signal is a toggle of the “A” bit for 0 to 1 and then back to 0 after 600 msecs. This type is used for Conversant Line Side T1/E1 ports when used as an analog-like VRU device and is the recommended method for interfacing. |
| lineside DS1/DS0 or lineside T1/E1 | yes | yes | VRUFD | VRUFD is the same as ds1fd except C&D tone support is provided. This type of administration is not used for Conversant. |
| lineside DS1/DS0 or lineside T1/E1 | yes | no | ds1sa | ds1sa provides an EIA/TIA special-access type DS1 interface. The forward disconnect signal is a toggle of the “A” bit from 1 to 0 and then back to 1 after 600 msecs. |
| lineside DS1/DS0 or lineside T1/E1 | yes | yes | VRUSA | VRUSA is the same as ds1sa except C&D tone support is provided. |

1. C&D Tones support is provided via the DTMF Feedback Signals for VRU customer option which must be active for the installation before these station types (VRU, VRUFD, or VRUSA) can be assigned.
2. Uses Analog Line Circuit Packs, such as TN2135.
3. DS1 Circuit Packs (TN767E (or later) or TN464F (or later) must be equipped.

# Glossary and Abbreviations

## Numerics

**3B2 Message Server**
A software application that combines voice and data messaging services for voice-terminal users whose extensions are connected to a system.

**800 service**
A service in the United States that allows incoming calls from certain areas to an assigned number for a flat-rate charge based on usage.

## A

**AA**
Archangel. See angel.

**AAC**
ATM access concentrator

**AAR**
See Automatic Alternate Routing (AAR).

**abandoned call**
An incoming call in which the caller hangs up before the call is answered.

**Abbreviated Dialing (AD)**
A feature that allows callers to place calls by dialing just one or two digits.

**AC**
1. Alternating current.
2. See Administered Connection (AC).

**AAR**
Automatic Alternate Routing

**ACA**
See Automatic Circuit Assurance (ACA).

**ACB**
See Automatic Callback (ACB).

**ACD**
See Automatic Call Distribution (ACD).

**ACD agent**
See agent.

**ACU**
See Automatic calling unit (ACU)

**ACW**
See after-call work (ACW) mode.

**access code**
A 1-, 2-, or 3-digit dial code used to activate or cancel a feature, or access an outgoing trunk.

**access endpoint**
Either a nonsignaling channel on a DS1 interface or a nonsignaling port on an analog tie-trunk circuit pack that is assigned a unique extension.

**access tie trunk**
A trunk that connects a main communications system with a tandem communications system in an electronic tandem network (ETN). An access tie trunk can also be used to connect a system or tandem to a serving office or service node. Also called access trunk.

**access trunk**
See access tie trunk.

**ACCUNET**
A trademarked name for a family of digital services offered by AT&T in the United States.

**ACD**
See Automatic Call Distribution (ACD). ACD also refers to a work state in which an agent is on an ACD call.

**ACD work mode**
See work mode.

**active-notification association**
A link that is initiated by an adjunct, allowing it to receive event reports for a specific switch entity, such as an outgoing call.

**active-notification call**
A call for which event reports are sent over an active-notification association (communication channel) to the adjunct. Sometimes referred to as a monitored call.

**active notification domain**
VDN or ACD split extension for which event notification has been requested.

**ACU**
See Automatic calling unit (ACU).

**AD**
See Abbreviated Dialing (AD).

**ADAP**
AUDIX Data Acquisition Package

**ADC**
See analog-to-digital converter (ADC).

**adjunct**
A processor that does one or more tasks for another processor and that is optional in the configuration of the other processor. See also application.

**adjunct-control association**
A relationship initiated by an application via *Third Party Make Call*, the *Third Party Take Control*, or *Domain (Station) Control* capabilities to set up calls and control calls already in progress.

**adjunct-controlled call**
Call that can be controlled using an adjunct-control association. Call must have been originated via *Third Party Make Call* or *Domain (Station) Control* capabilities or must have been taken control of via *Third Party Take Control* or *Domain (Station) Control* capabilities.

**adjunct-controlled split**
An ACD split that is administered to be under adjunct control. Agents logged into such splits must do all telephony work, ACD login/ logout, and changes of work mode through the adjunct (except for auto-available adjunct-controlled splits, whose agents may not log in/out or change work mode).

**adjunct-monitored call**
An adjunct-controlled call, active-notification call, or call that provides event reporting over a domain-control association.

**Adjunct-Switch Application Interface (ASAI)**
A recommendation for interfacing adjuncts and communications systems, based on the CCITT Q.932 specification for layer 3.

**ADM**
Asynchronous data module

**administer**
To access and change parameters associated with the services or features of a system.

**Administered Connection (AC)**
A feature that allows the switch to automatically establish and maintain end-to-end connections between access endpoints (trunks) and/or data endpoints (data modules).

**administration group**
See capability group.

**administration terminal**
A terminal that is used to administer and maintain a system. See also terminal.

**Administration Without Hardware (AWOH)**
A feature that allows administration of ports without associated terminals or other hardware.

**ADU**
See asynchronous data unit (ADU).

**Advocate**
See CentreVu Advocate.

**AE**
See access endpoint.

**after-call work (ACW) mode**
A mode in which agents are unavailable to receive ACD calls. Agents enter the ACW mode to perform ACD-related activities such as filling out a form after an ACD call.

**AG**
ASAI Gateway

**agent**
A person who receives calls directed to a split. A member of an ACD hunt group or ACD split. Also called an ACD agent.

**agent report**
A report that provides historical traffic information for internally measured agents.

**AIM**
Asynchronous interface module

**AIOD**
Automatic Identification of Outward Dialing

**ALBO**
Automatic Line Build Out

**All trunks busy (ATB)**
The state in which no trunks are available for call handling.

**ALM-ACK**
Alarm acknowledge

**American Standard Code for Information Interchange**
See ASCII (American Standard Code for Information Interchange).

**AMW**
Automatic Message Waiting

**AN**
Analog

**analog**
The representation of information by continuously variable physical quantities such as amplitude, frequency, and phase. See also digital.

**analog data**
Data that is transmitted over a digital facility in analog (PCM) form. The data must pass through a modem either at both ends or at a modem pool at the distant end.

**analog telephone**
A telephone that receives acoustic voice signals and sends analog electrical signals along the telephone line. Analog telephones are usually served by a single wire pair (tip and ring). The model-2500 telephone set is a typical example of an analog telephone.

**analog-to-digital converter (ADC)**
A device that converts an analog signal to digital form. See also digital-to-analog converter (DAC).

**angel**
A microprocessor located on each port card in a processor port network (PPN). The angel uses the control-channel message set (CCMS) to manage communications between the port card and the archangel on the controlling switch-processing element (SPE). The angel also monitors the status of other microprocessors on a port card and maintains error counters and thresholds.

**ANI**
See Automatic Number Identification (ANI).

**ANSI**
American National Standards Institute**.** A United States professional/technical association supporting a variety of standards.

**answerback code**
A number used to respond to a page from a code-calling or loudspeaker-paging system, or to retrieve a parked call.

**AOL**
Attendant-offered load

**AP**
Applications processor

**APLT**
Advanced Private-Line Termination

**appearance**
A software process that is associated with an extension and whose purpose is to supervise a call. An extension can have multiple appearances. Also called call appearance, line appearance, and occurrence. See also call appearance.

**application**
An adjunct that requests and receives ASAI services or capabilities. One or more applications can reside on a single adjunct. However, the switch cannot distinguish among several applications residing on the same adjunct and treats the adjunct, and all resident applications, as a single application. The terms application and adjunct are used interchangeably throughout this document.

**applications processor**
A micro-computer based, program controlled computer providing application services for the DEFINITY. The processor is used with several user-controlled applications such as traffic analysis and electronic documentation.

**application service element**
See capability group.

**architecture**
The organizational structure of a system, including hardware and software.

**ARS**
See Automatic Route Selection (ARS).

**ASAI**
See Adjunct-Switch Application Interface (ASAI)

**ASCII (American Standard Code for Information Interchange)**
The standard code for representing characters in digital form. Each character is represented by an 8-bit code (including parity bit).

**association**
A communication channel between adjunct and switch for messaging purposes. An active association is one that applies to an existing call on the switch or to an extension on the call.

**asynchronous data transmission**
A method of transmitting data in which each character is preceded by a start bit and followed by a stop bit, thus permitting data characters to be transmitted at irregular intervals. This type transmission is advantageous when transmission is not regular (characters typed at a keyboard). Also called asynchronous transmission. See also synchronous data transmission.

**asynchronous data unit (ADU)**
A device that allows direct connection between RS-232C equipment and a digital switch.

**asynchronous Transfer Mode (ATM)**
A packet-like switching technology in which data is transmitted in fixed-size (53-byte) cells. ATM provides high-speed access for data communication in LAN, campus, and WAN environments.

**ATB**
See All trunks busy (ATB).

**ATD**
See Attention dial (ATD).

**attendant**
A person at a console who provides personalized service for incoming callers and voice-services users by performing switching and signaling operations. See also attendant console.

**ATM**
See asynchronous Transfer Mode (ATM).

**attendant console**
The workstation used by an attendant. The attendant console allows the attendant to originate a call, answer an incoming call, transfer a call to another extension or trunk, put a call on hold, and remove a call from hold. Attendants using the console can also manage and monitor some system operations. Also called console. See also attendant.

**Attention dial (ATD)**
A command in the Hayes modem command set for asynchronous modems.

**Audio Information Exchange (AUDIX)**
A fully integrated voice-mail system. Can be used with a variety of communications systems to provide call-history data, such as subscriber identification and reason for redirection.

**AUDIX**
See Audio Information Exchange (AUDIX).

**auto-in trunk group**
Trunk group for which the CO processes all of the digits for an incoming call. When a CO seizes a trunk from an auto-in trunk group, the switch automatically connects the trunk to the destination — typically an ACD split where, if no agents are available, the call goes into a queue in which callers are answered in the order in which they arrive.

**Auto-In Work mode**
One of four agent work modes: the mode in which an agent is ready to process another call as soon as the current call is completed.

**Automatic Alternate Routing (AAR)**
A feature that routes calls to other than the first-choice route when facilities are unavailable.***

**Automatic Callback (ACB)**
A feature that enables internal callers, upon reaching a busy extension, to have the system automatically connect and ring both parties when the called party becomes available.

**Automatic Call Distribution (ACD)**
A feature that answers calls, and then, depending on administered instructions, delivers messages appropriate for the caller and routes the call to an agent when one becomes available.

**Automatic Call Distribution (ACD) split**
A method of routing calls of a similar type among agents in a call center. Also, a group of extensions that are staffed by agents trained to handle a certain type of incoming call.

**Automatic calling unit (ACU)**
A device that places a telephone call.

**Automatic Circuit Assurance (ACA)**
A feature that tracks calls of unusual duration to facilitate troubleshooting. A high number of very short calls or a low number of very long calls may signify a faulty trunk.

**Automatic Number Identification (ANI)**
Representation of the calling number, for display or for further use to access information about the caller. Available with Signaling System 7.

**automatic restoration**
A service that restores disrupted connections between access endpoints (nonsignaling trunks) and data endpoints (devices that connect the switch to data terminal and/or communications equipment). Restoration is done within seconds of a service disruption so that critical data applications can remain operational.

**Automatic Route Selection (ARS)**
A feature that allows the system to automatically choose the least-cost way to send a toll call.

**automatic trunk**
A trunk that does not require addressing information because the destination is predetermined. A request for service on the trunk, called a seizure, is sufficient to route the call. The normal destination of an automatic trunk is the communications-system attendant group. Also called automatic incoming trunk and automatic tie trunk.

**AUX**
Auxiliary

**auxiliary equipment**
Equipment used for optional system features, such as Loudspeaker Paging and Music-on-Hold.

**auxiliary trunk**
A trunk used to connect auxiliary equipment, such as radio-paging equipment, to a communications system.

**Aux-Work mode**
A work mode in which agents are unavailable to receive ACD calls. Agents enter Aux-Work mode when involved in non-ACD activities such as taking a break, going to lunch, or placing an outgoing call.

**AVD**
Alternate voice/data

**AWOH**
See Administration Without Hardware (AWOH).

**AWG**
American Wire Gauge

**AWT**
Average work time

## B

**B8ZS**
Bipolar Eight Zero Substitution.

**bandwidth**
The difference, expressed in hertz, between the defined highest and lowest frequencies in a range.

**barrier code**
A security code used with the Remote Access feature to prevent unauthorized access to the system.

**baud**
A unit of transmission rate equal to the number of signal events per second. See also bit rate and bits per second (bps).

**BCC**
See Bearer capability class (BCC).

**BCMS**
Basic Call Management System

**BCT**
See business communications terminal (BCT).

**Bearer capability class (BCC)**
Code that identifies the type of a call (for example, voice and different types of data). Determination of BCC is based on the caller's characteristics for non-ISDN endpoints and on the Bearer Capability and Low-Layer Compatibility Information Elements of an ISDN endpoint. Current BCCs are 0 (voice-grade data and voice), 1 (DMI mode 1, 56 kbps data transmission), 2 (DMI mode 2, synchronous/asynchronous data transmission up to 19.2 kbps) 3 (DMI mode 3, 64 kbps circuit/packet data transmission), 4 (DMI mode 0, 64 kbps synchronous data), 5 (temporary signaling connection, and 6 (wideband call, 128–1984 kbps synchronous data).

**BER**
Bit error rate

**BHCC**
Busy-hour call completions

**bit (binary digit)**
One unit of information in binary notation, having two possible values: 0 or 1.

**bits per second (bps)**
The number of binary units of information that are transmitted or received per second. See also baud and **bit rate**.

**bit rate**
The speed at which bits are transmitted, usually expressed in bits per second. Also called data rate. See also baud and bits per second (bps).

**BLF**
Busy Lamp Field

**BN**
Billing number

**BOS**
Bit-oriented signaling

**BPN**
Billed-party number

**bps**
See bits per second (bps).

**bridge (bridging)**
The appearance of a voice terminal's extension at one or more other voice terminals.

**BRI**
The ISDN Basic Rate Interface specification.

**bridged appearance**
A call appearance on a voice terminal that matches a call appearance on another voice terminal for the duration of a call.

**BTU**
British Thermal Unit

**buffer**
1. In hardware, a circuit or component that isolates one electrical circuit from another. Typically, a buffer holds data from one circuit or process until another circuit or process is ready to accept the data.
2. In software, an area of memory that is used for temporary storage.

**bus**
A multiconductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations.

**business communications terminal (BCT)**
A digital data terminal used for business applications. A BCT can function via a data module as a special-purpose terminal for services provided by a processor or as a terminal for data entry and retrieval.

**BX.25**
A version of the CCITT X.25 protocol for data communications. BX.25 adds a fourth level to the standard X.25 interface. This uppermost level combines levels 4, 5, and 6 of the ISO reference model.

**bypass tie trunks**
A 1-way, outgoing tie trunk from a tandem switch to a main switch in an ETN. Bypass tie trunks, provided in limited quantities, are used as a last-choice route when all trunks to another tandem switch are busy. Bypass tie trunks are used only if all applicable intertandem trunks are busy.

**byte**
A sequence of (usually eight) bits processed together.

# C

**CACR**
Cancellation of Authorization Code Request

**cabinet**
Housing for racks, shelves, or carriers that hold electronic equipment.

**cable**
Physical connection between two pieces of equipment (for example, data terminal and modem) or between a piece of equipment and a termination field.

**cable connector**
A jack (female) or plug (male) on the end of a cable. A cable connector connects wires on a cable to specific leads on telephone or data equipment.

**CAG**
Coverage answer group

**call appearance**
1. For the attendant console, six buttons, labeled a–f, used to originate, receive, and hold calls. Two lights next to the button show the status of the call appearance.
2. For the voice terminal, a button labeled with an extension and used to place outgoing calls, receive incoming calls, or hold calls. Two lights next to the button show the status of the call appearance.

**call-control capabilities**
Capabilities (*Third Party Selective Hold, Third Party Reconnect, Third Party Merge*) that can be used in either of the Third Party Call Control ASE (cluster) subsets (Call Control and Domain Control).

**Call Detail Recording (CDR)**
A feature that uses software and hardware to record call data (same as CDRU).

**Call Detail Recording utility (CDRU)**
Software that collects, stores, optionally filters, and outputs call-detail records.

**Call Management System (CMS)**
An application, running on an adjunct processor, that collects information from an ACD unit. CMS enables customers to monitor and manage telemarketing centers by generating reports on the status of agents, splits, trunks, trunk groups, vectors, and VDNs, and enables customers to partially administer the ACD feature for a communications system.

**call-reference value (CRV)**
An identifier present in ISDN messages that associates a related sequence of messages. In ASAI, CRVs distinguish between associations.

**call vector**
A set of up to 15 vector commands to be performed for an incoming or internal call.

**callback call**
A call that automatically returns to a voice-terminal user who activated the Automatic Callback or Ringback Queuing feature.

**call-waiting ringback tone**
A low-pitched tone identical to ringback tone except that the tone decreases in the last 0.2 seconds (in the United States). Call-waiting ringback tone notifies the attendant that the Attendant Call Waiting feature is activate and that the called party is aware of the waiting call. Tones in international countries may sound different.

**call work code**
A number, up to 16 digits, entered by ACD agents to record the occurrence of customer-defined events (such as account codes, social security numbers, or phone numbers) on ACD calls.

**CAMA**
Centralized Automatic Message Accounting

**carrier**
An enclosed shelf containing vertical slots that hold circuit packs.

**carried load**
The amount of traffic served by traffic-sensitive facilities during a given interval.

**CARR-POW**
Carrier Port and Power Unit for AC Powered Systems

**CAS**
Centralized Attendant Service or Call Accounting System

**CCS or hundred call seconds**
A unit of call traffic. Call traffic for a facility is scanned every 100 seconds. If the facility is busy, it is assumed to have been busy for the entire scan interval. There are 3600 seconds per hour. The Roman numeral for 100 is the capital letter C. The abbreviation for call seconds is CS. Therefore, 100 call seconds is abbreviated CCS. If a facility is busy for an entire hour, then it is said to have been busy for 36 CCS. See also **Erlang.**

**capability**
A request or indication of an operation. For example, *Third Party Make Call* is a request for setting up a call; *event report* is an indication that an event has occurred.

**capability group**
Set of capabilities, determined by switch administration, that can be requested by an application. Capability groups denote association types. For example, *Call Control* is a type of association that allows certain functions (the ones in the capability group) to be performed over this type of association. Also referred to as administration groups or application service elements (ASEs).

**CA-TSC**
Call-Associated Temporary Signaling Connection

**cause value**
A value is returned in response to requests or in event reports when a denial or unexpected condition occurs. ASAI cause values fall into two coding standards: Coding Standard 0 includes any cause values that are part of AT&T and CCITT ISDN specifications; Coding standard 3 includes any other ASAI cause values. This document uses a notation for cause value where the coding standard for the cause is given first, then a slash, then the cause value. Example: CS0/100 is coding standard 0, cause value 100.

**CBC**
Call-by-call or coupled bonding conductor

**CC**
Country code

**CCIS**
Common-Channel Interoffice Signaling

**CCITT**
CCITT (Comitte Consultatif International Telephonique et Telegraphique), now called *International Telecommunications Union* (ITU). See International Telecommunications Union (ITU).

**CCMS**
Control-Channel Message Set

**CCS**
See CCS or hundred call seconds.

**CCSA**
Common-Control Switching Arrangement

**CDM**
Channel-division multiplexing

**CDOS**
Customer-dialed and operator serviced

**CDR**
See Call Detail Recording (CDR).

**CDRP**
Call Detail Record Poller

**CDRR**
Call Detail Recording and Reporting

**CDRU**
See Call Detail Recording utility (CDRU).

**CEM**
Channel-expansion multiplexing

**center-stage switch (CSS)**
The central interface between the processor port network and expansion port networks in a CSS-connected system.

**central office (CO)**
The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling.

**central office (CO) codes**
The first three digits of a 7-digit public-network telephone number in the United States.

**central office (CO) trunk**
A telecommunications channel that provides access from the system to the public network through the local CO.

**CentreVu Advocate**
CentreVu Advocate is available on the DEFINITY ECS Release 6 and newer switch releases. CentreVu Advocate is a collection of ECS features that provide flexibility in the way a call is selected for an agent in a call surplus situation and in the way that an agent is selected for a call in an agent surplus situation. Advocate also includes methods for automating staffing adjustments.

**CEPT1**
European Conference of Postal and Telecommunications Rate 1

**channel**
1. A circuit-switched call.
2. A communications path for transmitting voice and data.
3. In wideband, all of the time slots (contiguous or noncontiguous) necessary to support a call. Example: an H0-channel uses six 64-kbps time slots.
4. A DS0 on a T1 or E1 facility not specifically associated with a logical circuit-switched call; analogous to a single trunk.

**channel negotiation**
The process by which the channel offered in the Channel Identification Information Element (CIIE) in the SETUP message is negotiated to be another channel acceptable to the switch that receives the SETUP message and ultimately to the switch that sent the SETUP. Negotiation is attempted only if the CIIE is encoded as *Preferred*. Channel negotiation is not attempted for wideband calls.

**CI**
Clock input

**circuit**
1. An arrangement of electrical elements through which electric current flows.
2. A channel or transmission path between two or more points.

**circuit pack**
A card on which electrical circuits are printed, and IC chips and electrical components are installed. A circuit pack is installed in a switch carrier.

**CISPR**
International Special Committee on Radio Interference

**Class of Restriction (COR)**
A feature that allows up to 64 classes of call-origination and call-termination restrictions for voice terminals, voice-terminal groups, data modules, and trunk groups. See also Class of Service (COS).

**Class of Service (COS)**
A feature that uses a number to specify if voice-terminal users can activate the Automatic Callback, Call Forwarding All Calls, Data Privacy, or Priority Calling features. See also Class of Restriction (COR).

**cm**
Centimeter

**CM**
Connection Manager

**CMDR**
Centralized Message Detail Recording

**CMS**
Call Management System

**CO**
See central office (CO).

**common-control switching arrangement (CCSA)**
A private telecommunications network using dedicated trunks and a shared switching center for interconnecting company locations.

**communications system**
The software-controlled processor complex that interprets dialing pulses, tones, and keyboard characters and makes the proper connections both within the system and external to the system. The communications system itself consists of a digital computer, software, storage device, and carriers with special hardware to perform the connections. A communications system provides voice and data communications services, including access to public and private networks, for telephones and data terminals on a customer's premises. See also switch.

**confirmation tone**
A tone confirming that feature activation, deactivation, or cancellation has been accepted.

**connectivity**
The connection of disparate devices within a single system.

**console**
See attendant console.

**contiguous**
Adjacent DS0s within one T1 or E1 facility or adjacent TDM or fiber time slots. The first and last TDM bus, DS0, or fiber time slots are not considered contiguous (no wraparound). For an E1 facility with a D-channel, DS0s 15 and 17 are considered contiguous.

**control cabinet**
See control carrier.

**control carrier**
A carrier in a multicarrier cabinet that contains the SPE circuit packs and, unlike an R5r control carrier, port circuit packs. Also called control cabinet in a single-carrier cabinet. See also switch-processing element (SPE).

**controlled station**
A station that is monitored and controlled via a domain-control association.

**COR**
See Class of Restriction (COR).

**COS**
See Class of Service (COS).

**coverage answer group**
A group of up to eight voice terminals that ring simultaneously when a call is redirected to it by Call Coverage. Any one of the group can answer the call.

**coverage call**
A call that is automatically redirected from the called party's extension to an alternate answering position when certain coverage criteria are met.

**coverage path**
The order in which calls are redirected to alternate answering positions.

**coverage point**
An extension or attendant group, VDN, or ACD split designated as an alternate answering position in a coverage path.

**covering user**
A person at a coverage point who answers a redirected call.

**CP**
Circuit pack

**CPE**
Customer-premises equipment

**CPN**
Called-party number

**CPN/BN**
Calling-party number/billing number

**CPTR**
Call-progress-tone receiver

**CRC**
Cyclical Redundancy Checking

**critical-reliability system**
A system that has the following duplicated items: control carriers, tone clocks, EI circuit packs, and cabling between port networks and center-stage switch in a CSS-connected system. See also duplicated common control, and duplication.

**CSA**
Canadian Safety Association

**CSCC**
Compact single-carrier cabinet

**CSCN**
Center-stage control network

**CSD**
Customer-service document

**CSM**
Centralized System Management

**CSS**
See center-stage switch (CSS).

**CSSO**
Customer Services Support Organization

**CSU**
Channel service unit

**CTS**
Clear to Send

**CWC**
See call work code.

# D

**DAC**
1. Dial access code or Direct Agent Calling
2. See digital-to-analog converter (DAC).

**data channel**
A communications path between two points used to transmit digital signals.

**data-communications equipment (DCE)**
The equipment (usually a modem, data module, or packet assembler/disassembler) on the network side of a communications link that makes the binary serial data from the source or transmitter compatible with the communications channel.

**data link**
The configuration of physical facilities enabling end terminals to communicate directly with each other.

**data module**
An interconnection device between a BRI or DCP interface of the switch and data terminal equipment or data communications equipment.

**data path**
The end-to-end connection used for a data communications link. A data path is the combination of all elements of an interprocessor communication in a DCS.

**data port**
A point of access to a computer that uses trunks or lines for transmitting or receiving data.

**data rate**
See bit rate.

**data service unit (DSU)**
A device that transmits digital data on transmission facilities.

**data terminal**
An input/output (I/O) device that has either switched or direct access to a host computer or to a processor interface.

**data terminal equipment (DTE)**
Equipment consisting of the endpoints in a connection over a data circuit. In a connection between a data terminal and host, the terminal, the host, and their associated modems or data modules make up the DTE.

**dB**
Decibel

**dBA**
Decibels in reference to amperes.

**dBrnC**
Decibels above reference noise with C filter.

**DC**
Direct current

**DCE**
Data-communications equipment

**D-channel backup**
Type of backup used with Non-Facility Associated Signaling (NFAS). A primary D-channel provides signaling for an NFAS D-channel group (two or more PRI facilities). A second D-channel, on a separate PRI facility of the NFAS D-channel group, is designated as backup for the D-channel. Failure of the primary D-channel causes automatic transfer of call-control signaling to the backup D-channel. The backup becomes the primary D-channel. When the failed channel returns to service, it becomes the backup D-channel.

**DCO**
Digital central office

**DCP**
Digital Communications Protocol

**DCS**
Distributed Communications System

**DDC**
Direct Department Calling

**DDD**
Direct Distance Dialing

**delay-dial trunk**
A trunk that allows dialing directly into a communications system (digits are received as they are dialed).

**denying a request**
Sending a negative acknowledgement (NAK), done by sending an FIE with a *return error* component (and a cause value). It should not be confused with the denial event report that applies to calls.

**designated voice terminal**
The specific voice terminal to which calls, originally directed to a certain extension, are redirected. Commonly used to mean the forwarded-to terminal when Call Forwarding All Calls is active.

**dial-repeating trunks**
A PBX tie trunk that is capable of handling PBX station-signaling information without attendant assistance.

**dial-repeating tie trunk**
A tie trunk that transmits called-party addressing information between two communications systems.

**DID**
Direct Inward Dialing

**digit conversion**
A process used to convert specific dialed numbers into other dialed numbers.

**digital**
The representation of information by discrete steps. See also analog.

**digital communications protocol (DCP)**

- A proprietary protocol used to transmit both digitized voice and digitized data over the same communications link. A DCP link is made up of two 64-kbps information (I-) channels and one 8-kbps signaling (S-) channel. Digital Communications Protocol. The DCP protocol supports 2 information-bearing channels, and thus two telephones/data modules. The I1 channel is the DCP channel assigned on the first page of the 8411 station form. The I2 channel is the DCP channel assigned on the analog adjunct page of the 8411 station form or on the data module page.
- Digital Communications Protocol. The DCP protocol supports 2 information-bearing channels, and thus two telephones/data modules. The I1 channel is the DCP channel assigned on the first page of the 8411 station form. The I2 channel is the DCP channel assigned on the analog adjunct page of the 8411 station form or on the data module page.

**digital data endpoints**

In DEFINITY ECS, devices such as the 510D terminal or the 515-type business communications terminal (BCT).

**digital multiplexed interface (DMI)**

An interface that provides connectivity between a communications system and a host computer or between two communications systems using DS1 24th-channel signaling. DMI provides 23 64-kbps data channels and 1 common-signaling channel over a twisted-pair connection. DMI is offered through two capabilities: bit-oriented signaling (DMI-BOS) and message-oriented signaling (DMI-MOS).

**digital signal level 0 (DS0)**

A single 64-kbps voice channel. A DS0 is a single 64-kbps channel in a T1 or E1 facility and consists of eight bits in a T1 or E1 frame every 125 microseconds.

**digital signal level 1 (DS1)**

A single 1.544-Mbps (United States) or 2.048-Mbps (outside the United States) digital signal carried on a T1 transmission facility. A DS1 converter complex consists of a pair, one at each end, of DS1 converter circuit packs and the associated T1/E1 facilities.

**digital terminal data module (DTDM)**

An integrated or adjunct data module that shares with a digital telephone the same physical port for connection to a communications system. The function of a DTDM is similar to that of a PDM and MPDM in that it converts RS-232C signals to DCP signals.

**digital-to-analog converter (DAC)**

A device that converts data in digital form to the corresponding analog signals. See also analog-to-digital converter (ADC).

**digital transmission**

A mode of transmission in which information to be transmitted is first converted to digital form and then transmitted as a serial stream of pulses.

**digital trunk**

A circuit that carries digital voice and/or digital data in a telecommunications channel.

**DIOD**

Direct Inward and Outward Dialing

**direct agent**

A feature, accessed only via ASAI, that allows a call to be placed in a split queue but routed only to a specific agent in that split. The call receives normal ACD call treatment (for example, announcements) and is measured as an ACD call while ensuring that a particular agent answers.

**Direct Extension Selection (DXS)**
A feature on an attendant console that allows an attendant direct access to voice terminals by pressing a group-select button and a DXS button.

**Direct Inward Dialing (DID)**
A feature that allows an incoming call from the public network (not FX or WATS) to reach a specific telephone without attendant assistance.

**Direct Inward Dialing (DID) trunk**
An incoming trunk used for dialing directly from the public network into a communications system without help from the attendant.

**disk drive**
An electromechanical device that stores data on and retrieves data from one or more disks.

**distributed communications system (DCS)**
A network configuration linking two or more communications systems in such a way that selected features appear to operate as if the network were one system.

**DIVA**
Data In/Voice Answer

**DLC**
Data line circuit

**DLDM**
Data-line data module

**DMI**
Digital-multiplexed interface

**DND**
Do not disturb

**DNIS**
Dialed-Number Identification Service

**DOD**
Direct Outward Dialing

**domain**
VDNs, ACD splits, and stations. The VDN domain is used for active-notification associations. The ACD-split domain is for active-notification associations and domain-control associations. The station domain is used for the domain-control associations.

**domain-control association**
A *Third Party Domain Control Request* capability initiates a unique CRV/link number combination, which is referred to as a domain-control association.

**domain-controlled split**
A split for which *Third Party Domain Control* request has been accepted. A domain-controlled split provides an event report for logout.

**domain-controlled station**
A station for which a *Third_Party_Domain_Control* request has been accepted. A domain-controlled station provides event reports for calls that are alerting, connected, or held at the station.

**domain-controlled station on a call**
A station that is active on a call, and which provides event reports over one or two domain-control associations.

**DOSS**
Delivery Operations Support System

**DOT**
Duplication Option Terminal

**DPM**
Dial Plan Manager

**DPR**
Dual-port RAM

**DS1**
Digital Signal Level 1

**DS1C**
Digital Signal Level-1 protocol C

**DS1 CONV**
Digital Signal Level-1 converter

**DSI**
Digital signal interface

**DSU**
Data service unit

**DTDM**
Digital-terminal data module

**DTE**
Data-terminal equipment

**DTGS**
Direct Trunk Group Select

**DTMF**
Dual-tone multifrequency

**DTS**
Disk-tape system

**duplicated common control**
Two processors ensuring continuous operation of a communications system. While one processor is online, the other functions as a backup. The backup processor goes online periodically or when a problem occurs.

**duplication**
The use of redundant components to improve availability. When a duplicated subsystem fails, its backup redundant system automatically takes over.

**duplication option**
A system option that duplicates the following: control carrier containing the SPE, EI circuit packs in carriers, fiber-optic cabling between port networks, and center-stage switch in a CSS-connected system.

**DWBS**
DEFINITY Wireless Business System

**DXS**
Direct extension selection

**Dynamic Percentage Adjustment**
A CentreVu Advocate feature available with CentreVu Advocate Release 9 and newer. This feature makes automatic adjustments to agents' target allocations as needed to help meet the administered service level targets.

**Dynamic Queue Position**
A CentreVu Advocate feature available with CentreVu Advocate Release 9 and newer. This feature gives you the ability to queue calls from multiple VDNs to a single skill, while maintaining different service objectives for those VDNs.

**Dynamic Threshold Adjustment**
A CentreVu Advocate Service Level Supervisor feature available with CentreVu Advocate Release 9 and newer. Dynamic Threshold Adjustment automatically adjusts overload thresholds to engage reserve agents a bit sooner or a bit later to meet the administered service levels.

# E

**E1**
A digital transmission standard that carries traffic at 2.048 Mbps. The E1 facility is divided into 32 channels (DS0s) of 64 kbps information. Channel 0 is reserved for framing and synchronization information. A D-channel occupies channel 16.

**E & M**
Ear and mouth (receive and transmit)

**EA**
Expansion archangel

**EAD-LOA**
See Expert Agent Distribution-Least Occupied Agent

**EAD-MIA**
See Expert Agent Distribution-Most Idle Agent.

**EAL**
Expansion archangel link

**ear and mouth (E & M) signaling**
Trunk supervisory signaling, used between two communications systems, whereby signaling information is transferred through 2-state voltage conditions (on the E and M leads) for analog applications and through a single bit for digital applications.

**EEBCDIC**
Extended Binary-Coded Decimal Interexchange Code

**ECC**
Error Correct Code

**ECMA**
European Computer Manufacturers Association

**EFP**
Electronic power feed

**EI**
Expansion interface

**EIA**
Electronic Industries Association

**EIA-232**
A physical interface specified by the EIA. EIA-232 transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet. EIA-232 replaces RS-232 protocol in some DEFINITY applications.

**electronic tandem network (ETN)**
A tandem tie-trunk network that has automatic call-routing capabilities based on the number dialed and the most preferred route available. Each switch in the network is assigned a unique private network office code (RNX), and each voice terminal is assigned a unique extension.

**Electronics Industries Association (EIA)**
A trade association of the electronics industry that establishes electrical and functional standards.

**emergency transfer**
If a major system failure occurs, automatic transfer is initiated to a group of telephones capable of making outgoing calls. The system operates in this mode until the failure is repaired and the system automatically returns to normal operation. Also called power-failure transfer.

**EMI**
Electromagnetic interference

**end-to-end signaling**
The transmission of touch-tone signals generated by dialing from a voice terminal to remote computer equipment. These digits are sent over the trunk as DTMF digits whether the trunk signaling type is marked as tone or rotary and whether the originating station is tone or rotary. Example: a call to a voice-mail machine or automated-attendant service. A connection is first established over an outgoing trunk. Then additional digits are dialed to transmit information to be processed by the computer equipment.

**enhanced private-switched communications service (EPSCS)**
An analog private telecommunications network based on the No. 5 crossbar and 1A ESS that provides advanced voice and data telecommunications services to companies with many locations.

**EPN**
Expansion-port network

**EPROM**
Erasable programmable read-only memory

**EPSCS**
Enhanced Private Switched Communications Services

**ERL**
Echo return loss

**Erlang**
A unit of traffic intensity, or load, used to express the amount of traffic needed to keep one facility busy for one hour. One Erlang is equal to 36 CCS. See also CCS or hundred call seconds.

**ESF**
Extended superframe format

**ESPA**
European Standard Paging Access

**ETA**
Extended Trunk Access; also Enhanced Terminal Administration

**ETN**
Electronic tandem network

**ETSI**
European Telecommunications Standards Institute

**expansion archangel (EAA)**
A network-control microprocessor located on an expansion interface (EI) port circuit pack in an expansion port network. The EA provides an interface between the EPN and its controlling switch-processing element.

**expansion-archangel link (EAL)**
A link-access function on the D-channel (LAPD) logical link that exists between a switch-processing element and an expansion archangel (EA). The EAL carries control messages from the SPE to the EA and to port circuit packs in an expansion port network.

**expansion control cabinet**
See expansion control carrier.

**expansion control carrier**
A carrier in a multicarrier cabinet that contains extra port circuit packs and a maintenance interface. Also called expansion control cabinet in a single-carrier cabinet.

**expansion interface (EI)**
A port circuit pack in a port network that provides the interface between a PN's TDM bus/ packet bus and a fiber-optic link. The EI carries circuit-switched data, packet-switched data, network control, timing control, and DS1 control. In addition, an EI in an expansion port network communicates with the master maintenance circuit pack to provide the EPN's environmental and alarm status to the switch-processing element.

**expansion port network (EPN)**
A port network (PN) that is connected to the TDM bus and packet bus of a processor port network (PPN). Control is achieved by indirect connection of the EPN to the PPN via a port-network link (PNL). See also port network (PN).

**Expert Agent Distribution-Least Occupied Agent (EAD-LOA)**
An agent selection method for delivery of calls. With EAD-LOA implemented, calls are delivered to the available agent with the highest skill level and the lowest percentage of work time since login (compared to other available agents with the same skill level).

See also EAD-MIA, PAD, UCD-LOA, and UCD-MIA.

**Expert Agent Distribution-Most Idle Agent (EAD-MIA)**
An agent selection method for delivery of calls. With EAD-MIA implemented, calls are delivered to the available agent with the highest skill level who has been idle the longest since their last ACD call (compared to other available agents with the same skill level).

See also EAD-LOA, PAD, UCD-LOA, and UCD-MIA.

**extension-in**
Extension-In (ExtIn) is the work state agents go into when they answer (receive) a non-ACD call. If the agent is in Manual-In or Auto-In and receives an extension-in call, it is recorded by CMS as an AUX-In call.

**extension-out**
The work state that agents go into when they place (originate) a non-ACD call.

**external measurements**
Those ACD measurements that are made by the External CMS adjunct.

**extension**
A 1- to 5-digit number by which calls are routed through a communications system or, with a Uniform Dial Plan (UDP) or main-satellite dialing plan, through a private network.

**external call**
A connection between a communications system user and a party on the public network or on another communications system in a private network.

# F

**FAC**
Feature Access Code

**facility**
A telecommunications transmission pathway and associated equipment.

**facility-associated signaling (FAS)**
Signaling for which a D-channel carries signaling only for those channels on the same physical interface.

**FAS**
Facility-associated signaling

**FAT**
Facility access trunk

**FAX**
Facsimile

**FCC**
Federal Communications Commission

**FEAC**
Forced Entry of Account Codes

**feature**
A specifically defined function or service provided by the system.

**feature button**
A labeled button on a telephone or attendant console used to access a specific feature.

**FEP**
Front-end processor

**FIC**
Facility interface codes

**fiber optics**
A technology using materials that transmit ultrawideband electromagnetic light-frequency ranges for high-capacity carrier systems.

**fixed**
A trunk allocation term. In the fixed allocation scheme, the time slots necessary to support a wideband call are contiguous, and the first time slot is constrained to certain starting points.

**flexible**
A trunk allocation term. In the flexible allocation scheme, the time slots of a wideband call can occupy noncontiguous positions within a single T1 or E1 facility.

**floating**
A trunk allocation term. In the floating allocation scheme, the time slots of a wideband call are contiguous, but the position of the first time slot is not fixed.

**FNPA**
Foreign Numbering-Plan Area

**foreign-exchange (FX)**
A CO other than the one providing local access to the public telephone network.

**foreign-exchange trunk**
A telecommunications channel that directly connects the system to a CO other than its local CO.

**foreign numbering-plan area code (FNPAC)**
An area code other than the local area code, that must be dialed to call outside the local geographical area.

**FRL**
Facilities Restriction Level

**FX**
Foreign exchange

## G

**G3-MA**
Generic 3 Management Applications

**G3-MT**
Generic 3 Management Terminal

**G3r**
Generic 3, RISC (Reduced Instruction Set Computer)

**generalized route selection (GRS)**
An enhancement to Automatic Alternate Routing/Automatic Route Selection (AAR/ARS) that performs routing based on call attributes, such as Bearer Capability Classes (BCCs), in addition to the address and facilities restriction level (FRL), thus facilitating a Uniform Dial Plan (UDP) that is independent of the type of call being placed.

**glare**
The simultaneous seizure of a 2-way trunk by two communications systems, resulting in a standoff.

**GM**
Group manager

**GPTR**
General-purpose tone receiver

**grade of service**
The number of call attempts that fail to receive service immediately. Grade of service is also expressed as the quantity of all calls that are blocked or delayed.

**ground-start trunk**
A trunk on which, for outgoing calls, the system transmits a request for services to a distant switching system by grounding the trunk ring lead. To receive the digits of the called number, that system grounds the trunk tip lead. When the system detects this ground, the digits are sent.

**GRS**
Generalized Route Selection

# H

**H0**
An ISDN information transfer rate for 384-kbps data defined by CCITT and ANSI standards.

**H11**
An ISDN information transfer rate for 1536-kbps data defined by CCITT and ANSI standards.

**H12**
An ISDN information transfer rate for 1920-kbps data defined by CCITT and ANSI standards.

**handshaking logic**
A format used to initiate a data connection between two data module devices.

**hertz (Hz)**
A unit of frequency equal to one cycle per second.

**high-reliability system**
A system having the following: two control carriers, duplicate expansion interface (EI) circuit packs in the PPN (in R5r with CSS), and duplicate switch node clock circuit packs in the switch node (SN) carriers. See also duplicated common control, duplication, duplication option, and critical-reliability system.

**HNPA**
See home numbering-plan area code (HNPA).

**holding time**
The total length of time in minutes and seconds that a facility is used during a call.

**home numbering-plan area code (HNPA)**
The local area code. The area code does not have to be dialed to call numbers within the local geographical area.

**hop**
Nondirect communication between two switch communications interfaces (SCI) where the SCI message passes automatically without intermediate processing through one or more intermediate SCIs.

**host computer**
A computer, connected to a network, that processes data from data-entry devices.

**hunt group**
A group of extensions that are assigned the Station Hunting feature so that a call to a busy extension reroutes to an idle extension in the group. See also ACD work mode.

**Hz**
See hertz (Hz).

# I

**I1**
The first information channel of DCP.

**I2**
The second information channel of DCP.

**I2 Interface**
A proprietary interface used for the DEFINITY Wireless Business System for the radio-controller circuit packs. Each interface provides communication between the radio-controller circuit pack and up to two wireless fixed bases.

**I3 Interface**
A proprietary interface used for the DEFINITY Wireless Business System for the cell antenna units. Each wireless fixed base can communicate to up to four cell antenna units.

**IAS**
Inter-PBX Attendant Service

**ICC**
Intercabinet cable or intercarrier cable

**ICD**
Inbound Call Director

**ICDOS**
International Customer-Dialed Operator Service

**ICHT**
Incoming call-handling table

**ICI**
Incoming call identifier

**ICM**
Inbound Call Management

**IDDD**
International Direct Distance Dialing

**IDF**
Intermediate distribution frame

**IE**
Information element

**immediate-start tie trunk**
A trunk on which, after making a connection with a distant switching system for an outgoing call, the system waits a nominal 65 ms before sending the digits of the called number. This allows time for the distant system to prepare to receive digits. On an incoming call, the system has less than 65 ms to prepare to receive the digits.

**IMT**
Intermachine trunk

**in**
Inch

**INADS**
Initialization and Administration System

**incoming gateway**
A switch that routes an incoming call on a trunk not administered for Supplementary Services Protocol B to a trunk not administered for Supplementary Services Protocol B.

**information exchange**
The exchange of data between users of two different systems, such as the switch and a host computer, over a LAN.

**Information Systems Network (ISN)**
A WAN and LAN with an open architecture combining host computers, minicomputers, word processors, storage devices, PCs, high-speed printers, and nonintelligent terminals into a single packet-switching system.

**INS**
ISDN Network Service

**inside call**
A call placed from one telephone to another within the local communications system.

**Integrated Services Digital Network (ISDN)**
A public or private network that provides end-to-end digital communications for all services to which users have access by a limited set of standard multipurpose user-network interfaces defined by the CCITT. Through internationally accepted standard interfaces, ISDN provides digital circuit-switched or packet-switched communications within the network and links to other ISDNs to provide national and international digital communications. See also Integrated Services Digital Network Basic Rate Interface (ISDN-BRI) and Integrated Services Digital Network Primary Rate Interface (ISDN-PRI).

**Integrated Services Digital Network Basic Rate Interface (ISDN-BRI)**
The interface between a communications system and terminal that includes two 64-kbps B-channels for transmitting voice or data and one 16-kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information. ISDN-BRI also includes 48 kbps for transmitting framing and D-channel contention information, for a total interface speed of 192 kbps. ISDN-BRI serves ISDN terminals and digital terminals fitted with ISDN terminal adapters. See also Integrated Services Digital Network (ISDN) andIntegrated Services Digital Network Primary Rate Interface (ISDN-PRI).

**Integrated Services Digital Network Primary Rate Interface (ISDN-PRI)**
The interface between multiple communications systems that in North America includes 24 64-kbps channels, corresponding to the North American digital signal level-1 (DS1) standard rate of 1.544 Mbps. The most common arrangement of channels in ISDN-PRI is 23 64-kbps B-channels for transmitting voice and data and 1 64-kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information. With nonfacility-associated signaling (NFAS), ISDN-PRI can include 24 B-channels and no D-channel. See alsoIntegrated Services Digital Network (ISDN) andIntegrated Services Digital Network Basic Rate Interface (ISDN-BRI).

**intercept tone**
An tone that indicates a dialing error or denial of the service requested.

**interface**
A common boundary between two systems or pieces of equipment.

**internal call**
A connection between two users within a system.

**International Telecommunications Union (ITU)**
Formerly known as International Telegraph and Telephone Consultative Committee (CCITT), ITU is an international organization that sets universal standards for data communications, including ISDN. ITU members are from telecommunications companies and organizations around the world. See alsoBX.25.

**International Telegraph and Telephone Consultative Committee**
See International Telecommunications Union (ITU).

**interflow**
The ability for calls to forward to other splits on the same PBX or a different PBX using the Call Forward All Calls feature.

**intraflow**
The ability for calls to redirect to other splits on the same PBX on a conditional or unconditional basis using call coverage busy, don't answer, or all criteria.

**internal measurements**
BCMS measurements that are made by the system. ACD measurements that are made external to the system (via External CMS) are referred to as external measurements.

**in-use lamp**
A red light on a multiappearance voice terminal that lights to show which call appearance will be selected when the handset is lifted or which call appearance is active when a user is off-hook.

**INWATS**
Inward Wide Area Telephone Service

**IO**
Information outlet

**ISDN**
See Integrated Services Digital Network (ISDN).

**ISDN Gateway (IG)**
A feature allowing integration of the switch and a host-based telemarketing application via a link to a gateway adjunct. The gateway adjunct is a 3B-based product that notifies the host-based telemarketing application of call events.

**ISDN trunk**
A trunk administered for use with ISDN-PRI. Also called ISDN facility.

**ISDN-PRI terminal adapter**
An interface between endpoint applications and an ISDN PRI facility. ISDN-PRI terminal adapters are currently available from other vendors and are primarily designed for video conferencing applications. Accordingly, currently available terminal adapters adapt the two pairs of video codec data (V.35) and dialing (RS-366) ports to an ISDN PRI facility.

**IS/DTT**
Integrated Services/digital tie trunk

**ISN**
Information Systems Network

**ISO**
International Standards Organization

**ISV**
Independent software vendor

**ITP**
Installation test procedure

**ITU**
International Telecommunications Union

**IXC**
Interexchange carrier code

## K

**kHz**
Kilohertz

**kbps**
Kilobits per second

**kbyte**
Kilobyte

**kg**
Kilogram

## L

**LAN**
Local area network

**LAP-D**
Link Access Procedure on the D-channel

**LAPD**
Link Access Procedure data

**LATA**
Local access and transport area

**lb**
Pound

**LBO**
Line buildout

**LDN**
Listed directory number

**LDS**
Long-distance service

**LEC**
Local exchange carrier

**LED**
See light-emitting diode (LED).

**light-emitting diode (LED)**
A semiconductor device that produces light when voltage is applied. LEDs provide a visual indication of the operational status of hardware components, the results of maintenance tests, the alarm status of circuit packs, and the activation of telephone features.

**lightwave transceiver**
Hardware that provides an interface to fiber-optic cable from port circuit packs and DS1 converter circuit packs. Lightwave transceivers convert electrical signals to light signals and vice versa.

**line**
A transmission path between a communications system or CO switching system and a voice terminal or other terminal.

**line appearance**
See appearance.

**line buildout**
A selectable output attenuation is generally required of DTE equipment because T1 circuits require the last span to lose 15–22.5 dB.

**line port**
Hardware that provides the access point to a communications system for each circuit associated with a telephone or data terminal.

**link**
A transmitter-receiver channel that connects two systems.

**link-access procedure on the D-channel (LAPD)**
A link-layer protocol on the ISDN-BRI and ISDN-PRI data-link layer (level 2). LAPD provides data transfer between two devices, and error and flow control on multiple logical links. LAPD is used for signaling and low-speed packet data (X.25 and mode 3) on the signaling (D-) channel and for mode-3 data communications on a bearer (B-) channel.

**LINL**
Local indirect neighbor link

**local area network (LAN)**
A networking arrangement designed for a limited geographical area. Generally, a LAN is limited in range to a maximum of 6.2 miles and provides high-speed carrier service with low error rates. Common configurations include daisy chain, star (including circuit-switched), ring, and bus.

**logical link**
The communications path between a processor and a BRI terminal.

**loop-start trunk**
A trunk on which, after establishing a connection with a distant switching system for an outgoing call, the system waits for a signal on the loop formed by the trunk leads before sending the digits of the called number.

**LSU**
Local storage unit

**LWC**
Leave Word Calling

# M

**MAC**
Medium access

**MADU**
Modular asynchronous data unit

**main distribution frame (MDF)**
A device that mounts to the wall inside the system equipment room. The MDF provides a connection point from outside telephone lines to the PBX switch and to the inside telephone stations.

**main-satellite-tributary**
A private network configuration that can either stand alone or access an ETN. A main switch provides interconnection, via tie trunks, with one or more subtending switches, called satellites; all attendant positions for the main/satellite configuration; and access to and from the public network. To a user outside the complex, a main/satellite configuration appears as one switch, with one listed directory number (LDN). A tributary switch is connected to the main switch via tie trunks, but has its own attendant positions and LDN.

**maintenance**
Activities involved in keeping a telecommunications system in proper working condition: the detection and isolation of software and hardware faults, and automatic and manual recovery from these faults.

**management terminal**
The terminal that is used by the system administrator to administer the switch. The terminal may also be used to access the BCMS feature.

**major alarm**
An indication of a failure that has caused critical degradation of service and requires immediate attention. Major alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, logged to the alarm log, and reported to a remote maintenance facility, if applicable.

**Manual-In work mode**
One of four agent work modes: the mode in which an agent is ready to process another call manually. See Auto-In Work mode for a contrast.

**MAP**
Maintenance action process

**MAPD**
Multiapplication platform for DEFINITY

**MA-UUI**
Message-Associated User-to-User Signaling

**Mbps**
Megabits per second

**M-Bus**
Memory bus

**Mbyte**
Megabyte

**MCC**
Multicarrier cabinet

**MCS**
Message Center Service

**MCT**
Malicious Call Trace

**MCU**
Multipoint control unit

**MDF**
Main distribution frame

**MDM**
Modular data module

**MDR**
Message detail record

**MEM**
Memory

**memory**
A device into which information can be copied and held, and from which information can later be obtained.

**memory shadowing link**
An operating-system condition that provides a method for memory-resident programs to be more quickly accessed, allowing a system to reboot faster.

**message center**
An answering service that supplies agents to and stores messages for later retrieval.

**message center agent**
A member of a message-center hunt group who takes and retrieves messages for voice-terminal users.

**MET**
Multibutton electronic telephone

**MF**
Multifrequency

**MFB**
Multifunction board

**MFC**
Multifrequency code

**MHz**
Megahertz

**MIM**
Management information message

**minor alarm**
An indication of a failure that could affect customer service. Minor alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, sent to the alarm log, and reported to a remote maintenance facility, if applicable.

**MIPS**
Million instructions per second

**MIS**
Management information system

**MISCID**
Miscellaneous identification

**MMCS**
Multimedia Call Server

**MMCH**
Multimedia call handling

**MMI**
Multimedia interface

**MMS**
Material Management Services

**MO**
Maintenance object

**modem**
A device that converts digital data signals to analog signals for transmission over telephone circuits. The analog signals are converted back to the original digital data signals by another modem at the other end of the circuit.

**modem pooling**
A capability that provides shared conversion resources (modems and data modules) for cost-effective access to analog facilities by data terminals. When needed, modem pooling inserts a conversion resource into the path of a data call. Modem pooling serves both outgoing and incoming calls.

**modular processor data module (MPDM)**
A processor data module (PDM) that can be configured to provide several kinds of interfaces (RS-232C, RS-449, and V.35) to customer-provided data terminal equipment (DTE). See also processor data module (PDM).

**modular trunk data module (MTDM)**
A trunk data module that can be configured to provide several kinds of interfaces (RS-232, RS-449, and V.35) to customer-provided data terminal equipment.

**modulator-demodulator**
See modem.

**monitored call**
See active-notification call.

**MOS**
Message-oriented signaling

**MPDM**
Modular processor data module

**MS**
Message server

**ms**
Millisecond

**MS/T**
Main satellite/tributary

**MSA**
Message servicing adjunct

**MSG**
Message service

**MSL**
Material stocking location

**MSM**
Modular System Management

**MSS**
Mass storage system

**MSSNET**
Mass storage/network control

**MT**
Management terminal

**MTDM**
Modular trunk data module

**MTP**
Maintenance tape processor

**MTT**
Multitasking terminal

**multiappearance voice terminal**
A terminal equipped with several call-appearance buttons for the same extension, allowing the user to handle more than one call on that same extension at the same time.

**Multicarrier cabinet**
A structure that holds one to five carriers. See also single-carrier cabinet.

**Multifrequency Compelled (MFC) Release 2 (R2) signaling**
A signal consisting of two frequency components, such that when a signal is transmitted from a switch, another signal acknowledging the transmitted signal is received by the switch. R2 designates signaling used in the United States and in countries outside the United States.

**multiplexer**
A device used to combine a number of individual channels into a single common bit stream for transmission.

**multiplexing**
A process whereby a transmission facility is divided into two or more channels, either by splitting the frequency band into a number of narrower bands or by dividing the transmission channel into successive time slots. See also time-division multiplexing (TDM).

**multirate**
The new N x DS0 service (see N x DS0).

**MWL**
Message-waiting lamp

# N

**N+1**
Method of determining redundant backup requirements. Example: if four rectifier modules are required for a DC-powered single-carrier cabinet, a fifth rectifier module is installed for backup.

**N x DS0**
N x DS0, equivalently referred to as N x 64 kbps, is an emerging standard for wideband calls separate from H0, H11, and H12 ISDN channels. The emerging N x DS0 ISDN multirate circuit mode bearer service will provide circuit-switched calls with data-rate multiples of 64 kbps up to 1536 kbps on a T1 facility or up to 1920 kbps on an E1 facility. In the switch, N x DS0 channels will range up to 1984 kbps using NFAS E1 interfaces.

**NANP**
North American Numbering Plan

**narrowband**
A circuit-switched call at a data rate up to and including 64 kbps. All nonwideband switch calls are considered narrowband.

**native terminal support**
A predefined terminal type exists in switch software, eliminating the need to alias the terminal (that is, manually map call appearances and feature buttons onto some other natively supported terminal type).

**NAU**
Network access unit

**NCA/TSC**
Noncall-associated/temporary-signaling connection

**NCOSS**
Network Control Operations Support Center

**NCSO**
National Customer Support Organization

**NEC**
National Engineering Center

**NEMA**
National Electrical Manufacturer’s Association

**NETCON**
Network-control circuit pack

**network**
A series of points, nodes, or stations connected by communications channels.

**network-specific facility (NSF)**
An information element in an ISDN-PRI message that specifies which public-network service is used. NSF applies only when Call-by-Call Service Selection is used to access a public-network service.

**network interface**
A common boundary between two systems in an interconnected group of systems.

**NFAS**
See Nonfacility-associated signaling (NFAS).

**NI**
Network interface

**NID**
Network Inward Dialing

**NM**
Network management

**NN**
National number

**node**
A switching or control point for a network. Nodes are either tandem (they receive signals and pass them on) or terminal (they originate or terminate a transmission path).

**Nonfacility-associated signaling (NFAS)**
A method that allows multiple T1 and/or E1 facilities to share a single D-channel to form an ISDN-PRI. If D-channel backup is not used, one facility is configured with a D-channel, and the other facilities that share the D-channel are configured without D-channels. If D-channel backup is used, two facilities are configured to have D-channels (one D-channel on each facility), and the other facilities that share the D-channels are configured without D-channels.

**NPA**
Numbering-plan area

**NPE**
Network processing element

**NQC**
Number of queued calls

**NSE**
Night-service extension

**NSU**
Network sharing unit

**null modem cable**
Special wiring of an RS-232-C cable such that a computer can talk to another computer (or to a printer) without a modem.

**NXX**
Public-network office code

## O

**OA**
Operator assisted

**occurrence**
See appearance.

**OCM**
Outbound Call Management

**offered load**
The traffic that would be generated by all the requests for service occurring within a monitored interval, usually one hour.

**ONS**
On-premises station

**OPS**
Off-premises station

**OPX**
Off-premises extension

**OQT**
Oldest queued time

**OSHA**
Occupational Safety and Health Act

**OSI**
Open Systems Interconnect

**OSS**
Operations Support System

**OSSI**
Operational Support System Interface

**OTDR**
Optical time-domain reflectometer

**othersplit**
The work state that indicates that an agent is currently active on another split's call, or in ACW for another split.

**OTQ**
Outgoing trunk queuing

**outgoing gateway**
A PBX that routes an incoming call on a trunk administered for Supplementary Services Protocol B to a trunk not administered for Supplementary Services Protocol B.

## P

**PACCON**
Packet control

**packet**
A group of bits (including a message element, which is the data, and a control information element (IE), which is the header) used in packet switching and transmitted as a discrete unit. In each packet, the message element and control IE are arranged in a specified format. See also **packet bus** and **packet switching**.

**packet bus**
A wide-bandwidth bus that transmits packets.

**packet switching**
A data-transmission technique whereby user information is segmented and routed in discrete data envelopes called packets, each with its own appended control information, for routing, sequencing, and error checking. Packet switching allows a channel to be occupied only during the transmission of a packet. On completion of the transmission, the channel is made available for the transfer of other packets. See also BX.25and **packet**.

**PAD**
See Percent Allocation Distribution.

**paging trunk**
A telecommunications channel used to access an amplifier for loudspeaker paging.

**party/extension active on call**
A party is on the call if he or she is actually connected to the call (in active talk or in held state). An originator of a call is always a party on the call. Alerting parties, busy parties, and tones are not parties on the call.

**PBX**
Private branch exchange

**PC**
See personal computer (PC).

**PCM**
See pulse-code modulation (PCM).

**PCOL**
Personal central-office line

**PCOLG**
Personal central-office line group

**PCS**
Permanent switched calls

**PDM**
See processor data module (PDM).

**PDS**
Premises Distribution System

**PE**
Processing element

**PEC**
Price element code

**PEI**
Processor element interchange

**Percent Allocation Distribution (PAD)**
An agent selection method for delivery of calls. With PAD implemented, calls are delivered to the available agent with the lowest ratio of adjusted work time and target allocation for the skill.

See also EAD-LOA, EAD-MIA, UCD-LOA, and UCD-MIA.

**personal computer (PC)**
A personally controllable microcomputer.

**PGATE**
Packet gateway

**PGN**
Partitioned group number

**PI**
Processor interface

**PIB**
Processor interface board

**pickup group**
A group of individuals authorized to answer any call directed to an extension within the group.

**PIDB**
Product image database

**PKTINT**
Packet interface

**PL**
Private line

**PLS**
Premises Lightwave System

**PMS**
Property Management System

**PN**
Port network

**PNA**
Private network access

**POE**
Processor occupancy evaluation

**POP**
Point of presence

**port**
A data- or voice-transmission access point on a device that is used for communicating with other devices.

**port carrier**
A carrier in a multicarrier cabinet or a single-carrier cabinet containing port circuit packs, power units, and service circuits. Also called a port cabinet in a single-carrier cabinet.

**port network (PN)**
A cabinet containing a TDM bus and packet bus to which the following components are connected: port circuit packs, one or two tone-clock circuit packs, a maintenance circuit pack, service circuit packs, and (optionally) up to four expansion interface (EI) circuit packs in DEFINITY ECS. Each PN is controlled either locally or remotely by a switch processing element (SPE). See also expansion port network (EPN) and processor port network (PPN).

**port-network connectivity**
The interconnection of port networks (PNs), regardless of whether the configuration uses direct or switched connectivity.

**PPM**
1. Parts per million
2. Periodic pulse metering

**PPN**
See processor port network (PPN).

**PRI**
See Primary Rate Interface (PRI).

**primary extension**
The main extension associated with the physical voice or data terminal.

**Primary Rate Interface (PRI)**
A standard ISDN frame format that specifies the protocol used between two or more communications systems. PRI runs at 1.544 Mbps and, as used in North America, provides 23 64-kbps B-channels (voice or data) and one 64-kbps D-channel (signaling). The D-channel is the 24th channel of the interface and contains multiplexed signaling information for the other 23 channels.

**PRI endpoint (PE)**
The wideband switching capability introduces PRI endpoints on switch line-side interfaces. A PRI endpoint consists of one or more contiguous B-channels on a line-side T1 or E1 ISDN PRI facility and has an extension. Endpoint applications have call-control capabilities over PRI endpoints.

**principal**
A terminal that has its primary extension bridged on one or more other terminals.

**principal (user)**
A person to whom a telephone is assigned and who has message-center coverage.

**private network**
A network used exclusively for the telecommunications needs of a particular customer.

**private network office code (RNX)**
The first three digits of a 7-digit private network number.

**PROCR**
Processor

**processor carrier**
See control carrier.

**processor data module (PDM)**
A device that provides an RS-232C DCE interface for connecting to data terminals, applications processors (APs), and host computers, and provides a DCP interface for connection to a communications system. See also modular processor data module (MPDM).

**processor port network (PPN)**
A port network controlled by a switch-processing element that is directly connected to that PN's TDM bus and LAN bus. See also port network (PN).

**processor port network (PPN) control carrier**
A carrier containing the maintenance circuit pack, tone/clock circuit pack, and SPE circuit packs for a processor port network (PPN) and, optionally, port circuit packs.

**Property Management System (PMS)**
A stand-alone computer used by lodging and health-services organizations for services such as reservations, housekeeping, and billing.

**protocol**
A set of conventions or rules governing the format and timing of message exchanges to control data movement and correction of errors.

**PSC**
Premises service consultant

**PSDN**
Packet-switch public data network

**PT**
Personal terminal

**PTC**
Positive temperature coefficient

**PTT**
Postal Telephone and Telegraph

**public network**
The network that can be openly accessed by all customers for local and long-distance calling.

**pulse-code modulation (PCM)**
An extension of pulse-amplitude modulation (PAM) in which carrier-signal pulses modulated by an analog signal, such as speech, are quantized and encoded to a digital, usually binary, format.

# Q

**QPPCN**
Quality Protection Plan Change Notice

**quadrant**
A group of six contiguous DS0s in fixed locations on an ISDN-PRI facility. Note that this term comes from T1 terminology (one-fourth of a T1), but there are five quadrants on an E1 ISDN-PRI facility (30B + D).

**queue**
An ordered sequence of calls waiting to be processed.

**queuing**
The process of holding calls in order of their arrival to await connection to an attendant, to an answering group, or to an idle trunk. Calls are automatically connected in first-in, first-out sequence.

# R

**RAM**
See random-access memory (RAM).

**random-access memory (RAM)**
A storage arrangement whereby information can be retrieved at a speed independent of the location of the stored information.

**RBS**
Robbed-bit signaling

**RC**
Radio controller

**RCL**
Restricted call list

**read-only memory (ROM)**
A storage arrangement primarily for information-retrieval applications.

**recall dial tone**
Tones signalling that the system has completed a function (such as holding a call) and is ready to accept dialing.

**redirection criteria**
Information administered for each voice terminal's coverage path that determines when an incoming call is redirected to coverage.

**Redirection on No Answer**
An optional feature that redirects an unanswered ringing ACD call after an administered number of rings. The call is then redirected back to the agent.

**remote home numbering-plan area code (RHNPA)**
A foreign numbering-plan area code that is treated as a home area code by the Automatic Route Selection (ARS) feature. Calls can be allowed or denied based on the area code and the dialed CO code rather than just the area code. If the call is allowed, the ARS pattern used for the call is determined by these six digits.

**Remote Operations Service Element (ROSE)**
A CCITT and ISO standard that defines a notation and services that support interactions between the various entities that make up a distributed application.

**REN**
Ringer equivalency number

**reorder tone**
A tone to signal that at least one of the facilities, such as a trunk or a digit transmitter, needed for the call was not available.

**report scheduler**
Software that is used in conjunction with the system printer to schedule the days of the week and time of day that the desired reports are to be printed.

**RFP**
Request for proposal

**RHNPA**
See remote home numbering-plan area code (RHNPA).

**RINL**
Remote indirect neighbor link

**RISC**
Reduced-instruction-set computer

**RLT**
Release-link trunk

**RMATS**
Remote Maintenance, Administration, and Traffic System

**RNX**
Route-number index (private network office code)

**ROM**
See read-only memory (ROM).

**RPN**
Routing-plan number

**RS-232C**
A physical interface specified by the Electronic Industries Association (EIA). RS-232C transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet.

**RS-449**
Recommended Standard 449

**RSC**
Regional Support Center

**ROSE**
See Remote Operations Service Element (ROSE).

## S

**S1**
The first logical signalling channel of DCP. The channel is used to provide signaling information for DCP's I1 channel.

**S2**
The second logical signaling channel of DCP. The channel is used to provide signaling information for DCP's I2 channel.

**SABM**
Set Asynchronous Balance Mode

**SAC**
Send All Calls

**SAKI**
See sanity and control interface (SAKI).

**sanity and control interface (SAKI)**
A custom VLSI microchip located on each port circuit pack. The SAKI provides address recognition, buffering, and synchronization between the angel and the five control time slots that make up the control channel. The SAKI also scans and collects status information for the angel on its port circuit pack and, when polled, transmits this information to the archangel.

**SAT**
System access terminal

**SCC**
1. See single-carrier cabinet.
2. Serial communications controller

**SCD**
Switch-control driver

**SCI**
Switch communications interface

**SCO**
System control office

**SCOTCH**
Switch Conferencing for TDM Bus in Concentration Highway

**SCSI**
See small computer system interface (SCSI).

**SDDN**
Software-Defined Data Network

**SDI**
Switched Digital International

**SDLC**
Synchronous data-link control

**SDN**
Software-defined network

**SFRL**
Single-frequency return loss

**SID**
Station-identification number

**simplex system**
A system that has no redundant hardware.

**simulated bridged appearance**
The same as a temporary bridged appearance; allows the terminal user (usually the principal) to bridge onto a call that had been answered by another party on his or her behalf.

**single-carrier cabinet**
A combined cabinet and carrier unit that contains one carrier. See also Multicarrier cabinet.

**single-line voice terminal**
A voice terminal served by a single-line tip and ring circuit (models 500, 2500, 7101A, 7103A).

**SIT**
Special-information tones

**small computer system interface (SCSI)**
An ANSI bus standard that provides a high-level command interface between host computers and peripheral devices.

**SMDR**
Station Message Detail Recording, known as Call Detail Recording in DEFINITY ECS.

**SN**
Switch Node

**SNA**
Systems Network Architecture

**SNC**
Switch Node Clock

**SNI**
Switch Node Interface

**SNMP**
Simple Network Management Protocol

**software**
A set of computer programs that perform one or more tasks.

**SPE**
Switch Processing Element

**SPID**
Service Profile Identifier

**split**
See ACD work mode.

**split condition**
A condition whereby a caller is temporarily separated from a connection with an attendant. A split condition automatically occurs when the attendant, active on a call, presses the start button.

**split number**
The split's identity to the switch and BCMS.

**split report**
A report that provides historical traffic information for internally measured splits.

**split (agent) status report**
A report that provides real-time status and measurement data for internally measured agents and the split to which they are assigned.

**SSI**
Standard serial interface

**SSM**
Single-site management

**SSV**
Station service

**ST3**
Stratum 3 clock board

**staffed**
Indicates that an agent position is logged in. A staffed agent functions in one of four work modes: Auto-In, Manual-In, ACW, or AUX-Work.

**STARLAN**
Star-Based Local Area Network

**Station Message Detail Recording (SMDR)**
An obsolete term now called CDR — a switch feature that uses software and hardware to record call data. See Call Detail Recording (CDR).

**standard serial interface (SSI)**
A communications protocol developed for use with 500-type business communications terminals (BCTs) and 400-series printers.

**status lamp**
A green light that shows the status of a call appearance or a feature button by the state of the light (lit, flashing, fluttering, broken flutter, or unlit).

**stroke counts**
A method used by ACD agents to record up to nine customer-defined events per call when CMS is active.

**SVN**
Security-violation notification

**switch**
Any kind of telephone switching system. See also communications system.

**switchhook**
The buttons located under the receiver on a voice terminal.

**switch-node (SN) carrier**
A carrier containing a single switch node, power units, and, optionally, one or two DS1 converter circuit packs. An SN carrier is located in a center-stage switch.

**switch-node (SN) clock**
The circuit pack in an SN carrier that provides clock and maintenance alarm functions and environmental monitors.

**switch-node interface (SNI)**
The basic building block of a switch node. An SNI circuit pack controls the routing of circuit, packet, and control messages.

**switch-node link (SNL)**
The hardware that provides a bridge between two or more switch nodes. The SNL consists of the two SNI circuit packs residing on the switch nodes and the hardware connecting the SNIs. This hardware can include lightwave transceivers that convert the SNI's electrical signals to light signals, the copper wire that connects the SNIs to the lightwave transceivers, a full-duplex fiber-optic cable, DS1 converter circuit cards and DS1 facilities if a company does not have rights to lay cable, and appropriate connectors.

**switch-processing element (SPE)**
A complex of circuit packs (processor, memory, disk controller, and bus-interface cards) mounted in a PPN control carrier. The SPE serves as the control element for that PPN and, optionally, for one or more EPNs.

**SXS**
Step-by-step

**synchronous data transmission**
A method of sending data in which discrete signal elements are sent at a fixed and continuous rate and specified times. See also association.

**SYSAM**
System Access and Administration

**system administrator**
The person who maintains overall customer responsibility for system administration. Generally, all administration functions are performed from the Management Terminal. The switch requires a special login, referred to as the system administrator login, to gain access to system-administration capabilities.

**system printer**
An optional printer that may be used to print scheduled reports via the report scheduler.

**system report**
A report that provides historical traffic information for internally measured splits.

**system-status report**
A report that provides real-time status information for internally measured splits.

**system manager**
A person responsible for specifying and administering features and services for a system.

**system reload**
A process that allows stored data to be written from a tape into the system memory (normally after a power outage).

# T

**T1**
A digital transmission standard that in North America carries traffic at the DS1 rate of 1.544 Mbps. A T1 facility is divided into 24 channels (DS0s) of 64 kbps. These 24 channels, with an overall digital rate of 1.536 Mbps, and an 8-kbps framing and synchronization channel make up the 1.544-Mbps transmission. When a D-channel is present, it occupies channel 24. T1 facilities are also used in Japan and some Middle-Eastern countries.

**TAAS**
Trunk Answer from Any Station

**TABS**
Telemetry asynchronous block serial

**TAC**
Trunk-access code

**tandem switch**
A switch within an electronic tandem network (ETN) that provides the logic to determine the best route for a network call, possibly modifies the digits outpulsed, and allows or denies certain calls to certain users.

**tandem through**
The switched connection of an incoming trunk to an outgoing trunk without human intervention.

**tandem tie-trunk network (TTTN)**
A private network that interconnects several customer switching systems.

**TC**
Technical consultant

**TCM**
Traveling class mark

**TDM**
See time-division multiplexing (TDM).

**TDR**
Time-of-day routing

**TEG**
Terminating extension group

**terminal**
A device that sends and receives data within a system. See also administration terminal.

**tie trunk**
A telecommunications channel that directly connects two private switching systems.

**time-division multiplex (TDM) bus**
A bus that is time-shared regularly by preallocating short time slots to each transmitter. In a PBX, all port circuits are connected to the TDM bus, permitting any port to send a signal to any other port.

**time-division multiplexing (TDM)**
Multiplexing that divides a transmission channel into successive time slots. See also multiplexing.

**time interval**
The period of time, either one hour or one-half hour, that BCMS measurements are collected for a reports.

**time slice**
See **time interval**.

**time slot**
64 kbps of digital information structured as eight bits every 125 microseconds. In the switch, a time slot refers to either a DS0 on a T1 or E1 facility or a 64-kbps unit on the TDM bus or fiber connection between port networks.

**time slot sequence integrity**
The situation whereby the N octets of a wideband call that are transmitted in one T1 or E1 frame arrive at the output in the same order that they were introduced.

**to control**
An application can invoke *Third Party Call Control* capabilities using either an adjunct-control or domain-control association.

**to monitor**
An application can receive *event reports* on an active-notification, adjunct-control, or domain-control association.

**TOD**
Time of day

**tone ringer**
A device with a speaker, used in electronic voice terminals to alert the user.

**TOP**
Task-oriented protocol

**trunk**
A dedicated telecommunications channel between two communications systems or COs.

**trunk allocation**
The manner in which trunks are selected to form wideband channels.

**trunk-data module**
A device that connects off-premises private-line trunk facilities and DEFINITY ECS. The trunk-data module converts between the RS-232C and the DCP, and can connect to DDD modems as the DCP member of a modem pool.

**trunk group**
Telecommunications channels assigned as a group for certain functions that can be used interchangeably between two communications systems or COs.

**TSC**
Technical Service Center

**TTI**
Terminal translation initialization

**TTR**
Touch-tone receiver

**TTT**
Terminating trunk transmission

**TTTN**
See tandem tie-trunk network (TTTN).

**TTY**
Teletypewriter

## U

**UAP**
Usage-allocation plan

**UART**
Universal asynchronous transmitter

**UCD**
Uniform call distribution

**UCD-LOA**
See Uniform Call Distribution-Least Occupied Agent.

**UCD-MIA**
See Uniform Call Distribution-Most Idle Agent.

**UCL**
Unrestricted call list

**UDP**
See Uniform Dial Plan (UDP).

**UL**
Underwriter Laboratories

**UM**
User manager

**Uniform Call Distribution-Least Occupied Agent (UCD-LOA)**
An agent selection method for delivery of calls. With UCD-LOA implemented, calls are delivered to the available agent with the lowest percentage of work time since login.

See also EAD-LOA, EAD-MIA, PAD, and UCD-MIA.

**Uniform Call Distribution-Most Idle Agent (UCD-MIA)**
An agent selection method for delivery of calls. With UCD-MIA implemented, calls are delivered to the available agent who has been idle the longest since their last ACD call.

See also EAD-LOA, EAD-MIA, PAD, and UCD-LOA.

**Uniform Dial Plan (UDP)**
A feature that allows a unique 4- or 5-digit number assignment for each terminal in a multiswitch configuration such as a DCS or main-satellite-tributary system.

**UNMA**
Unified Network Management Architecture

**UNP**
Uniform numbering plan

**UPS**
Uninterruptible power supply

**USOP**
User service-order profile

**UUCP**
UNIX-to-UNIX Communications Protocol

**UUI**
User-to-user information

## V

**VAR**
Value-added reseller

**VDN**
See vector directory number (VDN).

**vector directory number (VDN)**
An extension that provides access to the Vectoring feature on the switch. Vectoring allows a customer to specify the treatment of incoming calls based on the dialed number.

**vector-controlled split**
A hunt group or ACD split administered with the vector field enabled. Access to such a split is possible only by dialing a VDN extension.

**VIS**
Voice Information System

**VLSI**
Very-large-scale integration

**VM**
Voltmeter

**VNI**
Virtual nodepoint identifier

**voice terminal**
A single-line or multiappearance telephone.

# W

**WATS**
See Wide Area Telecommunications Service (WATS).

**WCC**
World-Class Core

**WCR**
World-Class Routing

**WCTD**
World-Class Tone Detection

**WFB**
Wireless fixed base

**Wide Area Telecommunications Service (WATS)**
A service in the United States that allows calls to certain areas for a flat-rate charge based on expected usage.

**wideband**
A circuit-switched call at a data rate greater than 64 kbps. A circuit-switched call on a single T1 or E1 facility with a bandwidth between 128 and 1536 (T1) or 1984 (E1) kbps in multiples of 64 kbps. H0, H11, H12, and N x DS0 calls are wideband.

**wideband access endpoint**
Access endpoints, extended with wideband switching to include wideband access endpoints. A wideband access endpoint consists of one or more contiguous DS0s on a line-side T1 or E1 facility and has an extension. The Administered Connections feature provides call control for calls originating from wideband access endpoints.

**wink-start tie trunk**
A trunk with which, after making a connection with a distant switching system for an outgoing call, the system waits for a momentary signal (wink) before sending the digits of the called number. Similarly, on an incoming call, the system sends the wink signal when ready to receive digits.

**work mode**
One of four states (Auto-In, Manual-In, ACW, AUX-Work) that an ACD agent can be in. Upon logging in, an agent enters AUX-Work mode. To become available to receive ACD calls, the agent enters Auto-In or Manual-In mode. To do work associated with a completed ACD call, an agent enters ACW mode.

**work state**
An ACD agent may be a member of up to three different splits. Each ACD agent continuously exhibits a work state for every split of which it is a member. Valid work states are Avail, Unstaffed, AUX-Work, ACW, ACD (answering an ACD call), ExtIn, ExtOut, and OtherSpl. An agent's work state for a particular split may change for a variety of reasons (example: when a call is answered or abandoned, or the agent changes work modes). The BCMS feature monitors work states and uses this information to provide BCMS reports.

**write operation**
The process of putting information onto a storage medium, such as a hard disk.

**WSA**
Waiting session accept

**WSS**
Wireless Subscriber System

# Z

**ZCS**
Zero Code Suppression

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