Avaya Communication Manager Call Center Software

Basic Call Management System (BCMS) Operations

07-300061
Issue 5.0
May 2005

Notice

While reasonable efforts were made to ensure that the information in this document was complete and accurate at the time of printing, Avaya Inc. can assume no liability for any errors. Changes and corrections to the information in this document may be incorporated in future releases.

Documentation disclaimer

Avaya Inc. is not responsible for any modifications, additions, or deletions to the original published version of this documentation unless such modifications, additions, or deletions were performed by Avaya. Customer and/or End User agree to indemnify and hold harmless Avaya, Avaya's agents, servants and employees against all claims, lawsuits, demands and judgments arising out of, or in connection with, subsequent modifications, additions or deletions to this documentation to the extent made by the Customer or End User.

Link disclaimer

Avaya Inc. is not responsible for the contents or reliability of any linked Web sites and does not necessarily endorse the products, services, or information described or offered within them. We cannot guarantee that these links will work all of the time and we have no control over the availability of the linked pages.

Warranty

Avaya Inc. provides a limited warranty on this product. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya's standard warranty language, as well as information regarding support for this product, while under warranty, is available through the following Web site:

http://www.avaya.com/support

Preventing toll fraud

"Toll fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, anyone who is not a corporate employee, agent, subcontractor, or person 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, call Technical Service Center Toll Fraud Intervention Hotline at +1-800-643-2353 for the United States and Canada. For additional support telephone numbers, see the Avaya Web site:

http://www.avaya.com/support

Providing telecommunications security

Telecommunications security (of voice, data, and 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 person 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:

- Use (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 and data privacy, intellectual property, material assets, financial resources, labor costs, and 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
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products.

Trademarks

Avaya is a trademark of Avaya Inc.

All non-Avaya trademarks are the property of their respective owners.

Document ordering information:
Avaya Publications Center

Voice: +1-207-866-6701
1-800-457-1764 (Toll-free, U.S. and Canada only)

Fax: +1-207-626-7269
1-800-457-1764 (Toll-free, U.S. and Canada only)

Write: Globalware Solutions
200 Ward Hill Avenue
Haverhill, MA 01835 USA
Attention: Avaya Account Manager

Web: http://www.avaya.com/support

E-mail: totalware@gwsmail.com

Order: Document No. 07-300061, Issue 5.0
May 2005

For the most current versions of documentation, go to the Avaya support Web site:

http://www.avaya.com/support

COMPAS

This document is also available from the COMPAS database. The COMPAS ID for this document is 107011.

Avaya support

Avaya provides a telephone number for you to use to report problems or to ask questions about your contact center. The support telephone number is 1-800-242-2121 in the United States. For additional support telephone numbers, see the Avaya Web site:

http://www.avaya.com/support

Avaya Communication Manager
Call Center Software
Basic Call Management System (BCMS) Operations

Contents

Preface

This section includes the following topics:

Purpose

The purpose of this document is to provide a comprehensive description of the Basic Call Management System (BCMS) feature, which is available with Avaya Communication Manager Call Center Software and Enterprise Communications Server (ECS) products. This document also describes the Report Scheduler feature, which is often used with BCMS.

Intended users

This document is written for BCMS administrators.This document might be useful for system administrators, Automatic Call Distribution (ACD) split supervisors, ACD administrators, and ACD agents.

Overview

This document includes the following topics:

- BCMS description **on page 15**

  Provides a brief overview of the BCMS feature and lists the types of BCMS reports.

- System access on page 21

  Provides procedures on how to log in and log off BCMS. This section also provides the procedures for changing the BCMS password.

- Generating reports on page 25

  Describes the procedures for displaying, printing, and scheduling BCMS reports.

- Report reference on page 41

  Provides a detailed description of each type of BCMS report.

- System printer and Report Scheduler on page 91

  Describes the optional Report Scheduler feature. This section also includes a description of Report Scheduler commands and a display of the reports.

- Using reports for ACD planning on page 101

  Describes desirable objectives and how the BCMS reports can be used to plan, engineer, and optimize ACD splits and trunk groups.

Conventions and terminology

If you see any of the following safety labels in this document, take careful note of the information presented.

CAUTION:
Caution statements call attention to situations that can result in harm to software, loss of data, or an interruption in service.

WARNING:
Warning statements call attention to situations that can result in harm to hardware or equipment.

DANGER:
Danger statements call attention to situations that can result in harm to personnel.

SECURITY ALERT:
Security alert statements call attention to situations that can increase the potential for unauthorized use of a telecommunications system.

Reasons for reissue

- This document was updated to include information for the R12 release of the Avaya Call Management System software
- A general update and correction of a variety of small problems, such as typographical errors, was done.

Related documentation

You might find the following Avaya CMS documentation useful. This section includes the following topics:

Change description

For information about the changes made in Avaya CMS R13, see:

- *Avaya Call Center 3.0 and Call Management System (CMS) Release 13 Change Description*, 07-300304

Software documents

For more information about Avaya CMS software, see:

- *Avaya Call Management System Release 13 Software Installation, Maintenance, and Troubleshooting Guide,* 07-300340
- *Avaya CMS Open Database Connectivity Version 4.2,* 585-780-701
- *Avaya Call Management System Release 13 LAN Backup User Guide,* 07-300338
- *Avaya Call Management System Release 13 External Call History Interface,* 07-300332
- *Avaya CMS Custom Reports,* 585-215-822
- *Avaya CMS Forecast User Guide,* 585-215-825
- *Avaya Visual Vectors Release 13 Installation and Getting Started*, 07-300353
- *Avaya Visual Vectors Release 13 User Guide*, 07-300354
- *Avaya Call Management System (CMS) Supervisor Release 13 Report Designer*, 07-300335

Administration documents

For more information about Avaya CMS administration, see:

- *Avaya Call Management System Release 13 Administration,* 07-300331
- *Avaya Call Management System (CMS) Release 13 Database Items and Calculations,* 07-300330
- *Avaya Call Management System Supervisor Release 13 Reports*, 07-300334
- *Avaya Call Management System (CMS) Supervisor Release 13 Installation and Getting Started*, 07-300333
- *Avaya Call Management System High Availability User Guide*, 07-300066
- *Avaya Call Management System High Availability Connectivity, Upgrade and Administration*, 07-300065

Hardware documents

For more information about Avaya CMS hardware, see:

- *Avaya Call Management System Sun Fire V880/V890 Computer Hardware Installation, Maintenance, and Troubleshooting,* 585-215-116
- *Avaya Call Management System Sun Blade 100/150 Workstation Hardware Installation, Maintenance, and Troubleshooting,* 585-310-783
- *Avaya Call Management System Terminals, Printers, and Modems,* 585-215-874

Call Center documents

For more information about Avaya Call Center documents, see:

- *Avaya Communication Manager Call Center Software Basic Call Management System (BCMS) Operations,* 07-300061
- *Avaya Call Management System Switch Connections, Administration*, and *Troubleshooting*, 585-215-876
- *Avaya Communication Manager Call Center Software Call Vectoring and Expert Agent Selection (EAS) Guide*, 07-300303
- *Avaya Communication Manager Call Center Software Automatic Call Distribution (ACD) Guide*, 07-300301
- *Avaya Business Advocate User Guide*, 07-300336

Avaya CMS upgrade documents

There are several upgrade paths supported with Avaya CMS. There is a document designed to support each upgrade.

This section includes the following topics:

Base load upgrades

Use a base load upgrade when upgrading CMS to the latest load of the same version (for example, r13ak.g to r13al.k). A specific set of instructions is written for the upgrade. The instructions are shipped to the customer site with the CMS software CD-ROM as part of a Product Correction Notice (PCN).

For more information about base load upgrades, see:

- *Avaya Call Management System Release 13 Base Load Upgrade*

Platform upgrades and data migration

Use a platform upgrade when upgrading to a new hardware platform (for example, upgrading from a SPARCserver 5 to a Sun Blade 150). The new hardware platform is shipped from the Avaya factory with the latest CMS load. Therefore, as part of the upgrade you will have the latest CMS load (for example, R3V9 to R13).

For more information about platform upgrades and data migration, see:

- *Avaya Call Management System Release 13 Platform Upgrade and Data Migration*, 07-300339

Avaya Call Management System Upgrade Express (CUE)

Use CUE when CMS is being upgraded from an earlier version (for example, R3V9) to the latest version (for example, R13).

A specific set of upgrade instructions is written for the upgrade. These instructions are included on the CUE software CD-ROM that is shipped to the customer site with the CUE kit.

For information about customer requirements for CUE upgrades, see:

- *Avaya Call Management System Release 13 CMS Upgrade Express (CUE) Customer Requirements,* 700356744

For information about CUE upgrade procedures, see:

- *Avaya Call Management System Release 13 Sun Blade 100/150 Workstation Mirrored and Nonmirrored Systems CMS Upgrade Express (CUE)*, 07-300481
- *Avaya Call Management System Release 13 Sun Fire V880/V890 Computer CMS Upgrade Express (CUE),* 07-300344

Documentation Web sites

For Avaya product documentation, go to http://www.avayadocs.com. Additional information about new software or hardware updates will be contained in future issues of this book. New issues of this book will be placed on the Web site when available.

Use the following Web sites to view related support documentation:

- Information about Avaya products and service

  http://www.avaya.com

- Sun hardware documentation

  http://docs.sun.com

- Informix documentation

  http://www.informix.com

- Tivoli Storage Manager documentation

  http://www.tivoli.com

BCMS description

BCMS helps you monitor the operations of your ACD application. BCMS collects data related to the calls on the switch and organizes the data into reports that help you manage ACD facilities and personnel. The BCMS reports allow you to manage the hourly and/or daily operations of the ACD by:

- Monitoring trunk group usage
- Monitoring the calling volume for each split
- Monitoring VDNs
- Monitoring the work load of each agent
- Comparing agent performance.

These reports can be displayed on a video display terminal in real time, printed immediately, scheduled to print at a later time, or scheduled to print periodically at times you specify.

Note:

All references to *splits* in this book also apply to *skills* as used with the Expert Agent Selection (EAS) feature. See Interactions on page 20 for more information.

This section includes the following topics:

Reports

The BCMS feature provides the following reports:

- Real-time reports that present data on:
  - All splits, on a system basis, that are administered for internal measurement or for both internal and external measurement
  - Individual splits and the agents staffing them that have been administered for internal measurement or for both internal and external measurement
  - VDNs that are administered for internal measurement or for both internal and external measurement.
- Historical reports that present historical information and can be printed immediately or scheduled for subsequent printing. These reports present data on:
  - Individual agents or a group of agents, based on the time of day
  - Individual agents or a group of agents, based on the day of the week
  - Individual splits or a group of splits, based on the time of day
  - Individual splits or a group of splits, based on the day of the week
  - Individual trunk groups or a group of trunk groups, based on the time of day
  - Individual trunk groups or a group of trunk groups, based on the day of the week
  - Individual Vector Directory Numbers (VDNs) based on the time of day
  - Individual VDNs based on the day of the week

Note:

Agents can be measured by their physical extension (that is, the extension number they use), or by their Login IDs when either EAS or BCMS/VuStats Login IDs is optioned.

Report reference on page 41 describes each BCMS report in detail while Using reports for ACD planning on page 101 describes how to plan and maintain an ACD based on the information provided by these reports.

Printing and storing reports

The BCMS reports may be displayed on an administration terminal or printed on its associated printer. The reports can also be scheduled to print at a later time using the Report Scheduler.

As an option, a personal computer (PC) or host computer may be used to store the reports and provide additional data manipulation capabilities.

Note:

The BCMS software resides completely on the switch and does not include any special software or unique communications protocol for the PC/host computer application. Although Avaya does propose the use of a PC to collect, store, and print the reports, Avaya does not recommend an applications software package for the PC. Since Avaya does not install, administer, or control the PC application, Avaya does not guarantee correct operation of this arrangement.

Customers using a PC to collect report data will need the following report output information for each report:

1. Begin with one-half page of line feeds.
2. Print a four-line banner containing the following information:
   - Print job ID
   - Command
   - Time of day
   - User
3. Provide a form feed.
4. Begin report data using 80 characters per line. Use spaces where there are no data, and a newline character at the end of each line.
5. Provide a form feed after each page of data. The page length is defined in system parameters.
6. Provide a form feed when the report has finished printing.

BCMS data is stored in volatile switch memory; it cannot be saved to or retrieved from tape. The switch preserves historical data if a Reset System 1, Reset System 2, or Reset System Interchange (in a duplicated system) occurs. Real-time data is preserved if a Reset System 1 or Reset System Interchange occurs.

The switch loses all data (historical and real-time) during software upgrades.

Acceptable Service Level

Before using BCMS, you should understand the concept of Acceptable Service Level and set the acceptable service level field on various screens.

Acceptable Service Level is the desired time for an agent to answer a call for a given VDN or hunt group. Timing for a call begins when the call encounters a VDN or enters a hunt group queue. If the number of seconds to answer the call is equal to or less than the administered acceptable service level for the VDN or hunt group, the call is recorded as acceptable.

This section includes the following topics:

Percent within service level

A service level can be administered for each hunt group or VDN if the BCMS/VuStats Service Level customer option has been enabled and if the hunt group or VDN is measured by BCMS.

To calculate the percentage of calls within the acceptable service level, BCMS divides the number of acceptable calls by the calls offered.

For hunt groups, BCMS calculates the Percent Within Service Level as follows:

$$\%\ \text{IN SERV LEVL} = \frac{\text{accepted} * 100}{\text{ACDcalls} + \text{abandons} + \text{outflows} + \text{dequeued}}$$

where:

- accepted - Is the number of calls answered for which the queue time was less than or equal to the administered service level for the split.
- dequeued - Is the number of calls that encountered the split queue, but were NOT answered, abandoned, or outflowed. This occurs with multiple split queuing.

For VDNs, BCMS calculates the Percent Within Service Level as follows:

$$\%\ \text{IN SERV LEVL} = \frac{\text{accepted} * 100}{\text{calls offered}}$$

where:

- accepted - Is the number of answered calls (*num ans*) for which the time to answer was less than or equal to the administered service level for the VDN. *num ans* here refers to the data item on the screen.

- calls offered - Is the total number of completed calls that accessed the VDN during the current interval.

Acceptable Service Level administration

The Acceptable Service Level is administered on the System-Parameters Customer-Options, VDN, and Hunt Group screens. On the System-Parameters Customer-Options screen (changeable using a superuser ID), verify that the field `BCMS/VuStats Service Level` is set to **`y`**.

On the Hunt Group screen, set the `Acceptable Service Level` field to a number between 0 and 9999 seconds. Set the `Measured` field to either **`internal`** or **`both`**.

On the Vector Directory Number screen, set the `Acceptable Service Level` field to a number between 0 and 9999 seconds. Set the `Measured` field to either **`internal`** or **`both`**.

The column `% IN SERV LEVL` on a report will be blank if:

- The `BCMS/VuStats Service Level` field on the Customer Options screen is set to `n`
- No service level is defined for the split or VDN (it cannot be set if BCMS Service Level is set to `n`)
- No call ended in the interval

System capacities

Because system capacity limits change often, this information is now being maintained in a document for each switch release. For switch releases up to R9, consult the *System Description* document. For switch releases R10 and later, see the *Capacity Tables* document. All of these documents can be accessed from the Avaya documentation Web site:

http://www.avayadocs.com/

Interactions

This section includes the following topics:

CMS

From the administration perspective, the ACD parameters associated with trunk groups, hunt groups, and VDNs are any of the following:

- Not measured
- Internally measured by BCMS
- Externally measured by CMS
- Measured both internally by BCMS and externally by CMS.

Note that using BCMS in conjunction with CMS increases the maximum number of agents and trunk groups that can be measured for a particular ACD application. In other words, the capacities for BCMS are additive to those of CMS.

Note:

If both BCMS and CMS are used simultaneously, switch performance may be degraded.

VuStats

VuStats enables agents and supervisors with telephone displays to view data about agents, splits, and VDNs. Much of this information is the same as that provided by BCMS.

System access

This section includes the following topics:

Logging in and logging off

A BCMS terminal is treated by the system as a remote management terminal. You can access BCMS reports either from a local system management terminal, on a dial-up basis, or by using the Avaya Site Administration terminal emulator tool.

This section includes the following topics:

Constraints for accessing BCMS data

When dial-up access is used, the following constraints affect the number of terminals that can access BCMS data simultaneously:

- The number of dial-up (Netcon) channels
- The number of Terminal User IDs (TUIs). A TUI is a switch resource used by:
  - The Technical Service Center (TSC) when logged in
  - The management terminal when powered up
  - A remote management terminal when logged in
  - A BCMS terminal when logged in

- The system printer while printing
- A journal/log printer when administered

When the switch is configured with more than one management terminal, typically one terminal is dedicated to administration and/or maintenance tasks while the others are used for ACD/BCMS features.

BCMS login ID

The switch provides several different categories of login IDs. The login ID identifies the user and that user's permitted capabilities to the system. You must create a login ID for each supervisor or user that you want to view BCMS reports. A BCMS login ID can allow you to display, print, and schedule BCMS reports.

Logging in

There are many ways to log in to BCMS: from a local terminal, from a remote terminal, or using the Avaya Site Administration tool. The remote terminal requires a data module for dialing up the system and Avaya Site Administration can use a modem or a LAN connection.

To log into BCMS:

1. If remote, dial in to the switch. If local, turn on the terminal and press **BREAK** if a login prompt is not displayed.

   The terminal displays a login prompt.

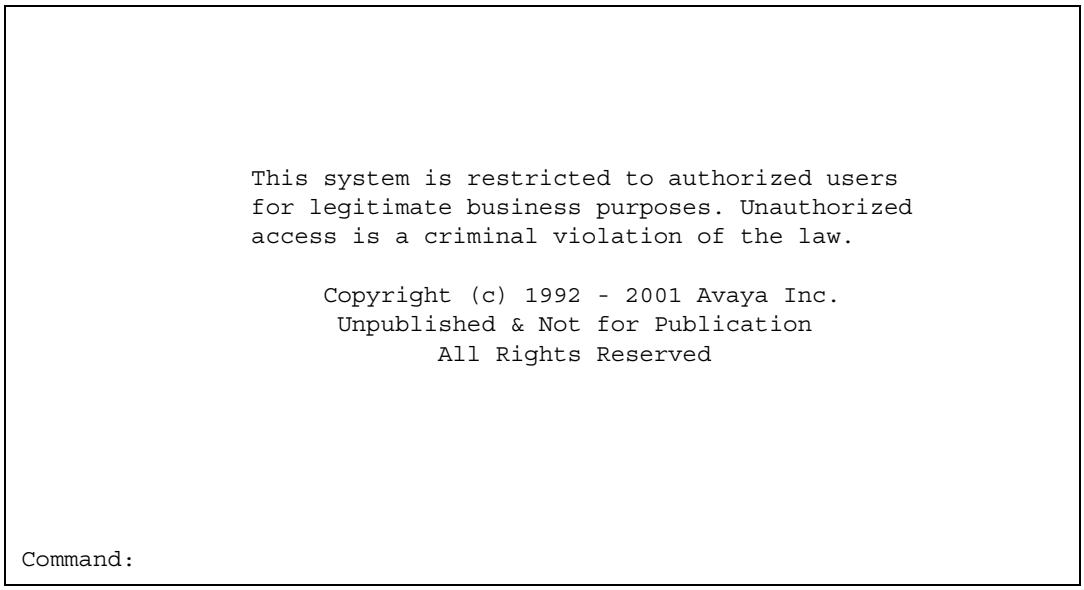
2. Enter your login ID and press **RETURN**.

   The screen displays the password prompt.

3. Enter your password and press **RETURN**. The system verifies that the login ID and password you entered are valid. If you entered an invalid login ID or password, the system displays a message and requires you to log in again.

4. Enter the appropriate terminal type. In most cases, use the default terminal type that the system displays.

   After you enter the appropriate terminal type, the system displays the command screen.



   The system is now ready for you to enter a command to generate a BCMS report.

Logging off

SECURITY ALERT:
Whenever you are not using BCMS, log off the system.

To log off the system, perform the following steps:

1. Enter:

   logoff

   The system displays a message questioning if you want to log off.

2. Enter: **y**

   You are logged off from the system.

How to change the BCMS password

Any user can change the password for their own login ID. Only users with special privileges, such as the system administrator, can change the password for other users.

SECURITY ALERT:
To protect access to the system, the password should be changed at regular intervals, each time a new person takes over a login ID, and if an unauthorized person has discovered the password. Once a password is assigned or changed, do not give the password to anyone and keep any written passwords in a locked place.

To change a password:

1. At the command prompt, enter:

   change password *<login name>*

   The system displays the Password Administration screen. The cursor is positioned on the `Password of Login Making Change` field.

```
change password bcms                                          Page   1 of   1
                        PASSWORD ADMINISTRATION

   Password of Login Making Change:


   LOGIN BEING CHANGED
                        Login Name: bcms

   LOGIN'S PASSWORD INFORMATION
                  Login's Password:
          Reenter Login's Password:
```

2. Enter your password and press **RETURN**.

   The cursor is positioned on the `Login's Password` field.

3. Enter your new password and press **RETURN**.

   Valid passwords contain a minimum of four characters either alphabetic or numeric.

   The cursor is positioned on the `Reenter Login's Password` field.

4. Re-enter your new password and press **ENTER**.

   The system displays the following message:

```
command completed successfully
```

Generating reports

This chapter describes the procedures for displaying and printing real-time reports and for displaying, printing, and scheduling historical reports. Before attempting to print these reports, make sure that a system printer is connected and administered.

This section includes the following topics:

Displaying and printing real-time reports

The **monitor** command is used to display and print real-time status reports. These reports display data accrued since the last interval boundary. Data is based on hourly or half-hourly intervals as administered in the `BCMS/VuStats Measurement Interval` field on the Feature-Related System Parameters screen.

There are three monitor commands, one to display or print each real-time report:

```
monitor bcms split
monitor bcms system
monitor bcms vdn
```

Whenever a status report is displayed on the management terminal, it updates automatically approximately every 30 seconds. You can immediately update the on-screen status report by pressing **UPDATE**. To cancel the **monitor** command and return to the command prompt, press **CANCEL**. If the status report consists of more than one page, press **NEXTPAGE** to display any subsequent pages and **PREVPAGE** to display any previous pages.

If you incorrectly enter the command, or if the qualifier is not applicable or is not measured, an error message displays on the message line located on the bottom of the screen. If you require more information about the error message, press **HELP**.

Complete the steps in the following topics to display or print real-time reports.

This section includes the following topics:

Displaying real-time reports

To display a real-time report, complete the following steps:

1. Type the **monitor** command that will display the report you want to view. See Commands for displaying real-time reports on page 26.
2. Press **RETURN**. The report displays on your screen.
3. Press **NEXTPAGE** to display subsequent pages and **PREVPAGE** to display previous pages.
4. To immediately update the report data, press **UPDATE**.
5. To exit the report, press **CANCEL**.

Commands for displaying real-time reports

To view the	Enter	Where
Split status report	**monitor bcms split ##**	## is an administered split measured by BCMS.
System status report	**monitor bcms system ##**	## is an administered split or range of splits measured by BCMS. ## is optional. If not included, the report shows all splits.
VDN status report	**monitor bcms vdn ##**	## is an administered VDN extension measured by BCMS.

Printing real-time reports

To print a real-time report, complete the following steps:

1. Type the **monitor** command that will print the report. See Commands for printing real-time reports.
2. Press **RETURN**. The report prints on the printer that is attached to your terminal.

Commands for printing real-time reports

To view the	Enter	Where
Split status report	**monitor bcms split ## print**	## is an administered split measured by BCMS.
System status report	**monitor bcms system ## print**	## is an administered split or range of splits measured by BCMS. ## is optional. If not included, the report shows all splits.
VDN status report	**monitor bcms vdn ## print**	## is an administered VDN extension measured by BCMS.

Displaying, printing, and scheduling historical reports

The **list** commands are used to display historical information for agents, splits, trunk groups, and VDNs. There are eight secondary list commands:

list bcms agent

list bcms summary agent

list bcms split

list bcms summary split

list bcms trunk

list bcms summary trunk

list bcms vdn

list bcms summary vdn

With these commands, you can specify:

- Whether you want data that is collected during a specified range of dates or during a specified period of time. Data collected during a specified period of time is based on hourly or half-hourly intervals as administered in the `BCMS/VuStats Measurement Interval` field on the Feature-Related System Parameters screen.

  CAUTION:

  The switch stores time interval data in a time database that holds a maximum of 25 intervals. Data for the 26th interval overwrites the first interval in the time database (and so on). Therefore, if the half-hour option is selected, care should be exercised to ensure that time interval reports are run while the data for the desired interval is still available in the time database. For example, if you select the half-hour option, print the report twice daily to ensure that you do not lose information.

- The times or days for which you want to see data.
- That the system immediately display the report on your terminal.
- That the system print the report. If you include **print** at the end of the command, the system will immediately print the report to the printer attached to the management terminal. If you include **schedule** at the end of the command, the system will allow you to schedule the report to print to the system printer immediately (immediate), at a later time (deferred), or routinely at specified times (scheduled).

Use the steps in the following topics to display, print, or schedule historical reports.

This section includes the following topics:

Displaying historical reports

To display an historical report, complete the following steps:

1. Type the **list** command that will display the report you want to view. See Commands for displaying historical reports on page 29.
2. Press **RETURN**. The report displays on your screen.
3. Press **NEXTPAGE** to display subsequent pages and **PREVPAGE** to display previous pages if appropriate.

Commands for displaying historical reports

To view the	Enter	Where
Agent report (hourly/ half-hourly)	**list bcms agent ## time staffed *xx:xx xx:xx***	**##** is a valid agent extension or login ID measured by BCMS. **staffed** lists data only for the intervals that the agent has staffed time. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Agent report (daily)	**list bcms agent ## day staffed *xx/xx xx/xx***	**##** is a valid agent extension or login ID measured by BCMS. **staffed** lists data only for the days that the agent has staffed time. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.

Commands for displaying historical reports (continued)

To view the	Enter	Where
Agent summary report (hourly/ half-hourly)	**list bcms summary agent ## time staffed *xx:xx xx:xx***	**##** is a valid agent extension or login ID or range of extensions/ login IDs measured by BCMS. **staffed** lists data only for agents with staffed time. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Agent summary report (daily)	**list bcms summary agent ## day staffed *xx/xx xx/xx***	**##** is a valid agent extension or login ID or range of extensions/ login IDs measured by BCMS. **staffed** lists data only for agents with staffed time. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Split report (hourly/ half-hourly)	**list bcms split ## time *xx:xx xx:xx***	**##** is an administered split measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Split report (daily)	**list bcms split ## day *xx/xx xx/xx***	**##** is an administered split measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Split summary report (hourly/half-hourly)	**list bcms summary split ## time *xx:xx xx:xx***	**##** is an administered split or range of splits measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Split summary report (daily)	**list bcms summary split ## day *xx/xx xx/xx***	**##** is an administered split or range of splits measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.

Commands for displaying historical reports (continued)

To view the	Enter	Where
Trunk group report (hourly/half-hourly)	**list bcms trunk ## time *xx:xx xx:xx***	**##** is a trunk group measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Trunk group report (daily)	**list bcms trunk ## day *xx/xx xx/xx***	**##** is a trunk group measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Trunk group summary report (hourly/half-hourly)	**list bcms summary trunk ## time *xx:xx xx:xx***	**##** is a trunk group or range of trunk groups measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Trunk group summary report (daily)	**list bcms summary trunk ## day *xx/xx xx/xx***	**##** is a trunk group or range of trunk groups measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
VDN report (hourly/ half-hourly)	**list bcms vdn ## time *xx:xx xx:xx***	**##** is an administered VDN extension measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
VDN report (daily)	**list bcms vdn ## day *xx/xx xx/xx***	**##** is an administered VDN extension measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.

Commands for displaying historical reports (continued)

To view the	Enter	Where
VDN summary report (hourly/half-hourly)	`list bcms summary vdn ## time xx:xx xx:xx`	`##` is an administered VDN extension or range of extensions measured by BCMS. The first `xx:xx` is the start time. The second `xx:xx` is the stop time. Both use a 24-hour clock.
VDN summary report (daily)	`list bcms summary vdn ## day xx/xx xx/xx`	`##` is an administered VDN extension or range of extensions measured by BCMS. The first `xx/xx` is the start day. The second `xx/xx` is the stop day.

Printing historical reports

If you do not have a printer directly connected to your terminal, see Scheduling historical reports on page 35.

To print an historical report, complete the following steps:

4. Type the list command for the report that you want to print. See Commands for printing historical reports on page 33.

5. Press **RETURN**. The report prints on the printer that is attached to your terminal.

Commands for printing historical reports

To print the	Enter	Where
Agent report (hourly/ half-hourly)	**list bcms agent ## time staffed *xx:xx xx:xx* print**	***##*** is a valid agent extension or login ID measured by BCMS. **staffed** prints data only for the intervals that the agent has staffed time. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Agent report (daily)	**list bcms agent ## day staffed *xx/xx xx/xx* print**	***##*** is a valid agent extension or login ID measured by BCMS. **staffed** prints data only for the days that the agent has staffed time. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Agent summary report (hourly/ half-hourly)	**list bcms summary agent ## time staffed *xx:xx xx:xx* print**	***##*** is a valid agent extension or login ID or range of extensions/ login IDs measured by BCMS. **staffed** prints data only for agents with staffed time. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Agent summary report (daily)	**list bcms summary agent ## day staffed *xx/xx xx/xx* print**	***##*** is a valid agent extension or login ID or range of extensions/ login IDs measured by BCMS. **staffed** prints data only for agents with staffed time. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Split report (hourly/ half-hourly)	**list bcms split ## time *xx:xx xx:xx* print**	***##*** is an administered split measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.

Commands for printing historical reports (continued)

To print the	Enter	Where
Split report (daily)	**list bcms split ## day *xx/xx xx/xx* print**	*##* is an administered split measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Split summary report (hourly/half-hourly)	**list bcms summary split ## time *xx:xx xx:xx* print**	*##* is an administered split or range of splits measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Split summary report (daily)	**list bcms summary split ## day *xx/xx xx/xx* print**	*##* is an administered split or range of splits measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Trunk group report (hourly/half-hourly)	**list bcms trunk ## time *xx:xx xx:xx* print**	*##* is a trunk group measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Trunk group report (daily)	**list bcms trunk ## day *xx/xx xx/xx* print**	*##* is a trunk group measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Trunk group summary report (hourly/half-hourly)	**list bcms summary trunk ## time *xx:xx xx:xx* print**	*##* is a trunk group or range of trunk groups measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Trunk group summary report (daily)	**list bcms summary trunk ## day *xx/xx xx/xx* print**	*##* is a trunk group or range of trunk groups measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.

Commands for printing historical reports (continued)

To print the	Enter	Where
VDN report (hourly/ half-hourly)	**list bcms vdn ## time *xx:xx xx:xx* print**	*##* is an administered VDN extension measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
VDN report (daily)	**list bcms vdn ## day *xx/xx xx/xx* print**	*##* is an administered VDN extension measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
VDN summary report (hourly/ half-hourly)	**list bcms summary vdn ## time *xx:xx xx:xx* print**	*##* is an administered VDN extension or range of extensions measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
VDN summary report (daily)	**list bcms summary vdn ## day *xx/xx xx/xx* print**	*##* is an administered VDN extension or range of extensions measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.

Scheduling historical reports

The Report Scheduler allows you to schedule the day or days for the system to print the report. If you do not have a printer directly connected to your terminal, you can use the Report Scheduler feature to print the report immediately to the system printer. For more detailed information about the Report Scheduler, see System printer and Report Scheduler on page 91.

To schedule an historical report, complete the following steps:

1. Type the list command that will schedule the report. See Commands for scheduling historical reports on page 37.

2. Press **RETURN**.

   The Report Scheduler screen displays on your screen. The cursor is located in the `Print Interval` field.

```
list bcms agent ## time xx:xx xx:xx
                                                                    Page 1

                            REPORT SCHEDULER
                                                Date: 11:00 pm MON APR 23, 1990

    Job Id: 1                           Job Status: none

    Command: list bcms agent ## time xx:xx xx:xx

    Print Interval: immediate
```

Note:

If you do not have a printer directly connected to your terminal, you can immediately print the report to the system printer by pressing **ENTER**.

3. Enter **schedule** and press **RETURN**.

   The `Print Time` field displays beneath the `Print Interval` field, and fields for each day of the week display at the bottom of the screen. The cursor is located in the `Print Time` field.

```
list bcms agent ## time xx:xx xx:xx
         Page 1
                            REPORT SCHEDULER
                                                Date: 11:00 pm MON APR 23, 1990


    Job Id: 1                           Job Status: none

    Command: list bcms agent ## time xx:xx xx:xx

    Print Interval: scheduled

    Print Time: xx:xx


         Sun: n   Mon: n   Tue: n   Wed: n   Thu: n   Fri: n   Sat: n
```

4. Enter the time you want the report printed and press **RETURN**.

   The cursor moves to the **Sun** field.

5. Enter **y** for the days you want the report printed. Press **RETURN** to move the cursor to the next field.

6. When you are finished, press **ENTER**.

   The report has been scheduled, and the system presents the enter command: prompt.

CAUTION:

Note:

The commands for scheduling historical reports also can be used to defer printing of a report to a later time. See Report Scheduler on page 94 for more information.

Commands for scheduling historical reports

To Print the	Type	Where
Agent report (hourly/ half-hourly)	**`list bcms agent ## time staffed`** ***`xx:xx xx:xx`*** **`schedule`**	***`##`*** is a valid agent extension or login ID measured by BCMS. **`staffed`** prints data only for the intervals that the agent has staffed time. The first ***`xx:xx`*** is the start time. The second ***`xx:xx`*** is the stop time. Both use a 24-hour clock.
Agent report (daily)	**`list bcms agent ## day staffed`** ***`xx/xx xx/xx`*** **`schedule`**	***`##`*** is a valid agent extension or login ID measured by BCMS. **`staffed`** prints data only for the days that the agent has staffed time. The first ***`xx/xx`*** is the start day. The second ***`xx/xx`*** is the stop day.
Agent summary report (hourly/ half-hourly)	**`list bcms summary agent ## time staffed`** ***`xx:xx xx:xx`*** **`schedule`**	***`##`*** is a valid agent extension or login ID or range of extensions/ login IDs measured by BCMS. **`staffed`** prints data only for agents with staffed time. The first ***`xx:xx`*** is the start time. The second ***`xx:xx`*** is the stop time. Both use a 24-hour clock.

Commands for scheduling historical reports (continued)

To Print the	Type	Where
Agent summary report (daily)	**list bcms summary agent ## day staffed *xx/xx xx/xx* schedule**	**##** is a valid agent extension or login ID or range of extensions/ login IDs measured by BCMS. **staffed** prints data only for agents with staffed time. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Split report (hourly/ half-hourly)	**list bcms split ## time *xx:xx xx:xx* schedule**	**##** is an administered split measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Split report (daily)	**list bcms split ## day *xx/xx xx/xx* schedule**	**##** is an administered split measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Split summary report (hourly/half-hourly)	**list bcms summary split ## time *xx:xx xx:xx* schedule**	**##** is an administered split or range of splits measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Split summary report (daily)	**list bcms summary split ## day *xx/xx xx/xx* schedule**	**##** is an administered split or range of splits measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
Trunk group report (hourly/half-hourly)	**list bcms trunk ## time *xx:xx xx:xx* schedule**	**##** is a trunk group measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Trunk group report (daily)	**list bcms trunk ## day *xx/xx xx/xx* schedule**	**##** is a trunk group measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.

Commands for scheduling historical reports (continued)

To Print the	Type	Where
Trunk group summary report (hourly/half-hourly)	**list bcms summary trunk ## time *xx:xx xx:xx* schedule**	**##** is a trunk group or range of trunk groups measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
Trunk group summary report (daily)	**list bcms summary trunk ## day *xx/xx xx/xx* schedule**	**##** is a trunk group or range of trunk groups measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
VDN report (hourly/ half-hourly)	**list bcms vdn ## time *xx:xx xx:xx* schedule**	**##** is an administered VDN extension measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
VDN report (daily)	**list bcms vdn ## day *xx/xx xx/xx* schedule**	**##** is an administered VDN extension measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.
VDN summary report (hourly/half-hourly)	**list bcms summary vdn ## time *xx:xx xx:xx* schedule**	**##** is an administered VDN extension or range of extensions measured by BCMS. The first ***xx:xx*** is the start time. The second ***xx:xx*** is the stop time. Both use a 24-hour clock.
VDN summary report (daily)	**list bcms summary vdn ## day *xx/xx xx/xx* schedule**	**##** is an administered VDN extension or range of extensions measured by BCMS. The first ***xx/xx*** is the start day. The second ***xx/xx*** is the stop day.

Report reference

This section includes a quick reference to the commands that you can use to display, print, and schedule BCMS reports. See Generating reports on page 25 for more detailed instructions for displaying, printing, and scheduling reports.

The remainder of this chapter describes each report in detail, providing a brief description of each report, sample reports, and a description of the information contained in each report.

Note:

Most BCMS measurement data is collected at the end of a call, whereas hunt group measurements count calls as soon as they begin. Therefore, calls spanning a time interval boundary will be counted differently by the two. If comparing the measurements from BCMS with those from the hunt groups, there may be slight differences. However, both hunt group and BCMS measurements should indicate the same trends.

This section includes the following topics:

Report commands

The following table is a quick reference to the commands that you can use to display, print, and schedule BCMS reports.

Report commands table

Action	Object	Qualifiers[1] [2]
monitor	bcms split	split number [print]
	bcms system	[split number] [print]
	bcms vdn	extension [print]
list	bcms agent	extension|loginID[3] [time] [staffed] [start time] [stop time] [print|schedule]
		extension|loginID [day] [staffed] [start day] [stop day] [print|schedule]
	bcms summary agent	extension|loginID [time] [staffed] [start time] [stop time] [print|schedule]
		extension|loginID [day] [staffed] [start day] [stop day] [print|schedule]
	bcms split	split number [time] [start time] [stop time] [print|schedule]
		split number [day] [start day] [stop day] [print|schedule]
	bcms summary split	split number [time] [start time] [stop time] [print|schedule]
		split number [day] [start day] [stop day] [print|schedule]
	bcms trunk	group number [time] [start time] [stop time] [print|schedule]
		group number [day] [start day] [stop day] [print|schedule]
	bcms summary trunk	group number [time] [start time] [stop time] [print|schedule]
		group number [day] [start day] [stop day] [print|schedule]
	bcms vdn	extension [time] [start time] [stop time] [print|schedule]
		extension [day] [start day] [stop day] [print|schedule]
	bcms summary vdn	extension [time] [start time] [stop time] [print|schedule]
		extension [day] [start day] [stop day] [print|schedule]

1. Items depicted within brackets, such as [print], are optional. Items separated by a “pipe” symbol, such as “extension|loginID” indicate that you must select one or the other.
2. Whenever the command line qualifier [schedule] is initially executed, the system defaults the report for immediate printing (unless a day/time of day is scheduled) and generates a Job ID. The Job ID is required by the Report Scheduler feature for updating and deleting the schedule of reports
3. If BCMS/VuStats Login IDs is enabled on the System-Parameters Customer-Options screen, you must enter an agent login ID or a range of login IDs in place of the physical extension or range of extensions.

Real-time reports

BCMS provides three real-time reports:

- BCMS split status
- BCMS system status
- BCMS VDN status

The BCMS split status report provides the current (real-time) status and cumulative measurement data for those agents assigned to the split you specify. The BCMS system status report provides current (real-time) status information for either all BCMS splits or selected splits. The BCMS VDN status report provides the current (real-time) status and cumulative measurement data for VDNs monitored by BCMS.

This section includes the following topics:

Split status report

This section includes the following topics:

Command

```
monitor bcms split (split number) [print]
```

Description

The BCMS split status report provides the current (real-time) status and cumulative measurement data for those agents assigned to the split you specify. This report displays data accrued since the last interval boundary. For example, if the interval is set for hourly, and you issue the command to display the BCMS Split Status report at 11:10 a.m., the report displays the data accrued since 11:00 a.m. Although this report is updated

approximately every 30 seconds, you can immediately update the information on the screen by pressing **UPDATE**. At the beginning of the next interval, the report resets.

Sample report

```
monitor bcms split 30                                          Page   1 of   1
                          BCMS SPLIT (AGENT) STATUS

        Split: 30                           Date:   14:25 FRI OCT 26 2001
   Split Name: HNT-61
Calls Waiting:    5                      Acceptable Service Level: 20
  Oldest Call:   1:39                      % Within Service Level:

Staffed: 7   Avail: 1   ACD: 1   ACW: 2   AUX: 2   Extn Calls: 2   Other: 1

                                                        ACD    EXT IN  EXT OUT
AGENT NAME       LOGIN ID   EXT       STATE     TIME   CALLS   CALLS    CALLS

Agent 1          32191      12345     Avail    12:00      0       0        0
Agent 2          32192      12346     ACD      12:04      1       0        0
Agent 3          32193      12347     ACW      12:12      3       0        0
Agent 4          32194      12348     AUX      11:30      0       0        0
Agent 5          32195      12349     Ext In   12:08      1       2        0
Agent 6          32196      12350     Ext Out  12:10      0       0        1
Agent 7          32197      12351     Other    11:58      0       0        0
  $              32198      12352     INIT     00:00      0       0        0
```

Header definitions

Split status report

Header	Definition
Split	The split number specified with the command line.
Split Name	The administered name of the split. This name usually describes the purpose or service of the split (for example, sales, service, or help line). If no name exists, BCMS displays the split extension (for example, `EXT 65222`). The split name is limited to a maximum of 11 characters. If you enter more than 11 characters, the additional characters are not printed on the system printer.
Calls Waiting	The number of calls currently queued and calls ringing at an agent telephone. If any of the calls in the queue are Direct Agent calls, an asterisk displays before the value in this field.

Split status report (continued)

Header	Definition
Oldest Call	The number of minutes and seconds that the oldest call in queue has been waiting to be answered. This includes calls ringing at an agent telephone.
Acceptable Service Level	The desired time for an agent to answer a call for a given hunt group or VDN. Timing for a call begins when the call enters the hunt group queue.
% Within Service Level	The percentage of calls answered within the administered service level. This field is blank if no calls have been recorded for this time interval or if there is no Acceptable Service Level administered on the Hunt Group screen.
Staffed	The number of agents currently logged into the split. Staffed equals available agents, agents on ACD calls and agents in ACW, AUX, and Other.
Avail	The number of agents in this split currently available to receive an ACD call. In order to be counted as being available, agents must be in either Auto-In (AI) or Manual-In (MI) work mode. If the agent is on another split call or is performing After Call Work for another split, the agent is not considered available and is not recorded here. If a call is ringing at the agent telephone or a call is on hold, the agent is not considered available unless Multiple Call Handling is active and the agent selects AI/MI with a call on hold.
ACD	The number of agents who are currently on an ACD call for this split. This value also includes Direct Agent calls and those agents who are currently on ACD calls that flowed in from another split.
ACW	The number of agents in this split who are currently in ACW mode for this split. If an agent is in ACW mode for another split, the agent is included in the Other state count for this split. ACW includes agents who are on extension-in and extension-out calls while in ACW.
AUX	The number of agents in this split who are currently in the AUX work mode for this split. If an agent is answering a call from another split or is in ACW work mode for another split, that agent is not considered in AUX work mode for this split and is not included in this number. The agent is included in the Other state count. AUX includes agents who are on extension-in and extension-out calls while in AUX, Auto-In, and Manual-In.
Extn Calls	The number of agents in this split who are currently on non-ACD calls. These non-ACD calls may be either incoming (direct to the extension) or outgoing (direct from the extension). Those agents receiving or making extension calls while available, or while in the ACW or AUX work modes are recorded as being on extension calls.

Split status report (continued)

Header	Definition
Other	The number of agents in this split who: • Are on a call from another split • Are in ACW work mode for another split • Have placed a call on HOLD and made no other state selections • Have a call ringing at their telephones • Are dialing a number (to place a call or activate a feature) All of the agents in the Other state are unavailable for ACD calls.
AGENT NAME	The name of the agent. Generally, this is the first or last name of the agent. However, if no name is administered on the telephone display, this field is left blank. When the field is blank, the data can be identified by the extension.
LOGIN ID	The BCMS login IDs (taken from the BCMS/VuStats Login ID screen or EAS Login screen) for which you requested the report. This column is empty if BCMS login IDs are not optioned.
EXT	The extension number for the agent.
STATE	The current work state for the agent. Possible work states are Avail, ACD, ACW, AUX, Extn, and Other. Unstaffed agents do not display on the report. When the system time is changed, agents are in the INIT state. Each agent remains in the INIT state until that agent takes a call or pushes a work mode button.
TIME	The 24-hour clock time at which the agent entered this work state.
ACD CALLS	The number of ACD calls that the agent has completed since the beginning of the current interval. This value includes any calls that flowed in from other splits. (Calls in process are not counted until they are completed.)
EXT IN CALLS	The number of non-ACD calls that the agent has received (incoming) since the beginning of the current interval. (Calls in process are not counted until they are completed.) The maximum value is 255. If an extension-in call is active for less than the time set for the Abandon Call Timer, the call will not be counted in this field. The duration of such calls is counted as AUX/OTHER time.
EXT OUT CALLS	The number of non-ACD calls that the agent has made (outgoing) since the beginning of the current interval. (Calls in process are not counted until they are completed.) The maximum value is 255.

System status report

This section includes the following topics:

Command

```
monitor bcms system [split number] [print]
```

Description

The BCMS system status report provides current (real-time) status information for either all BCMS splits or selected BCMS splits. This report displays data accrued since the last interval boundary. For example, if the interval is set to hour, and you issue the command to display the BCMS system status report at 11:10 a.m., the report displays the data accrued since 11:00 a.m. Although this report is updated approximately every 30 seconds, you can immediately update the information on the screen by pressing **UPDATE**. This report is reset at the beginning of the time interval (for example, hour or half-hour).

When analyzing this report, keep the following things in mind:

- All averages are for completed calls only.
- A completed call may span more than one time interval. ACD calls that are in process (have not terminated) are counted in the time interval in which they terminate. For example, if an ACD call begins in the 10:00 to 11:00 time interval, but terminates in the 11:00 to 12:00 time interval, the data for this call is counted in the 11:00 to 12:00 time interval.
- Asterisks indicate that the maximum for the associated field has been exceeded.

Sample report

```
monitor bcms system
                           BCMS SYSTEM STATUS
                                         Date:  12:53 MON MAY 15, 1995

                          AVG               AVG          AVG   AVG   % IN
             CALLS OLDEST SPEED AVAIL ABAND ABAND ACD     TALK  AFTER SERV
SPLIT NAME   WAIT  CALL   ANS   AGENT CALLS TIME  CALLS   TIME  CALL  LEVL

Service         3   1:03   :45     0     3   :30     20  2:30   1:25   85
EXT 4000        5    :33   :15     0    11   :45     36  1:32    :35   91
```

Header definitions

System status report

Header	Definition
SPLIT NAME	The name of the split (for example, sales, service, or help line). If no name exists, the split extension (for example, `EXT 12345`) is displayed.
CALLS WAIT	The number of calls in the split queue that are currently waiting to be answered and calls ringing at an agent telephone. If any of the calls in the queue are Direct Agent calls, an asterisk displays before this field.
OLDEST CALL	The number of minutes and seconds the oldest call in queue has been waiting to be answered. This includes calls ringing at an agent telephone.

System status report (continued)

Header	Definition
AVG SPEED ANS	The average amount of time it takes before the calls are answered by agents. This value includes time waiting in the queue and time ringing at the agent telephone. The calculation is: $\frac{\text{Sum of Each Completed Call's Time In Queue + Time Ringing}}{\text{Total Number of ACD Calls Answered}}$ Keep the following things in mind: • Calls that flow in from other splits do not include *time in queue* from the other splits in this calculation. Also, the AVG SPEED ANS does not include time spent listening to a forced first announcement. • A completed call may span more than one time period. ACD calls that are in process (have not terminated) are counted in the time period in which they terminate. For example, if an ACD call begins in the 10:00 to 11:00 time period, but terminates in the 11:00 to 12:00 time period, the data for this call is counted in the 11:00 to 12:00 time period. • Asterisks indicate that the maximum for the associated field has been exceeded.
AVAIL AGENT	The number of agents in this split who are currently available to receive an ACD call directed to this split.
ABAND CALLS	The total number of ACD callers that have hung up while waiting to be answered. This includes those calls that have abandoned while in queue or while ringing. Calls that are not queued (for example, because the queue is full, the caller receives a forced first announcement and abandons during the announcement, or because no agents are staffed) are not counted as abandoned for the hunt group.
AVG ABAND TIME	The average time before an ACD call abandons. This does not include any time spent in another split queue before intraflowing to this split. The calculation is: $\frac{\text{Total Abandon Time}}{\text{Total Number of Abandoned Calls}}$ This value does not include time spent listening to a forced first announcement or calls that abandon while listening to a forced first announcement.
ACD CALLS	The number of ACD calls completed during the current interval. This number also includes those calls that flow in from other splits.

System status report (continued)

Header	Definition
AVG TALK TIME	The average duration of ACD calls for each split. This calculation includes the time each agent spent talking but does not include ring time at an agent telephone. Split talk time appears less than the VDN talk time in the reports. This is because AVG TALK/HOLD time by VDN includes the time spent on hold while the split/agent AVG TALK does not. Also, VDN talk time does *not* include talk time for a call that becomes part of a conference while split/agent talk time does. This situation will show a greater talk time for the split. The calculation is: $\frac{\text{Total ACD Talk Time}}{\text{Total Number of ACD Calls Answered}}$
AVG AFTER CALL	The average ACW time for call-related ACW time completed by agents in this split during this time interval. Call-related ACW is the time that occurs immediately after an ACD call (that is, when an agent was in Manual mode and an ACD call ended, or when the agent presses the ACW button during an ACD call). AVG AFTER CALL does not include time spent on direct incoming or outgoing calls while in ACW or time that immediately follows an EXTN call. The calculation is: $\frac{\text{Total Call-Related ACW Time}}{\text{Number of Call-Related ACW Sessions}}$ The average is for ACW sessions, which may not correspond to the number of ACD calls, either because some ACD calls did not have ACW time or because the call was recorded in another interval.
% IN SERV LEVL	The percentage of calls answered within the administered service level for this split. Calculation is based on the following $\frac{\text{accepted} * 100}{\text{ACDcalls} + \text{abandons} + \text{outflows} + \text{dequeued}}$ where: • *accepted* is calls answered whose queue time was less than or equal to the administered service level for the split. • *dequeued* is a call that encountered the split queue, but which was *not* answered, abandoned, or outflowed. This occurs with multiple split queuing.

VDN status report

This section includes the following topics:

Command

monitor bcms vdn *extension [print]*

Description

The VDN status report gives real-time status information for internally measured VDNs. You must specify the extensions of the VDNs you want the system to monitor. You can specify the extensions in a list or in a range format.

For example, **monitor bcms vdn 123456 123467 123530-123539**.

Sample report

```
 monitor bcms vdn 12345-12349

BCMS VECTOR DIRECTORY NUMBER STATUS
                                                Date: 15:30 Mon May 15, 1995

                              AVG           AVG    AVG                  CALLS % IN
            CALLS OLDEST ACD   SPEED  ABAND ABAND  TALK/ CONN   FLOW  BUSY/ SERV
 VDN NAME   WAIT  CALL   CALLS ANS    CALLS TIME   HOLD  CALLS  OUT   DISC  LEVL

 knives        5    :25    50   :39      5   :45   2:30     0     0     24   91
 EXT 12346*    0    :00     0   :00      0   :00    :00     0     0      0    0
```

Header definitions

VDN status report

Header	Definition
Date	The current date and time (updated every 30 seconds or when **Update** is pressed).
VDN NAME	The name of the VDN being reported. If the VDN does not have a name administered, this field displays `EXT ##` where `##` is the VDN extension.
CALLS WAIT	The number of calls that encountered this VDN and have not been answered, abandoned, outflowed, or forced busy/disc. Includes calls in queues, in vector processing, and ringing at an agent telephone.

VDN status report (continued)

Header	Definition
OLDEST CALL	The time the oldest call currently waiting has waited in the VDN. Timing starts when the call enters the VDN.
ACD CALLS	The number of completed ACD calls answered in a BCMS-measured split. The split may have been reached via the queue-to-main, check backup, route-to, messaging split, or adjunct routing commands. Includes Direct Agent calls (EAS only).
AVG SPEED ANS	The average speed of answer for ACD and connect calls (see CONN CALLS below) that have completed for this VDN during the current period. This includes the time in vector processing, in a split queue, and time ringing. The calculation is: $\frac{\text{Total Answer Time}}{\text{Total ACD Calls + Total CONNect CALLS}}$ Answer time for a call is recorded when the call ends. For example, if a call originates in interval x, is answered in interval y, and ends in interval z, the associated answer and talk times are recorded in interval z.
ABAND CALLS	The number of calls to this VDN that have abandoned before being answered during the current period. This includes VDN calls that were routed to an attendant, telephone, or announcement, and abandoned before being answered.
AVG ABAND TIME	The average time abandoned calls waited before abandoning during the current period. The calculation is: $\frac{\text{Total Abandon Time}}{\text{Total Calls Abandoned}}$
AVG TALK/ HOLD	The average talk time for ACD calls completed by this VDN during the current period. This does not include ring time, but it does include any time the caller spent on hold. Split talk time appears less than the VDN talk time in the reports. This is because AVG TALK/HOLD time by VDN includes the time spent on hold while the split/agent AVG TALK does not. Also, VDN talk time does *not* include talk time for a call that becomes part of a conference while split/agent talk time does. This situation will show a greater talk time for the split. The calculation is: $\frac{\text{Total Talk Time}}{\text{ACD Calls}}$
CONN CALLS	The number of completed calls that were routed to a telephone, attendant, announcement, messaging split, or call pickup and were answered there.
FLOW OUT	The number of calls that were routed to another VDN or to a trunk, including successful look-ahead attempts.

VDN status report (continued)

Header	Definition
CALLS BUSY/DISC	The number of calls that were forced busy or forced disconnect during the current interval. This value includes: • Calls that encountered a busy or disconnect vector step • Calls disconnected by a stop vector step • Calls forwarded to a split with a full queue • Calls forwarded to a split with no available agents and no queue This value does not include abandoned calls.
% IN SERV LEVL	The percent of calls offered that completed and were answered within the acceptable service level defined on the VDN screen. The calculation is: $\frac{\text{accepted} * 100}{\text{calls offered}}$ *calls offered* is defined as: acdcalls + flowout calls + abandoned + connect + busy/disc *accepted* is the number of ACD and CONNect calls that were answered within the administered service level. This field is blank if no calls were recorded for this time interval. This field is also blank if no Acceptable Service Level has been administered on the VDN screen.

Historical reports

BCMS provides eight historical reports. These reports give you information for an interval of time. You can print the reports for a period of time measured in minutes or hours, or a period of time measured in days.

This section includes the following topics:

Types of BCMS historical reports

The types of BCMS historical reports are as follows:

- Agent
- Agent summary
- Split
- Split summary
- Trunk group
- Trunk group summary
- VDN
- VDN summary

Agent report

This section includes the following topics:

Command

list bcms agent ***extension/loginID [time] [staffed] [start time] [stop time] [print/schedule]***

list bcms agent ***extension/loginID [day] [staffed] [start day] [stop day] [print/schedule]***

Description

The BCMS agent report provides traffic information for the specified agent. Depending on specifics from the command line, the information may be displayed as either a time interval or a daily summary. If neither time nor day is specified, time is the default. In this case, the report displays data accrued for the previous 24 time intervals (hour or half-hour), including data from the most recently completed time interval. To get information on the current time interval, you must use a **monitor bcms** command.

When analyzing this report, keep the following in mind:

- All averages are for completed calls only.
- A completed call may span more than one time interval. ACD calls that are in process (have not terminated) are counted in the time interval in which they terminate. For example, if an ACD call begins in the 10:00 to 11:00 time interval, but terminates in the 11:00 to 12:00 time interval, the data for this call is counted in the 11:00 to 12:00 time interval.

Asterisks indicate that the maximum for the associated field has been exceeded.

Sample reports

Hourly report

```
 list bcms agent 4222 8:00
                                BCMS AGENT REPORT

Switch Name: Lab Model                          Date: 11:05 am MON MAY 15, 1995
      Agent: 4222
 Agent Name: s-jones

                    AVG    TOTAL   TOTAL   TOTAL        AVG   TOTAL    TOTAL
             ACD    TALK   AFTER   AVAIL   AUX/  EXTN   EXTN  TIME     HOLD
TIME         CALLS  TIME   CALL    TIME    OTHER CALLS  TIME  STAFFED  TIME

 8:00- 9:00    10   1:15    7:30   25:00   10:40     1  4:00    60:00    :20
 9:00-10:00    18   1:40   18:00    4:20     :00     2  3:20    60:00   1:00
10:00-11:00    10   1:20    8:20   16:10     :00     0   :00    38:00    :10
-----------  ----- ------ ------- ------- ------- ----- ----- -------- ------
SUMMARY        38   1:28   33:50   45:30   10:40     3  3:33   158:00   1:30
```

Daily report

```
 list bcms agent 4222 day 5/13
                                BCMS AGENT REPORT

Switch Name: Lab Model                          Date: 11:05 am MON MAY 15, 1995
      Agent: 4222
 Agent Name: s-jones

                    AVG    TOTAL   TOTAL   TOTAL        AVG   TOTAL    TOTAL
             ACD    TALK   AFTER   AVAIL   AUX/  EXTN   EXTN  TIME     HOLD
DAY          CALLS  TIME   CALL    TIME    OTHER CALLS  TIME  STAFFED  TIME

 5/14/95      200   1:30  100:00   35:00   80:00    10  2:00   540:00   5:00
 5/13/95       38   1:28   34:12   45:30   10:40     3  3:33   158:00   1:30
-----------  ----- ------ ------- ------- ------- ----- ----- -------- ------
SUMMARY       238   1:30  134:12   80:30   90:40    13  2:22   698:00   6:30
```

Header definitions

Agent report

Header	Definition
Agent	The extension or login ID of the agent.
Agent Name	The name of the agent. If no name is administered, this field displays `EXT ##` where ## is the agent extension.
TIME/DAY	The time or day interval specified in the command line. Time is always expressed in 24-hour format. Start and stop times are optional. Reports always start at the earliest time interval (either hour or half-hour). If no start time is given, the oldest time interval is the default. A stop time requires an associated start time. If no stop time is given, the last completed time interval (hour or half-hour) is the default. If no start time or stop time is given, the report displays data accrued for the previous 24 time intervals. If you specify day in the command and do not include a start day or stop day, the report displays data accrued for the previous 6 days and data accrued through the most recently completed interval (hour or half-hour) for the current day.
ACD CALLS	The number of ACD calls answered by this agent for all splits during the reporting interval. This value includes calls that flowed in from other splits and Direct Agent calls.
AVG TALK TIME	The average duration of ACD calls for all splits the agent was logged into. This value includes time spent talking but does not include the amount of time the agent was holding an ACD call or ring time at the agent telephone. Split talk time appears less than the VDN talk time in the reports. This is because AVG TALK/HOLD time by VDN includes the time spent on hold while the split/agent AVG TALK does not. Also, VDN talk time does *not* include talk time for a call that becomes part of a conference while split/agent talk time does. This situation will show a greater talk time for the split. The calculation is: $\frac{\text{Total ACD Talk Time}}{\text{Total Number of ACD Calls Answered}}$
TOTAL AFTER CALL	The total amount of time that the agent spent in call-related or non-call-related ACW work states for all splits during the reporting interval. This includes time agents spent on extension-in and extension-out calls while in the ACW work mode. If an agent entered ACW in one interval, but ended ACW in another interval, the appropriate amount of ACW time is credited to each of the intervals.

Agent report (continued)

Header	Definition
TOTAL AVAIL TIME	The sum of the time that the agent was available to receive ACD calls during the reporting interval. During this time, the agent: • Was in Auto-In or Manual-In work mode for at least one split • Was not in ACW in any split • Was not on any call or placing any call (unless Multiple Call Handling [MCH] is active) • Did not have ringing calls
TOTAL AUX/ OTHER	The total time that this agent was unavailable to receive calls in any split during the reporting interval. A split totals AUX TIME whenever any agent is logged into the split and: • Receives an EXTN call while in AUX or AVAIL state • Makes an EXTN call while in AUX or AVAIL state • Presses his or her AUX button Note that if the agent was in Other for all logged-in splits, that time is reflected here. For example, ringing calls can cause several seconds of AUX/OTHER time to accrue. For the agent report, any non-ACD call time is also totaled in the AVG EXTN TIME column. Two points of contrast are: • The measurement TOTAL AUX/OTHER is time-interval based, rather than call-related. For example, assuming that the previously identified stipulations are met, if the agent is in AUX from 9:55 to 10:05, 5 minutes is recorded in the 9:00 to 10:00 time interval and 5 minutes is recorded in the 10:00 to 11:00 time interval. • The measurement AVG EXTN TIME is call related. For example, if an agent is on a non-ACD call from 9:55 to 10:05, the call and 10 minutes of EXTN time is recorded in the 10:00 to 11:00 time interval. Because the agent report includes some call-related items, the sum of all items for a given hour may not exactly equal 60 minutes.
EXTN CALLS	The total number of non-ACD incoming and outgoing calls for this agent during the reporting interval. Only those non-ACD calls that are originated and/or received while the agent is logged into at least one split are counted. If an extension-in call is active for less than the time set for the Abandon Call Timer, the call will not be counted in this field.
AVG EXTN TIME	The average amount of time that the agent spent on non-ACD calls while logged into at least one split during the reporting interval. This average does not include time when the agent was holding the EXTN call. The calculation is: $\frac{\text{Total Ext Time}}{\text{Total Number of Ext Calls}}$ If an extension-in call is active for less than the time set for the Abandon Call Timer, the call will not be counted and the duration of the call will be counted as AUX/OTHER time.

Agent report (continued)

Header	Definition
TOTAL TIME STAFFED	The total time that the agent spent logged into at least one split during the reporting interval. Staff time is clocked for an agent who is in multiple splits as long as the agent is logged into any split. Concurrent times for each split are not totaled.
TOTAL HOLD TIME	The total time that the agent placed ACD calls on hold. This time is the caller hold time and is independent of the state of the agent. TOTAL HOLD TIME does not include the hold time for non-ACD calls.
SUMMARY	The total of each of the columns that do not contain averages. Columns that do contain averages are the total time divided by the total number of calls.

Agent summary report

This section includes the following topics:

Command

```
list bcms summary agent extension|loginID [time] [staffed]
  [start time] [stop time] [print/schedule]

list bcms summary agent extension|loginID [day] [staffed]
  [start day] [stop day] [print/schedule]
```

Description

This report is similar to the BCMS agent report except that this report provides one line of data for each agent. You can specify one or more agents by entering agent IDs or extensions. Data for an agent does not appear on the report if there is no data for that agent. If you specify that you want the report to include more than one time period, and the data exists for one or more, but not all of the specified times, the system uses the available data to calculate and display the one-line summary; the system does not identify which times are not included in the calculations.

Sample reports

Hourly summary

```
 list bcms summary agent 4222-4224 4869 time 8:00-12:00

                          BCMS AGENT SUMMARY REPORT

Switch Name: Lab Model                            Date: 11:05 am MON MAY 15, 1995
       Time: 8:00-12:00

                    AVG    TOTAL   TOTAL   TOTAL        AVG   TOTAL    TOTAL
              ACD   TALK   AFTER   AVAIL   AUX/  EXTN   EXTN  TIME     HOLD
AGENT NAME    CALLS TIME   CALL    TIME    OTHER CALLS  TIME  STAFFED  TIME

 s-jones        10  1:15    7:30   25:00   10:40     1  4:00    60:00    :20
 t-anderson     18  1:40   18:00    4:20     :00     2  3:20    60:00   1:00
 j-jacobsen     10  1:20    8:20   16:10     :00     0   :0     38:00    :10
-----------  ----- ------ ------- ------- ------- ----- ----- -------- ------
SUMMARY         38  1:28   33:50   45:30   10:40     3  3:33   158:00   1:30
```

Daily summary

```
 list bcms sum agent 4222-4223 4869 day 5/14

                          BCMS AGENT SUMMARY REPORT

Switch Name: Lab Model                            Date: 11:05 am MON MAY 15, 1995
        Day: 5/14

                    AVG    TOTAL   TOTAL   TOTAL        AVG   TOTAL    TOTAL
              ACD   TALK   AFTER   AVAIL   AUX/  EXTN   EXTN  TIME     HOLD
AGENT NAME    CALLS TIME   CALL    TIME    OTHER CALLS  TIME  STAFFED  TIME

 s-jones        10  1:15    7:30   25:00   10:40     1  4:00    60:00    :20
 t-anderson     18  1:40   18:00    4:20     :00     2  3:20    60:00   1:00
 j-jacobsen     10  1:20    8:20   16:10     :00     0   :0     38:00    :10
-----------  ----- ------ ------- ------- ------- ----- ----- -------- ------
SUMMARY         38  1:28   33:50   45:30   10:40     3  3:33   158:00   1:30
```

Header definitions

Agent summary report

Header	Definition
Time/Day	The time or day interval specified in the command line. Time is always expressed in 24-hour format. Start and stop times are optional. Reports always start at the earliest time interval (either hour or half-hour). If no start time is given, the most recent time interval is the default. A stop time requires an associated start time. If no stop time is given, only the start interval/day is used. If no start time or stop time is given, the most current interval/day is used. If you specify day in the command and do not include a start day or stop day, the report displays data for the current day accrued through the most recently completed interval (hour or half-hour).
AGENT NAME	The name of the agent. If no name is administered, this field displays `EXT ##` where `##` is the agent extension.
ACD CALLS	The number of ACD calls answered by this agent for all splits during the reporting interval. This value includes calls that flowed in from other splits and Direct Agent calls.
AVG TALK TIME	The average duration of ACD calls for all splits the agent was logged into. This value includes time spent talking but does not include the amount of time the agent was holding an ACD call or ring time at the agent telephone. Split talk time appears less than the VDN talk time in the reports. This is because AVG TALK/HOLD time by VDN includes the time spent on hold while the split/agent AVG TALK does not. Also, VDN talk time does *not* include talk time for a call that becomes part of a conference while split/agent talk time does. This situation will show a greater talk time for the split. The calculation is: $\frac{\text{Total ACD Talk Time}}{\text{Total Number of ACD Calls Answered}}$
TOTAL AFTER CALL	The total amount of time that the agent spent in call-related or non-call-related ACW work states for all splits during the reporting interval. This includes time agents spent on extension-in and extension-out calls while in the ACW work mode. If an agent entered ACW in one interval, but ended ACW in another interval, the appropriate amount of ACW time is credited to each of the intervals.

Agent summary report (continued)

Header	Definition
TOTAL AVAIL TIME	The sum of the time that the agent was available to receive ACD calls during the current interval. During this time, the agent: • Was in Auto-In or Manual-In work mode for at least one split • Was not in ACW in any split • Was not on any call or placing any call (unless Multiple Call Handling [MCH] is active) • Did not have ringing calls
TOTAL AUX/ OTHER	The total time that each agent was unavailable to receive calls in any split during the reporting interval. A split totals AUX TIME whenever any agent is logged into the split and: • Receives an EXTN call while in AUX or AVAIL state • Makes an EXTN call while in AUX or AVAIL state • Presses his or her AUX button Note that if the agent was in Other for all logged-in splits, that time is reflected here. For example, ringing calls can cause several seconds of AUX/OTHER time to accrue. For the agent report, any non-ACD call time is also totaled in the AVG EXTN TIME column. Two points of contrast are: • The measurement TOTAL AUX/OTHER is time-interval based, rather than call-related. For example, assuming that the previously identified stipulations are met, if the agent is in AUX from 9:55 to 10:05, 5 minutes is recorded in the 9:00 to 10:00 time interval and 5 minutes is recorded in the 10:00 to 11:00 time interval. • The measurement AVG EXTN TIME is call related. For example, if an agent is on a non-ACD call from 9:55 to 10:05, the call and 10 minutes of EXTN time is recorded in the 10:00 to 11:00 time interval. Because the agent report includes some call-related items, the sum of all items for a given hour may not exactly equal 60 minutes.
EXTN CALLS	The total number of non-ACD incoming and outgoing calls for this agent during the reporting interval. Only those non-ACD calls that are originated and/or received while the agent is logged into at least one split are counted. If an extension-in call is active for less than the time set for the Abandon Call Timer, the call will not be counted in this field.
AVG EXTN TIME	The average amount of time that the agent spent on non-ACD calls while logged into at least one split during the reporting interval. This average does not include time when the agent was holding the EXTN call. The calculation is: $\frac{\text{Total Ext Time}}{\text{Total Number of Ext Calls}}$ If an extension-in call is active for less than the time set for the Abandon Call Timer, the call will not be counted and the duration of the call will be counted as AUX/OTHER time.

Agent summary report (continued)

Header	Definition
TOTAL TIME STAFFED	The total time that the agent spent logged into at least one split during the reporting interval. Staff time is clocked for an agent who is in multiple splits as long as the agent is logged into any split. Concurrent times for each split are not totaled.
TOTAL HOLD TIME	The total time that the agent placed ACD calls on hold. This time is the caller hold time and is independent of the state of the agent. TOTAL HOLD TIME does not include the hold time for non-ACD calls.
SUMMARY	The total of each of the columns that do not contain averages. Columns that do contain averages are the total time divided by the total number of calls.

Split report

This section includes the following topics:

Command

`list bcms split (split number)` ***`[time] [start time] [stop time] [print/schedule]`***

`list bcms split (split number)` ***`[day] [start day] [stop day] [print/schedule]`***

Description

The BCMS split report provides traffic information for the specified split number. Depending on specifics from the command line, the information may be displayed as either a time interval or a daily summary. If neither time nor day is specified, time is the default. In this case, the report displays data accrued for the previous 24 time intervals (hour or half-hour), including data from the most recently completed time interval. To get information on the current time interval, you must use a **`monitor bcms`** command.

When analyzing this report, keep the following in mind:

- All averages are for completed calls only.

- A completed call may span more than one time interval. ACD calls that are in process (have not terminated) are counted in the time interval in which they terminate. For example, if an ACD call begins in the 10:00 to 11:00 time interval, but terminates in the 11:00 to 12:00 time interval, the data for this call is counted in the 11:00 to 12:00 time interval.
- Asterisks within a field indicate that the maximum for that field has been exceeded.

Sample reports

Hourly report

```
 list bcms split 3 time 8:00-10:00
BCMS SPLIT REPORT

Switch Name: Lab Model                          Date: 11:05 am MON MAY 15, 1995
      Split: 03
 Split Name: services                            Acceptable Service Level: 17

                  AVG           AVG    AVG    TOTAL              TOTAL       % IN
             ACD  SPEED ABAND   ABAND  TALK   AFTER  FLOW FLOW   AUX/  AVG   SERV
TIME         CALLS ANS   CALLS  TIME   TIME   CALL   IN   OUT    OTHER STAFF LEVL

 8:00- 9:00    32   :25     4    :32  5:15   16:00     3    5    3:30   4.0   80*
 9:00-10:00     8   :07     1    :03  3:20     :00     0    0    9:30   2.2   85
------------ ----- ----- -----  ----- ----- -------  ---- ---- ------ ----- ---
 SUMMARY       40   :21     5    :26  4:52     :26     3    5   13:00   3.1   81
```

Daily report

```
 list bcms split 3 day 5/14/95

                              BCMS SPLIT REPORT

Switch Name: Lab Model                          Date: 11:05 am MON MAY 15, 1995
      Split: 03
 Split Name: services                            Acceptable Service Level: 17

                  AVG           AVG    AVG    TOTAL              TOTAL       % IN
             ACD  SPEED ABAND   ABAND  TALK   AFTER  FLOW FLOW   AUX/  AVG   SERV
DAY          CALLS ANS   CALLS  TIME   TIME   CALL   IN   OUT    OTHER STAFF LEVL

 5/14/95       40   :21     5    :26  4:52   17:20     3    5   13:00   3.1   81
 --------    ----- -----  ----  ----- ----- ------- ---- ---- ------- ----- ---
SUMMARY        40   :21     5    :26  4:52   17:20     3    5   13:00   3.1   81
```

Header definitions

Split report

Header	Definition
Split	The split number specified with the command line.
Split Name	Displays the name that is administered for this split number. If no name exists, BCMS displays the split extension (for example, `EXT 65432`).
Acceptable Service Level	The desired time for an agent to answer a call for a given hunt group. Timing for a call begins when the call enters the hunt group queue.
TIME/DAY	The time or day interval specified in the command line. Time is always expressed in 24-hour format. Start and stop times are optional. Reports always start at the earliest time interval (either hour or half-hour). If no start time is given, the oldest time interval is the default. A stop time requires an associated start time. If no stop time is given, the last completed time interval (hour or half-hour) is the default. If no start or stop time is given, the report displays data accrued for the previous 24 time intervals. If you specify day in the command and do not include a start day or stop day, the report displays data accrued for the previous 6 days and data accrued through the most recently completed interval (hour or half-hour).
ACD CALLS	The number of ACD calls completed for this split during the current interval. This number also includes calls that flowed in from other splits and Direct Agent (EAS only) calls.
AVG SPEED ANS	The average amount of time answered ACD calls (split and Direct Agent) spent in queue and ringing at an agent telephone before being answered during the reporting interval. Calls that flowed in do not have queue time from the previous split included in this average. This calculation is: $\frac{\text{Sum of Each Completed Call's Time In Queue + Time Ringing}}{\text{Total Number of ACD Calls Answered}}$ Keep the following in mind: ● This value does not include time listening to a forced first announcement. ● A completed call may span more than one time period. ACD calls that are in process (have not terminated) are counted in the time period in which they terminate. For example, if an ACD call begins in the 10:00 to 11:00 time period, but terminates in the 11:00 to 12:00 time period, the data for this call is counted in the 11:00 to 12:00 time period.

Split report (continued)

Header	Definition
ABAND CALLS	The total number of ACD calls that have hung up while waiting to be answered during this time interval. This value includes those calls that have abandoned while in queue or while ringing. Calls that are not queued (because the queue is full, the caller receives a forced first announcement and abandons during the announcement, or because no agents are staffed) are not counted as abandoned. Also, calls that abandon while on hold are not counted as abandoned.
AVG ABAND TIME	The average time before an ACD call abandons. This value does not include any time spent in another split queue before flowing into this split. The calculation is: $\frac{\text{Total Abandon Time}}{\text{Total Number of Abandoned Calls}}$ This value does not include time listening to a forced first announcement or calls that abandon while listening to a forced first announcement.
AVG TALK TIME	The average amount of time agents are active on ACD calls (split and direct agent) for each split. This includes time spent talking. The calculation does not include ring time at an agent telephone or time spent on hold. Split talk time appears less than the VDN talk time in the reports. This is because AVG TALK/HOLD time by VDN includes the time spent on hold while the split/agent AVG TALK does not. Also, VDN talk time does *not* include talk time for a call that becomes part of a conference while split/agent talk time does. This situation will show a greater talk time for the split. The calculation is: $\frac{\text{Total ACD Talk Time}}{\text{Total Number of ACD Calls Answered}}$
TOTAL AFTER CALL	The amount of time that the agents in this split spent in call-related or noncall-related ACW mode during the reporting interval. This value includes time spent on direct incoming or outgoing calls while in ACW. If an agent entered ACW in one interval, but left ACW in another interval, each interval is credited with ACW time.
FLOW IN	The total number of completed calls that this split received as a coverage point (intraflowed) from another BCMS-measured split, or are call forwarded (interflowed) to this split and completed during the reporting interval. This total does not include calls that are interflowed from a remote switch by means of the Look Ahead Interflow feature. FLOW INs are recorded when a call ends.

Split report (continued)

Header	Definition
FLOW OUT	The total number of calls queued to this split that were: ● Successfully sent to the split coverage point after queuing for the specified *don't answer* interval. (This does not include calls that went to coverage based on any other criterion.) ● Forwarded-out via call forwarding. ● Forwarded-out via a *route-to extension* vector step. ● Answered via the Call Pickup feature. ● Forwarded-out via Look Ahead Interflow. ● First queued to this split and were answered by the second or third split. ● Redirected back to this split or its coverage path due to Redirect On No Answer timing. FLOW OUTs are recorded when a call ends.
FLOW OUT (continued)	In a multiple split-queuing environment, inflows and outflows become a bit more complicated. Consider the following scenarios: ● If a multiple queued call is answered in a nonprimary split (that is, a second or third split), an outflow is recorded in the statistics for the first split, and an inflow and an answer are recorded in the statistics for the answering split. For example, suppose there are three splits numbered 1 through 3. A call comes in for split 1, but all agents in this split are busy. The call goes into queue for splits 2 and 3. An agent in split 3 answers the call. In this example, an outflow is recorded in the statistics for split 1, and an inflow and an answer are recorded in the statistics for split 3. A dequeued call is counted for split 2. ● If the call is answered in the primary split, no inflows or outflows are recorded for any split. Splits 2 and 3 record the call as dequeued. ● If a call is queued to three splits (for example, splits 1, 2, and 3, with split 1 being the primary split), encounters a `route-to` command that sends the call to another VDN, that queues to different splits (for example, splits 4 and 5), an outflow is recorded in the statistics for split 1. If the call is answered in split 4, an answer is recorded in the statistics for split 4. However, no inflow is recorded to the statistics for split 4. ● If the call is answered in split 5, an outflow is recorded for the statistics for split 4, and both an inflow and an answer are recorded in the statistics for split 5. ● Similarly, if a multiple queued call routes to another split, an outflow is recorded to the statistics for the primary split, but no inflow is recorded to the statistics for the routed-to split.

Split report (continued)

Header	Definition
TOTAL AUX/ OTHER	The total time that logged-in agents in this split were unavailable to receive calls during the reporting interval. This value includes time spent on non-ACD calls while in AUX for this split. This value does not include the time agents spent on another split call or in ACW for another split. For example, a split totals AUX TIME whenever any agent logs into the split and: ● Receives an EXTN call while in AUX or AVAIL state ● Makes an EXTN call while in AUX or AVAIL state ● Presses his or her AUX button Furthermore, the split report measurement AUX TIME is time-interval based, since it is not directly related to a call. For example, if an agent is in AUX for any of the previously identified reasons from 9:55 to 10:05, 5 minutes is recorded in the 9:00 to 10:00 time interval and 5 minutes is recorded in the 10:00 to 11:00 time interval.
AVG STAFF	The average number of agents who were logged into this split (staffed) during the reporting interval. $\frac{\text{Total Staff Time}}{\text{Time Interval}}$
% IN SERV LEVL	The percentage of calls answered within the administered service level. $\frac{\text{accepted} * 100}{\text{ACDcalls} + \text{abandons} + \text{outflows} + \text{dequeued}}$ where: ● *accepted* is calls answered when queue time for that call was less than or equal to the administered service level for the split ● *dequeued* is a call that encountered the split queue, but that was *not* answered, abandoned, or outflowed. This occurs with multiple split queuing. An asterisk next to a value in this field indicates that the acceptable service level changed during the time period.
SUMMARY	For those columns that specify averages, the summary is an average for the entire reporting interval. For the ACD CALLS, ABAND CALLS, TOTAL AFTER CALL, FLOW IN, FLOW OUT, AUX TIME, and TOTAL HOLD TIME columns, the summary is the sum of individual time intervals or specified days.

Split summary report

This section includes the following topics:

● Command on page 69

Command

list bcms summary split (split number) ***[time] [start time] [stop time] [print/schedule]***

list bcms summary split (split number) ***[day] [start day] [stop day] [print/schedule]***

Description

The BCMS Split Summary report provides traffic measurement information for a specified group of BCMS splits. Depending on specifics from the command line, the information may be displayed as either a time interval or a daily summary. If neither time nor day is specified, time is the default. In this case, the report displays data accrued for the previous 24 time intervals (hour or half-hour), including data from the most recently completed time interval. To get information on the current time interval, you must use a **monitor bcms** command.

This report is similar to the split report except that this report provides one line of data for each split, which includes all data for the specified times. Data for a split does not appear on the report if there is no data for that split. If you specify more than one time period, and data exists for one or more, but not all, of the specified times, the system uses the available data to calculate and display the one-line summary; the system does not identify which times are not included in the calculations.

When analyzing this report, keep the following in mind:

- All averages are for completed calls only.
- Asterisks indicate that the maximum for the associated field has been exceeded.

Sample reports

Hourly summary

```
 list bcms summary split 5 3 time 9:00-16:00

                          BCMS SPLIT SUMMARY REPORT

Switch Name: Lab Model                          Date: 11:05 am MON MAY 15, 1995
       Time: 9:00-16:00

                AVG           AVG    AVG    TOTAL              TOTAL        % IN
            ACD   SPEED ABAND  ABAND  TALK   AFTER  FLOW FLOW  AUX/  AVG    SERV
SPLIT NAME  CALLS ANS   CALLS  TIME   TIME   CALL   IN   OUT   OTHER STAFF LEVL

 Sales         32   :25     4    :32  5:15   16:00     3    5   3:30   4.0   75
 Service        8   :07     1    :03  3:20      :00     0    0   9:30   2.2   83*
--------    ----- -----  ----  ----- ----- ------- ---- ---- ------- ----- ---
SUMMARY        40   :21     5    :26  4:52   16:00     3    5  13:00   3.1   76
```

Daily summary

```
list bcms summary split 5 3 day

                          BCMS SPLIT SUMMARY REPORT

Switch Name: Lab Model                          Date: 11:05 am MON MAY 15, 1995
        Day: 5/15/95

                AVG           AVG    AVG    TOTAL              TOTAL        % IN
            ACD   SPEED ABAND  ABAND  TALK   AFTER  FLOW FLOW  AUX/  AVG    SERV
SPLIT NAME  CALLS ANS   CALLS  TIME   TIME   CALL   IN   OUT   OTHER STAFF LEVL

 Sales         32   :25     4    :32  5:15   16:00     3    5   3:30   4.0   75
 Service        8   :07     1    :03  3:20      :00     0    0   9:30   2.2   83*
--------    ----- -----  ----  ----- ----- ------- ---- ---- ------- ----- ---
SUMMARY        40   :21     5    :26  4:52   16:00     3    5  13:00   3.1   76
```

Header definitions

Split summary report

Header	Definition
Time/Day	The time or day interval specified in the command line. Time is always expressed in 24-hour format. Start and stop times are optional. Reports always start at the earliest time interval (either hour or half-hour). If no start time is given, the oldest time interval is the default. A stop time requires an associated start time. If no stop time is given, the last completed time interval (hour or half-hour) is the default. If no start or stop time is given, the report displays data accrued for the previous 24 time intervals. If you specify day in the command and do not include a start day or stop day, the report displays data accrued for the previous 6 days and data accrued through the most recently completed interval (hour or half-hour).
SPLIT NAME	Displays the name that is administered for this split number. If no name exists, BCMS displays the split extension (for example, `EXT 65432`).
ACD CALLS	The number of ACD calls completed for this split during the current interval. This number includes calls that flowed in from other splits and Direct Agent calls.
AVG SPEED ANS	The average amount of time answered ACD calls (split and Direct Agent) spent in queue and ringing at an agent telephone before being answered during the reporting interval. Calls that flowed in do not have queue time from the previous split included in this average. This calculation is: $\frac{\text{Sum of Each Completed Call's Time In Queue + Time Ringing}}{\text{Total Number of ACD Calls Answered}}$ Keep the following in mind: ● This value does not include time listening to a forced first announcement. ● Asterisks indicate that the maximum for the associated field has been exceeded.
ABAND CALLS	The total number of ACD calls that have hung up while waiting to be answered during this time interval. This value includes those callers that hung up while in queue or while ringing. It also includes calls with a talk time that is less than the value administered for the BCMS/VuStats Abandon Call Timer. Calls that are not queued (because the queue is full, the caller receives a forced first announcement and abandons during the announcement, or no agents are staffed) are not counted as abandoned. Also, calls that abandon while on hold are not counted as abandoned.

Split summary report (continued)

Header	Definition
AVG ABAND TIME	The average time before an ACD call abandons. This value does not include any time spent in another split queue before flowing into this split. The calculation is: $\frac{\text{Total Abandon Time}}{\text{Total Number of Abandoned Calls}}$ This value does not include time listening to a forced first announcement or calls that abandon while listening to a forced first announcement.
AVG TALK TIME	The average duration of ACD calls (split and direct agent) for each split. This includes time spent talking. The calculation does not include ring time at an agent telephone or time spent on hold. Split talk time appears less than the VDN talk time in the reports. This is because AVG TALK/ HOLD time by VDN includes the time spent on hold while the split/agent AVG TALK does not. Also, VDN talk time does *not* include talk time for a call that becomes part of a conference while split/agent talk time does. This situation will show a greater talk time for the split. The calculation is: $\frac{\text{Total ACD Talk Time}}{\text{Total Number of ACD Calls Answered}}$
TOTAL AFTER CALL	The amount of time that the agents in this split spent in call-related or noncall-related ACW mode during the reporting interval. This value includes time spent on direct incoming or outgoing calls while in ACW. If an agent entered ACW in one interval, but left ACW in another interval, each interval is credited with ACW time.
FLOW IN	The total number of completed calls that this split received as a coverage point (intraflowed) from another BCMS-measured split, or that are call forwarded (interflowed) to this split and completed during the reporting interval. This total does not include calls that are interflowed from a remote switch by means of the Look Ahead Interflow feature. FLOW INs are recorded as they occur.
FLOW OUT	The total number of calls queued to this split that were: • Successfully sent to the split coverage point after queuing for the specified *don't answer* interval. (This does not include calls that went to coverage based on any other criterion.) • Forwarded-out via call forwarding. • Forwarded-out via a *route-to extension* vector step. • Answered via the Call Pickup feature. • Forwarded-out via Look Ahead Interflow. • First queued to this split and were answered by the second or third split. • Redirected back to this split or its coverage path due to Redirect On No Answer timing. FLOW OUTs are recorded when a call ends.

Split summary report (continued)

Header	Definition
FLOW OUT (continued)	In a multiple split-queuing environment, inflows and outflows become a bit more complicated. Consider the following scenarios: ● If a multiple queued call is answered in a nonprimary split (that is, a second or third split), an outflow is recorded in the statistics for the first split, and an inflow and an answer are recorded in the statistics for the answering split. For example, suppose there are three splits numbered 1 through 3. A call comes in for split 1, but all agents in this split are busy. The call goes into queue for splits 2 and 3. An agent in split 3 answers the call. In this example, an outflow is recorded in the statistics for split 1, and an inflow and an answer are recorded in the statistics for split 3. A dequeued call is counted for split 2. ● If the call is answered in the primary split, no inflows or outflows are recorded for any split. Splits 2 and 3 record the call as dequeued. ● If a call is queued to three splits (for example, splits 1, 2, and 3, with split 1 being the primary split), encounters a *route-to* command that sends the call to another VDN, that queues to different splits (for example, splits 4 and 5), an outflow is recorded in the statistics for split 1. If the call is answered in split 4, an answer is recorded in the statistics for split 4. However, no inflow is recorded to the statistics for split 4. ● If the call is answered in split 5, an outflow is recorded for the statistics for split 4, and both an inflow and an answer are recorded in the statistics for split 5. ● Similarly, if a multiple queued call routes to another split, an outflow is recorded to the statistics for the primary split, but no inflow is recorded to the statistics for the routed-to split.
TOTAL AUX/ OTHER	The total time that logged-in agents in this split were unavailable to receive calls during the reporting interval. This value includes time spent on non-ACD calls while in AUX for this split. This value does not include the time agents spent on another split call or in ACW for another split. For example, a split totals AUX TIME whenever any agent is logged into the split and: ● Receives an EXTN call while in AUX or AVAIL state ● Makes an EXTN call while in AUX or AVAIL state ● Presses his or her AUX button Furthermore, the split report measurement AUX TIME is time-interval based, since it is not directly related to a call. For example, if an agent is in AUX for any of the previously identified reasons from 9:55 to 10:05, 5 minutes is recorded in the 9:00 to 10:00 time interval and 5 minutes is recorded in the 10:00 to 11:00 time interval.
AVG STAFF	The average number of agents who were logged into this split (staffed) during the reporting interval. $\frac{\text{Total Staff Time}}{\text{Time Interval}}$

Split summary report (continued)

Header	Definition
% IN SERV LEVL	The percentage of calls answered within the administered service level. $\frac{\text{accepted} * 100}{\text{ACDcalls} + \text{abandons} + \text{outflows} + \text{dequeued}}$ where: • *accepted* is calls answered when the queue time for that call was less than or equal to the administered service level for the split • *dequeued* is a call that encountered the split queue, but that was NOT answered, abandoned, or outflowed. This occurs with multiple split queuing. An asterisk next to a value in this field indicates that the acceptable service level changed during the time period.
SUMMARY	For those columns that specify averages, the summary is an average for the entire reporting interval. For the ACD CALLS, ABAND CALLS, TOTAL AFTER CALL, FLOW IN, FLOW OUT, AUX TIME, and TOTAL HOLD TIME columns, the summary is the sum of individual time intervals or specified days.

Trunk group report

This section includes the following topics:

Command

```
list bcms trunk (group number) [time] [start time] [stop time]
  [print/schedule]
list bcms trunk (group number) [day] [start day] [stop day]
  [print/schedule]
```

Description

The BCMS trunk group report gives statistical information for all BCMS measured trunk groups. The BCMS trunk group report may be used by the ACD administrator and/or manager to monitor use of the trunk group and to determine the optimal number of trunks

for the trunk group. Depending on specifics from the command line, the information may be displayed as either a time interval or a daily summary. If neither time nor day is specified, time is the default. In this case, the report displays data accrued for the previous 24 time intervals (hour or half-hour), including data from the most recently completed time interval.

When analyzing this report, keep the following in mind:

- All averages are for completed calls only.
- A completed call may span more than one time interval. ACD calls that are in process (have not terminated) are counted in the time interval in which they terminate. For example, if an ACD call begins in the 10:00 to 11:00 time interval, but terminates in the 11:00 to 12:00 time interval, the data for this call is counted in the 11:00 to 12:00 time interval.
- Asterisks in a field indicate that the maximum for that field has been exceeded.
- A single asterisk at the end of a time or date field indicates that during the interval, trunk group administration that changed the number of trunks occurred.

Sample reports

Time interval report

```
 list bcms trunk 1 time 8:00 11:00

                              BCMS TRUNK GROUP REPORT
Switch Name: Lab Model                          Date: 12:59 pm THU APR 20, 1995
      Group: 1
 Group Name: TG 1                                        Number of Trunks: 11

            |          INCOMING             |           OUTGOING          |%ALL %TIME
TIME        |CALLS ABAND   TIME      CCS | CALLS  COMP   TIME    CCS|BUSY  MAINT

 8:00- 9:00*    23     2   2:15    31.02       1     1   1:36    .96    0      0
 9:00-10:00     35     2   1:48    35.74       4     4   1:42   4.08    0      0
10:00-11:00     24     1   1:40    22.93       0     0    :00    .00    0      0
-----------  -----  ---- ------ --------   -----  ---- ------ ------  ---    ---
SUMMARY         82     5   1:54    29.89       5     5   1:39   2.52    0      0
```

Daily report

```
 list bcms trunk 1 day 4/17

                              BCMS TRUNK GROUP REPORT
Switch Name: Lab Model                          Date: 12:59 pm THU APR 20, 1995
      Group: 1
 Group Name: TG 1                                        Number of Trunks: 11

            |          INCOMING            |           OUTGOING          |%ALL  %TIME
DAY         |CALLS ABAND   TIME      CCS   | CALLS  COMP   TIME    CCS   |BUSY  MAINT

 4/17/95*       82     5   1:54    29.89        5     5   1:39   2.52     0       0
-----------  -----  ---- ------ --------   -----  ---- ------ ------  ---     ---
 SUMMARY        82     5   1:54    29.89        5     5   1:39   2.52     0       0
```

Header definitions

Trunk group report

Header	Definition
Group	The trunk group number specified with the command line.
Group Name	The name that is administered for this trunk group. If no name is administered, this field is displayed as blank.
Number of Trunks	The number of individual trunks in the trunk group at the end of the first interval being reported.
TIME/DAY	The time or day interval specified in the command line. Time is always expressed in 24-hour format. Start and stop times are optional. Reports always start at the top of the time interval (either hour or half-hour). If no start time is given, the report displays data accrued for the previous 24 time intervals. A stop time requires an associated start time. If no stop time is given, the last completed time interval (hour or half-hour) is the default. If no start time or stop time is given, the report displays data accrued for the previous 24 time intervals. If you specify day in the command and do not include a start day or stop day, the report displays data accrued for the previous six days and data accrued through the most recently completed interval (hour or half-hour). If switch administration causes the number of trunks in a BCMS-measured trunk group to change during a day or a time interval, an asterisk displays in the **DAY/TIME** field.
INCOMING CALLS	The total number of incoming calls carried by this trunk group.

Trunk group report (continued)

Header	Definition
INCOMING ABAND	The number of incoming calls that queued to ACD splits, then abandoned without being answered by a staffed agent within this split during the reporting interval. This value also includes calls with a talk time that is less than the value administered for the BCMS/VuStats Abandon Call Timer. Calls that cannot queue (for example, queue full, or calls that receive a busy signal from the Central Office because there are no available trunks) are not included in the INCOMING ABAND number. Included are calls directly to staffed ACD agents that are unanswered.
INCOMING TIME	The average holding time for incoming calls to this trunk group during the specified reporting interval. Holding time is defined as the length of time in minutes and seconds that a facility is used during a call. The calculation for incoming time is: $\frac{\text{Total Holding Time for all Incoming Calls}}{\text{Total Number of Incoming Calls}}$
INCOMING CCS	The total holding time (usage) for incoming calls to the trunk group during the specified reporting interval. The units are expressed in hundred call seconds (CCS).
OUTGOING CALLS	The total number of outgoing calls for this trunk group during the specified reporting interval.
OUTGOING COMP	The total number of outgoing calls that were placed over this trunk group and answered during the specified reporting interval. Completion is determined by whichever occurs first: • return of network answer supervision, or • a call that lasts longer than the answer supervision time-out parameter.
OUTGOING TIME	The average holding time for outgoing calls during the specified reporting interval. The calculation is: $\frac{\text{Total Holding Time for Outgoing Calls}}{\text{Total Number of Outgoing Calls}}$
OUTGOING CCS	The total holding time (usage) for outgoing calls from this trunk group. The units are expressed in CCS.

Trunk group report (continued)

Header	Definition
% ALL BUSY	The percentage of time that all the trunks in this trunk group were busy. This value includes trunks that are maintenance busy. The calculation is: $\frac{\text{Total of all Busy Times}}{\text{Time Interval}} \text{X} (100)$ where Busy Times is expressed in minutes and is the sum of all times when all trunks were simultaneously busy.
% TIME MAINT	The percentage of time that one or more trunks have been busied-out for maintenance. The calculation is: $\frac{\text{Total Maintenance Busy Time x 100}}{\text{Time Interval x Number of Trunks in Group}}$ where: • *Total Maintenance Busy Time* is the sum of Maintenance Busy Time (in minutes) for all trunks (individually) in this trunk group during this interval • *Time Interval* is expressed in minutes (for example, 30 if using a half-hour interval, 60 if using a one-hour interval, and 1440 if using a daily summary) For reporting purposes, call data is stored during the time interval (hour or half-hour) that the trunk goes idle, not when the telephone releases. Also, changing the number of trunks in a trunk group can cause unexpected results for that interval.

Trunk group summary report

This section includes the following topics:

Command

```
list bcms summary trunk (group number) [time] [start time]
  [stop time] [print/schedule]

list bcms summary trunk (group number) [day] [start day]
  [stop day] [print/schedule]
```

Description

The BCMS trunk group summary report provides information about BCMS-measured trunk groups. You can specify the trunk groups you want included in the report. The BCMS trunk group report can be used by the ACD administrator and/or manager to monitor use of one or more trunk groups and to determine the optimal number of trunks for the trunk groups. Note that this applies only to trunk groups measured by BCMS.

This report is similar to the BCMS trunk group report except that the information for a trunk group displays on separate lines of the report, with totals of activity for all trunks in the trunk group for the specified time. You can print the report for a certain time period specified in either hours or days (up to 7 days).

The report displays only the information that exists and does not identify absent data. If data does not exist for a specified trunk group, that trunk group does not appear on the report. Also, if information does not exist for a portion of the specified time period, the report displays all existing information but does not identify where there is no data.

When analyzing this report, keep the following in mind:

- All averages are for completed calls only.
- Asterisks in a field indicate that the maximum for that field is exceeded.
- A single asterisk at the end of a time or date field indicates that during the interval, trunk group administration that changed the number of trunks occurred.

Sample reports

Hourly report

```
 list bcms trunk sum 23-25 time 8:00

                          BCMS TRUNK GROUP SUMMARY REPORT

Switch Name: Lab Model                            Date: 12:59 pm THU APR 20, 1995
       Time: 8:00-13:00

             |          INCOMING             |           OUTGOING          |%ALL %TIME
GROUP NAME   |CALLS ABAND   TIME      CCS | CALLS  COMP   TIME    CCS|BUSY  MAINT

IN-800          23     2   2:15    31.02       1     1   1:36   0.96    0      0
OUT-WATTS*      35     2   1:48    35.74       4     4   1:42   4.08    0      0
TIE-GROUP       24     1   1:40    22.93       0     0    :00   0.00    0      0
-----------  -----  ---- ------ ---------   ----- ----- ------ ------  ---    ---
SUMMARY         82     5   1:54    29.89       5     5   1:39   2.52    0      0
```

Daily report

```
 list bcms trunk sum 23 day 5/17/92

                          BCMS TRUNK GROUP SUMMARY REPORT

Switch Name: Lab Model                            Date: 12:59 pm THU APR 20, 1995
        Day: 5/17/95

             |          INCOMING            |           OUTGOING          |%ALL %TIME
GROUP NAME   |CALLS ABAND   TIME      CCS  | CALLS  COMP   TIME    CCS|BUSY  MAINT

IN-800*         82     5   1:54    29.89       5     5   1:39   2.52    0      0
-----------  -----  ---- ------ --------   ----- ----- ------ ------  ---    ---
SUMMARY         82     5   1:54    29.89       5     5   1:39   2.52    0      0
```

Header definitions

Trunk group summary report

Header	Definition
Time/Day	The time or day interval specified in the command line. Time is always expressed in 24-hour format. Start and stop times are optional. Reports always start at the top of the time interval (either hour or half-hour). If no start time is given, the report displays data accrued for the previous 24 time intervals. A stop time requires an associated start time. If no stop time is given, the last completed time interval (hour or half-hour) is the default. If no start time or stop time is given, the report displays data accrued for the previous 24 time intervals. If you specify day in the command and do not include a start day or stop day, the report displays data accrued for the previous six days and data accrued through the most recently completed interval (hour or half-hour). If switch administration causes the number of trunks in a BCMS-measured trunk group to change during a day or a time interval, an asterisk displays in the DAY/TIME field.
GROUP NAME	The name that is administered for this trunk group. If no name is administered, this field is displayed as blank.
INCOMING CALLS	The total number of incoming calls carried by this trunk group.
INCOMING ABAND	The number of incoming calls that queued to ACD splits, then abandoned without being answered by a staffed agent within this split during the reporting interval. Calls that cannot queue (for example, queue full, or calls that receive a busy signal from the Central Office because there are no available trunks) are not included in the INCOMING ABAND number. Included are calls directly to staffed ACD agents that are unanswered.

Trunk group summary report (continued)

Header	Definition
INCOMING TIME	The average holding time for incoming calls to this trunk group during the specified reporting interval. Holding time is defined as the length of time in minutes and seconds that a facility is used during a call. The calculation for incoming time is: $\frac{\text{Total Holding Time for all Incoming Calls}}{\text{Total Number of Incoming Calls}}$
INCOMING CCS	The total holding time (usage) for incoming calls to the trunk group during the specified reporting interval. The units are expressed in hundred call seconds (CCS).
OUTGOING CALLS	The total number of outgoing calls for this trunk group during the specified reporting interval.
OUTGOING COMP	The total number of outgoing calls that were placed over this trunk group and answered during the specified reporting interval. Completion is determined by whichever occurs first: ● return of network answer supervision, or ● a call that lasts longer than the answer supervision time-out parameter.
OUTGOING TIME	The average holding time for outgoing calls during the specified reporting interval. The calculation is: $\frac{\text{Total Holding Time for Outgoing Calls}}{\text{Total Number of Outgoing Calls}}$
OUTGOING CCS	The total holding time (usage) for outgoing calls from this trunk group. The units are expressed in CCS.

Trunk group summary report (continued)

Header	Definition
% ALL BUSY	The percentage of time that all the trunks in this trunk group were busy. This value includes trunks that are maintenance busy. The calculation is: $\frac{\text{Total of all Busy Times}}{\text{Time Interval}} X (100)$ where Busy Times is expressed in minutes and is the sum of all times when all trunks were simultaneously busy.
% TIME MAINT	The percentage of time that one or more trunks have been busied-out for maintenance purposes. The calculation is: $\frac{\text{Total Maintenance Busy Time x 100}}{\text{Time Interval x Number of Trunks in Group}}$ where: ● *Total Maintenance Busy Time* is the sum of Maintenance Busy Time (in minutes) for all trunks (individually) in this trunk group during this interval ● *Time Interval* is expressed in minutes (for example, 30 if using a half-hour interval, 60 if using a one-hour interval, and 1440 if using a daily summary) For reporting purposes, call data is stored during the time interval (hour or half-hour) that the trunk goes idle, not when the telephone releases. Also, changing the number of trunks in a trunk group can cause unexpected results for that interval.

VDN report

This section includes the following topics:

Command

list bcms vdn *extension [time] [start time] [stop time] [print/ schedule]*

list bcms vdn *extension [day] [start day] [stop day] [print/ schedule]*

Description

The BCMS VDN report provides statistical information for the specified VDN. Depending on specifics from the command line, the information may be displayed as either a time interval or a daily summary. If neither time nor day is specified, time is the default. In this case, the report displays data accrued for the previous 24 time intervals (hour or half-hour), including data from the most recently completed interval.

When analyzing this report, keep the following in mind:

- All averages are for completed calls only.
- A completed call may span more than one time period. ACD calls that are in process (have not terminated) are counted in the time period in which they terminate. For example, if an ACD call begins in the 10:00 to 11:00 time period, but terminates in the 11:00 to 12:00 time period, the data for this call is counted in the 11:00 to 12:00 time period.
- Asterisks indicate that the maximum for the associated field has been exceeded.

Sample reports

Hourly report

```
 list bcms vdn 12345 time 8:00 12:00

                        BCMS VECTOR DIRECTORY NUMBER REPORT

Switch Name: Lab Model                          Date: 11:05 am MON MAY 15, 1995
        VDN: 12345
   VDN Name: Ginsu Knives                        Acceptable Service Level:  17

                              AVG          AVG    AVG               CALLS  % IN
              CALLS   ACD     SPEED ABAND  ABAND  TALK/ CONN   FLOW BUSY/  SERV
TIME          OFFERED CALLS   ANSW  CALLS  TIME   HOLD  CALLS  OUT  DISC   LEVL

08:00-09:00        79    50    :39     5    :45   2:30     0     0    24    85*
-----------     ----- ----- -----  -----  -----  ----- -----  ----  ----   ---
SUMMARY            79    50    :39     5    :45   2:30     0     0    24    85
```

Daily report

```
list bcms vdn 12345 day 5/14

                        BCMS VECTOR DIRECTORY NUMBER REPORT

Switch Name: Lab Model                              Date: 11:05 am MON MAY 15, 1995
        VDN: 12345
   VDN Name: Ginsu Knives                            Acceptable Service Level:  17

                              AVG          AVG    AVG                 CALLS  % IN
              CALLS   ACD     SPEED ABAND  ABAND  TALK/ CONN    FLOW BUSY/   SERV
DAY           OFFERED CALLS   ANSW  CALLS  TIME   HOLD  CALLS   OUT  DISC    LEVL

5/14/95            79    50    :39      5    :45   2:30     0     0    24    85*
-----------     ----- ----- -----  -----   -----  ----- -----  ----  ----   ---
SUMMARY            79    50    :39      5    :45   2:30     0     0    24    85
```

Header definition

VDN report

Header	Definition
VDN	The VDN specified with the command line.
VDN Name	The name that is administered for this VDN. If no name exists, the VDN extension (for example, `EXT 64532`) is displayed.
Acceptable Service Level	The desired time to answer calls to the VDN. Timing for a call begins when the VDN is encountered.
TIME/DAY	The time or day interval specified in the command line. Time is always expressed in 24-hour format. Start and stop times are optional. Reports always start at the top of the time interval (either hour or half-hour). If no start time is given, the report displays data accrued for the previous 24 time intervals. A stop time requires an associated start time. If no stop time is given, the last completed time interval (hour or half-hour) is the default. If no start time or stop time is given, the report displays data accrued for the previous 24 time intervals. If you specify day in the command and do not include a start day or stop day, the report displays data accrued for the previous 6 days and data accrued through the most recently completed interval (hour or half-hour).
CALLS OFFERED	The total number of completed calls that accessed the VDN during the current interval. This calculation is: ACD CALLS + FLOW OUT + CALLS BUSY/DISC + ABAND CALLS

VDN report (continued)

Header	Definition
ACD CALLS	The total number of calls to the VDN that ended in the specified interval and were answered by an agent in a BCMS-measured hunt group. ACD calls include calls that reached the split via the queue-to-main, check backup, route-to, messaging split, or adjunct routing commands.
AVG SPEED ANSW	The average speed of answer for answered ACD and CONNect calls that have ended for this VDN during the current period. This includes time in vector processing, time in a split queue, and time ringing. This calculation is: $\frac{\text{Total Answer Time}}{\text{Total ACD Calls + Total CONNect CALLS}}$ A completed call can span more than one time period. ACD calls that are in progress (have not terminated) are counted in the time period in which they terminate. For example, if an ACD call begins in the 10:00 to 11:00 time period, but terminates in the 11:00 to 12:00 time period, the data for this call is counted in the 11:00 to 12:00 time period.
ABAND CALLS	The total number of calls that have abandoned from the VDN before being answered or outflowed to another position during the current interval. This value includes calls that abandoned while in vector processing or while ringing an agent. It also includes calls with a talk time that is less than the value administered for the BCMS/VuStats Abandon Call Timer.
AVG ABAND TIME	The average time calls spent waiting in this VDN before being abandoned by the caller during the current interval. The calculation is: $\frac{\text{Total VDN Abandon Time}}{\text{Total Number of Abandoned VDN Calls}}$
AVG TALK/ HOLD	The average duration of calls (from answer to disconnect) for this VDN during the current interval. This includes time spent talking and on hold. The calculation does not include ring time at an agent telephone. Split talk time appears less than the VDN talk time in the reports. This is because AVG TALK/HOLD time by VDN includes the time spent on hold while the split/agent AVG TALK does not. Also, VDN talk time does *not* include talk time for a call that becomes part of a conference while split/agent talk time does. This situation will show a greater talk time for the split. The calculation is: $\frac{\text{Total VDN Talk/Hold Time}}{\text{NUM ANS}}$
CONN CALLS	The number of completed calls that were routed to a telephone, attendant, announcement, messaging split, or call pickup and were answered there.

VDN report (continued)

Header	Definition
FLOW OUT	The total number of completed calls that were routed to another VDN or to a trunk, including successful lookahead attempts. FLOW OUT does not include calls that encounter a **goto vector** command. Once a call outflows, the system does not take further measurements on the call for this VDN. As a result, if an outflowed call later abandons, it is not recorded in ABAND CALLS for this VDN.
CALLS BUSY/DISC	The total number of calls that were forced busy or forced disconnect during the current interval. This value includes: • Calls that encountered a busy or disconnect vector step • Calls disconnected by a stop vector step • Calls forwarded to a split with a full queue • Calls forwarded to a split with no available agents and no queue This value does not include abandoned calls.
% IN SERV LEVL	The percentage of calls that were answered with the administered service level for this VDN. Calculate as the following: $\frac{\text{accepted} * 100}{\text{calls offered}}$ where: • *accepted* is the number of answered calls when the answer time for that call was less than or equal to the administered service level for the VDN. • *calls offered* is the total number of completed calls that accessed the VDN and completed during the current interval. This field is blank if no calls have been recorded for this time interval. This field is also blank if no Acceptable Service Level is administered on the VDN screen. An asterisk next to a value in this field indicates that the acceptable service level changed during the time period.
SUMMARY	For those columns that specify averages, the summary is an average for the entire reporting interval. For the TOTAL ATTEMPTS, ACD CALLS, ABAND CALLS, FLOW OUT, and OTHER CALLS columns, the summary is the sum of individual time intervals or specified days.

VDN summary report

This section includes the following topics:

Command

list bcms summary vdn *extension [time] [start time] [stop time] [print/schedule]*

list bcms summary vdn *extension [day] [start day] [stop day] [print/schedule*]

Description

This report is similar to the VDN report except that it provides one line of data for each VDN included in the report, and the one line includes all data for the specified times. If no data exists for a VDN, the VDN does not appear on the report.

Sample reports

Hourly summary report

```
 list bcms summary vdn 12345, 13443-13448 time 8:00-12:00

                    BCMS VECTOR DIRECTORY NUMBER SUMMARY REPORT

Switch Name: Lab Model                          Date: 11:05 am MON MAY 15, 1995
       Time: 8:00-12:00
                              AVG           AVG    AVG                CALLS  % IN
              CALLS    ACD    SPEED ABAND   ABAND  TALK/ CONN    FLOW BUSY/  SERV
VDN NAME      OFFERED CALLS   ANSW  CALLS   TIME   HOLD  CALLS   OUT  DISC   LEVL

EXT 13443           0     0    :00     0    :00    :00      0     0     0
EXT 13444           0     0    :00     0    :00    :00      0     0     0
EXT 13445           0     0    :00     0    :00    :00      0     0     0
EXT 13446           0     0    :00     0    :00    :00      0     0     0
EXT 13447           0     0    :00     0    :00    :00      0     0     0
EXT 13448           0     0    :00     0    :00    :00      0     0     0
Ginsu Knive        79    50    :39     5    :45   2:30      0     0    24     85*
-----------     ----- ----- -----   ----  -----  ----- -----  ----  ----    ---
SUMMARY            79    50    :39     5    :45   2:30      0     0    24     85
```

Daily summary report

```
 list bcms summary vdn 12345 day 5/14

                   BCMS VECTOR DIRECTORY NUMBER SUMMARY REPORT

Switch Name: Lab Model                                Date: 11:05 am MON MAY 15, 1995
        Day: 5/14/95
                             AVG          AVG    AVG                 CALLS   % IN
              CALLS   ACD    SPEED ABAND  ABAND  TALK/ CONN    FLOW BUSY/   SERV
VDN NAME      OFFERED CALLS  ANSW  CALLS  TIME   HOLD  CALLS   OUT  DISC    LEVL

Ginsu Knives       79    50    :39      5    :45   2:30     0     0    24     85*
 -----------   -----   ----- -----  ----  -----  -----  -----  ----  ----    ---
SUMMARY            79    50    :39      5    :45   2:30     0     0    24     85
```

Header definitions

VDN summary report

Header	Definition
Time/Day	The time or day interval specified in the command line. Time is always expressed in 24-hour format. Start and stop times are optional. Reports always start at the top of the time interval (either hour or half-hour). If no start time is given, the report displays data accrued for the previous 24 time intervals. A stop time requires an associated start time. If no stop time is given, the last completed time interval (hour or half-hour) is the default. If no start time or stop time is given, the report displays data accrued for the previous 24 time intervals. If you specify day in the command and do not include a start day or stop day, the report displays data accrued for the previous 6 days and data accrued through the most recently completed interval (hour or half-hour).
VDN NAME	The name that is administered for this VDN. If no name exists, the VDN extension (for example, `EXT 64532`) is displayed.
CALLS OFFERED	The total number of completed calls that accessed the VDN during the current interval. This calculation is: ACD CALLS + FLOW OUT + OTHER CALLS + ABAND CALLS
ACD CALLS	The total number of calls to the VDN that ended in the specified interval and were answered by an agent as a result of a *queue-to-main or check-backup split* step.

VDN summary report (continued)

Header	Definition
AVG SPEED ANSW	The average speed of answer for answered ACD and CONNect calls that have ended for this VDN during the current period. This includes time in vector processing, time in a split queue, and time ringing. This calculation is: $\frac{\text{Total Answer Time}}{\text{Total ACD Calls + Total CONNect CALLS}}$ A completed call can span more than one time period. ACD calls that are in process (have not terminated) are counted in the time period in which they terminate. For example, if an ACD call begins in the 10:00 to 11:00 time period, but terminates in the 11:00 to 12:00 time period, the data for this call is counted in the 11:00 to 12:00 time period.
ABAND CALLS	The total number of calls that have abandoned from the VDN before being answered or outflowed to another position during the current interval. This value includes calls that abandoned while in vector processing or while ringing an agent. Calls that abandoned immediately after the agent answered are recorded as ACD CALLS.
AVG ABAND TIME	The average time calls spent waiting in this VDN before being abandoned by the caller during the current interval. The calculation is: $\frac{\text{Total VDN Abandon Time}}{\text{Total Number of Abandoned VDN Calls}}$
AVG TALK/ HOLD	The average duration of calls (from answer to disconnect) for this VDN during the current interval. This includes time spent talking and on hold. The calculation does not include ring time at an agent telephone. Split talk time appears less than the VDN talk time in the reports. This is because AVG TALK/HOLD time by VDN includes the time spent on hold while the split/agent AVG TALK does not. Also, VDN talk time does *not* include talk time for a call that becomes part of a conference while split/agent talk time does. This situation will show a greater talk time for the split. The calculation is: $\frac{\text{Total VDN Talk/Hold Time}}{\text{NUM ANS}}$
CONN CALLS	The number of completed calls that were routed to a telephone, attendant, announcement, messaging split, or call pickup and were answered there.
FLOW OUT	The total number of completed calls that were routed to another VDN or to a trunk. FLOW OUT does not include calls that encounter a *goto vector* command or calls that forward to another extension (which are tracked as CONN CALLS). Once a call outflows, the system does not take further measurements on the call for this VDN. As a result, if an outflowed call later abandons, it is not recorded in ABAND CALLS for this VDN.

VDN summary report (continued)

Header	Definition
CALLS BUSY/DISC	The total number of calls that were forced busy or forced disconnect during the current interval. This value includes: ● calls that encountered a busy or disconnect vector step ● calls disconnected by a stop vector step ● calls forwarded to a split with a full queue ● calls forwarded to a split with no available agents and no queue. This value does not include abandoned calls.
% IN SERV LEVL	The percentage of calls that were answered with the administered service level for this VDN. Calculate as the following: $\frac{\text{accepted} * 100}{\text{calls offered}}$ where: ● *accepted* is the number of answered calls whose answer time was less than or equal to the administered service level for the VDN. ● *calls offered* is the total number of completed calls that accessed the VDN and completed during the current interval. An asterisk next to a value in this field indicates that the acceptable service level changed during the time period.
SUMMARY	For those columns that specify averages, the summary is also an average for the entire reporting interval. For the TOTAL ATTEMPTS, ACD CALLS, ABAND CALLS, FLOW OUT, and OTHER CALLS columns, the summary is the sum of individual time intervals or specified days.

System printer and Report Scheduler

The Report Scheduler is enabled on the System-Parameters Features screen. Only an authorized representative can access and make changes to the System-Parameters Customer-Options screen. The parameters of the system printer, which are used by the Report Scheduler feature, are administered on the Feature-Related System Parameters screen. If the parameters for the system printer are not administered, scheduled reports cannot be printed. The system administrator may access this screen by entering the **`change system-parameters features`** command. This command and the requirements for using the Feature-Related System Parameters screen to set up the Report Scheduler are covered in this section.

This section includes the following topics:

System printer

The system printer, rather than the printer that is attached directly to the management terminal, is used to print scheduled reports. Scheduled reports cannot be sent to the management terminal or to its printer.

Note:

The system printer should not be confused with and does not replace the printers dedicated to journal, Call Detail Records (CDR), or Property Management System (PMS). The Report Scheduler is intended to print all system reports and the output of virtually all **`list`**, **`display`**, and **`test`** commands.

This section includes the following topics:

System printer administration

Use the Feature-Related System Parameters screen to administer the hardware parameters of the system printer. The system administrator may access this screen by entering the **change system-parameters features** command.

The following screen shows the system printer parameters. System printer hardware administration on page 92 describes the printer-related data fields for this screen.

```
change system-parameters features                          Page   4 of  12   SPE A
                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM PRINTER PARAMETERS
               System Printer Endpoint: 34007               Lines Per Page: 66
                   EIA Device Bit Rate: 9600

SYSTEM-WIDE PARAMETERS
                            Switch Name: Aramis
         Emergency Numbers - Internal:           External: 911
      No-License Incoming Call Number:

MALICIOUS CALL TRACE PARAMETERS
                Apply MCT Warning Tone? y   MCT Voice Recorder Trunk Group:
      Delay Sending RELease (seconds)? 0
SEND ALL CALLS OPTIONS
             Send All Calls Applies to: extension
       Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n
                                          UCID Network Node ID:
```

System printer hardware administration

Field	Description
System Printer Endpoint	Enter one of the following: • SYS_PRNT if the system printer is connected to the switch using a terminal server. • The data module extension number associated with the system printer. • **eia** if the DCE jack is used to interface the printer. The eia option is not available for G3r systems.

System printer hardware administration (continued)

Field	Description
EIA Device Bit Rate	Enter **1200**, **2400**, **4800**, or **9600** to match the printer speed setting. Default is 9600.
Lines Per Page	Enter the number of lines per page required for the report. Valid entries are 24 through 132. Default is 60.

System printer data link operation and maintenance

Operation and maintenance of the system printer data link is significantly different from that of the CDR and journal printer data links. For example, the CDR and journal printer data links are maintained in a constant link up state, while the system printer data link is only brought up once every 15 minutes, provided there are reports to be printed, or when an immediate report is scheduled.

The system printer data link has three states that identify its operational condition. The states are:

- Link up
- Link down
- Maintenance busyout

When the communication path (including software processes, hardware cabling, and printer) functions properly and data is exchanged successfully, the data link is defined as being in the link up state. The link down state refers to all times except:

- When reports are being printed
- When maintenance personnel have disabled the link

The maintenance busyout state is the result of executing the **busyout sp-link** command from the administration terminal. While the link is in the maintenance busyout state, the switch software processes are disabled and the link retry operation is disabled.

Monitor the operating status of the system printer and, as necessary, refill the paper bin, relieve any paper jams, verify that the printer is receiving power, and so forth.

Note:

Only personnel with maintenance permissions can execute the **busyout sp-link** command. This is normally only performed via the maintenance login. Therefore, as necessary, all nonmaintenance personnel should simply flip the printer power switch to the OFF position to refill the paper bin and remove jammed paper. Subsequently, the system printer can be restored on-line by turning the power switch ON.

If the system printer link generates either a Warning alarm or a Minor alarm, the problem should be referred to the proper maintenance personnel.

Report Scheduler

The Report Scheduler may be used with many switch features. Specifically, virtually all **`list`**, **`display`**, or **`test`** commands may be executed with the schedule qualifier.

Whenever a command containing the schedule option is executed, it results in generating a Job ID. A maximum of 50 different Job IDs (50 different reports) can be scheduled for printing. The Report Scheduler feature is used to specify the actual days and time of day that each report will be printed.

This section includes the following topics:

Print intervals

For purposes of printing reports, three print intervals are available:

- **immediate** - If you select this option, the report will be printed immediately.
- **scheduled** - If you select this option, the date, time, and days parameters for the report are set administratively. To change them, readministration is required.
- **deferred** - If you select this option, the report will be generated once for the date, time, and day specified.

Adding a report to Report Scheduler

To add a report to Report Scheduler, enter a **`list`**, **`test`**, **`display`**, or other command followed by the **`schedule`** option. Whenever a report is initially scheduled, the print interval of **`immediate`** is automatically assigned as the default. Therefore, if immediate

printing is not wanted, the print interval must be changed to **deferred** or **scheduled** and a day and print time must be added to Report Scheduler. Report Scheduler field descriptions describes the data fields for this screen.

```
list measurements attendant group                              Page   1 of   1
                                REPORT SCHEDULER

    Job Id: 1                       Job Status: none

    Command: list measurements attendant group

    Print Interval: scheduled

    Print Time:    :

       Sun: n Mon: n Tue: n Wed: n Thu: n Fri: n Sat: n
```

Report Scheduler field descriptions

Field	Description
Job Id	This is a display-only field. Whenever a command is executed with the qualifier **schedule**, the system responds by generating a unique Job ID number. The Job ID assigned by the system is the lowest number within the range of 1 through 50 that is not in use. Jobs are printed in order based on the Job ID unless the print job has been rescheduled. The rescheduled job is moved to the bottom of the print queue.
Job Status	This is a display-only field. It identifies the print status of the report. Until the job is on the Report Scheduler, this field is blank (empty).
Command	This is a display-only field. It displays the command being scheduled.
Print Interval	This field has three options: **immediate**, **deferred**, and **scheduled**. The **immediate** option is initially assigned as a default. Use this option to print reports immediately. Use the **deferred** option to schedule a report for a single printing. Thereafter, the Job ID is automatically removed from the Report Scheduler. If you select the **deferred** option, you must enter the Print Time and Days of Week. Use the **scheduled** option to schedule a regular printing of a report. If you select the **scheduled** option, you must enter the Print Time and Days of Week.

Report Scheduler field descriptions (continued)

Field	Description
Print Time	This field is displayed only when the Print Interval is set to **deferred** or **scheduled**. Within a given hour, reports may be scheduled at 15-minute intervals (that is, xx:00, xx:15, xx:30, or xx:45). The system printer requires significant switch processor resources. It is important that the reports be scheduled for off-peak hours. The reports should not all be scheduled for the same hour and time interval, but should be staggered across multiple off-peak time intervals. If, because of printing volume or other problems, a report is not printed within four hours of its scheduled time interval, it will not be printed until its next scheduled time interval. Immediate and deferred jobs would be removed from Report Scheduler under this scenario and would require that you reschedule them.
Days of Week	For each day of the week that the report is to be printed, enter **y** (yes). Alternatively, enter **n** (no) for those days when the report should not be printed. Selecting an **n** for all seven days of the week will effectively disable a report from being printed. Days are defaulted to **n**.

Printing reports on the system printer

To print a report on the system printer:

1. Execute a command with the **schedule** qualifier.

   The first screen of Report Scheduler is displayed. It indicates that the print interval is immediate.

2. Either:

   - Press **ENTER** to print the report (immediately) on the system printer, or
   - Enter **scheduled** or **deferred**. Press **ENTER**.

   Note:

   If you are using a PC running the 513 terminal emulation package, your keyboard will not have an **ENTER** key. You must map a function key to serve in this capacity. Pressing **RETURN** will not achieve the correct results.

   When the print interval is changed to **scheduled** or **deferred**, the Print Time and the days of the week fields are displayed.

3. Enter the print time and press **ENTER**. The cursor is now on the days of the week field. For those days that you want to print the report, enter a **y**.

4. Press **ENTER** to execute the command. The system responds with a prompt for the next command.

Listing scheduled reports

To display a list of all reports that are on Report Scheduler, enter the **list report-scheduler** command. Reports will be printed in the order listed. The following screen shows an example of the report scheduler. Report Scheduler field descriptions on page 97 describes the headers for this screen.

```
list report-scheduler

                                REPORT SCHEDULER

  Job Id      Days(smtwtfs)     Time         User        Status        Type
        Command

  4             nynnnnn         18:45        bcms        printing     immediate
       list measurements attendant-group time 14:15
  2             nynynyn         19:00        bcms        waiting      scheduled
       list measurements call-rate time 07:00
  7             nnnnnyn         19:15        bcms        waiting      deferred
       list bcms agent 5000 time  08:00     12:00
  23            nnynnnn         19:15        bcms        waiting      scheduled
       list bcms agent 4000  day  09/11     09/15
```

Note:

In instances such as those for Job ID 4, if an immediate report is scheduled, the Days field is completed with one `y` for the current day and `n` for the others.

All fields are display-only. If, after reviewing this report, you determine that change needs to be made, use the **change report-scheduler** command to make the changes. See Changing scheduled reports on page 98.

Report Scheduler field descriptions

Field	Description
Job Id	Whenever a command is executed with the schedule qualifier, the system responds by generating a unique Job ID number. The Job ID assigned by the system is the lowest number, within the range of 1 through 50, that is not in use.
Days (smtwtfs)	On a per-day basis, `n` indicates that the report will not be printed that day; `y` indicates that the report will be printed that day. Selecting **n** for all seven days of the week will effectively disable the printing of a report.
Time	The time interval that the report is scheduled to be printed.

Report Scheduler field descriptions (continued)

Field	Description
User	The login ID of the user who scheduled the identified report.
Status	This is a display-only field. It identifies the print status of the report. The four possible states are: • Waiting - The report is not scheduled for any activity during the current 15-minute time interval. • Print-Next - The report is scheduled to be printed within the current 15-minute time interval. • Printing - The report is currently being printed. • Printed - The report has been successfully printed during the current 15-minute interval.
Type	Indicates the type of print interval that is scheduled for the report (immediate, scheduled, or deferred).
Command	This field displays the complete command line (excluding the schedule option) that the user entered to produce the identified report.

Changing scheduled reports

Use the **change report-scheduler** command to change the schedule of a report. To display this screen, enter the **change report-scheduler *xx*** command, where ***xx*** corresponds to the Job ID. The following screen shows an example of the Change Report-Scheduler screen. Change Report-Scheduler field descriptions describes the data fields for this screen.

```
change report-scheduler 1                                    Page   1 of   1
                              REPORT SCHEDULER

    Job Id: 1                      Job Status: waiting

    Command: list measurements attendant group

    Print Interval: scheduled

    Print Time: 12:30

       Sun: y Mon: n Tue: y Wed: n Thu: y Fri: n Sat: n
```

Note:

When an existing print job is rescheduled, that print job is moved to the bottom of the print queue, regardless of the Job ID number.

Change Report-Scheduler field descriptions

Field	Description
Job Id	This is a display-only field. It is the unique identifier for the report. The Job ID assigned by the system is the lowest number, within the range of 1 through 50, that is not in use.
Job Status	This is a display-only field. It identifies the print status of the report. The four possible states are: • Waiting - The report is not scheduled for any activity during the current 15-minute time interval. • Print-Next - The report is scheduled to be printed within the current 15-minute time interval. • Printing - The report is currently being printed. • Printed - The report has been successfully printed during the current 15-minute interval.
Command	This is a display-only field. It is the command that is to be executed.
Print Interval	The three possible options are `immediate`, `scheduled`, and `deferred`. If the print time of a report is changed, so that its scheduled time now falls inside the current 15-minute time interval (that is, the `Job Status` field changes from `waiting` to `print-next`), the report will not be printed in the current interval.
Print Time	This field is displayed only when the Print Interval is set to **`deferred`** or **`scheduled`**. Within a given hour, reports may be scheduled at 15-minute intervals (that is, xx:00, xx:15, xx:30, or xx:45). The system printer requires significant switch processor resources. It is important that the reports be scheduled for off-peak hours. The reports should not all be scheduled for the same hour and time interval, but should be staggered across multiple off-peak time intervals. If, because of printing volume or other problems, a report is not printed within four hours of its scheduled time interval, it will not be printed until its next scheduled time interval. Immediate and deferred jobs would be removed from Report Scheduler under this scenario and would require that you reschedule them.
Days of Week	For each day of the week that the report is to be printed, enter **`y`** (yes). Alternatively, enter **`n`** (no) for those days when the report should not be printed. Selecting an **`n`** for all seven days of the week will effectively disable a report from being printed. Days are defaulted to **`n`**.

Removing scheduled reports

Use the **remove report-scheduler** command to remove a report from Report Scheduler. To display this screen, enter the **remove report-scheduler *xx*** command, where ***xx*** corresponds to the Job ID. The following screen shows an example.

```
remove report-scheduler 1                                    Page   1 of   1
                              REPORT SCHEDULER

    Job Id: 1                      Job Status: waiting

    Command: list measurements attendant group

    Print Interval: scheduled

    Print Time: 12:30

       Sun: y Mon: n Tue: y Wed: n Thu: y Fri: n Sat: n
```

All fields are display-only. Once you have verified that the identified report is the one to be removed, press **ENTER**. The system displays the command prompt.

Using reports for ACD planning

This section includes the following topics:

Planning/engineering objectives

Before presenting examples of how you can use the BCMS reports to optimize the operations of an ACD application, this chapter reviews certain relevant points.

First, recall that the ACD hunt groups and trunk groups may be administered for:

- Internal measurements (BCMS)
- External measurements (CMS)
- Both internal and external measurements (BCMS and CMS)
- No measurements

Second, the ACD feature can support a maximum number of agents, splits, and trunk groups. Since the BCMS feature may measure fewer agents, splits, and trunk groups, those agents, splits, and trunk groups that are not measured with the BCMS feature either are measured with external CMS or are not measured at all.

If you are planning to implement BCMS and you do not have accurate traffic information, you can used defaults, which are based on an estimated volume of incoming traffic. The primary purpose of the BCMS reports is to monitor the ACD application and provide information that details how the splits, agents, and trunk groups are being used. By analyzing these reports, you can determine the optimum number of agents and trunks needed to support a given ACD application.

Your overall design of an ACD should be based on to what extent your business values a lost or blocked call. For example, if the ACD split handles sales and each blocked or dropped call represents potential lost revenue, it will probably be desirable to provide more trunks than agents to minimize the lost calls. As a contrast, if the ACD split handles calls from a captive customer base and each agent performs a significant amount of “After Call

Work” that results in an expense to your organization, it will probably be desirable to provide fewer trunks than agents.

Finally, remember that the report scheduler allows only 50 reports each night. If you do not need to view historical data on an hour-by-hour basis, or if you prefer to see data sorted by entity (such as agents, splits, or VDNs) rather than sorted by time, you should use the summary reports. These reports can include up to 30 entities at one time, and thus can allow you to make better use of the 50 available scheduler slots.

This section includes the following topics:

System status report

You should use the system status report (**`monitor bcms system`**) as the first step toward determining how the ACD is functioning. This report displays data that details how each split queue is currently functioning. Specifically, the report lists:

- The number of calls waiting in the queue (this includes calls ringing)
- The length of time that the oldest call has been queued
- The average length of time before calls are answered
- The number of agents that are available to receive ACD calls
- The number of calls that have abandoned
- The average length of time before a call abandons the queue
- The number of ACD calls that have been answered
- The average length of time the agents spend talking
- The average length of time the agents spend in ACW mode.
- The percentage of calls answered within service level.

If any of the numbers are not within their desired range, the individual splits should be observed more closely using the split status report. Some of the more obvious indications of a problem are:

- An excessive number of calls waiting in the queue, or a very old “oldest call.”

- An excessive number of calls that have abandoned the queue
- A large number of agents that are available to receive ACD calls
- If only a small number of ACD calls have been answered, but the split is staffed with a large number of agents
- An excessive amount of time is spent in ACW mode, AUX work, or station-to-station calls.

Split status report

You can use the split status report (**monitor bcms split**) to determine:

- Whether there are enough staffed agents for the current level of incoming calls.
  - If after monitoring the Avail field for several minutes and no agents are indicated as being available to receive calls, you will probably want to staff some of the unstaffed positions, especially if this loss of business represents a loss in revenue.
  - If all agent positions are staffed, it may be appropriate to add more agents to the split.
  - If an excessive amount of time is being spent answering ACD calls for another split, it may be appropriate to determine the reason and possibly to assign more agents to the other split.
- Whether any particular agent or agents are spending too much time on station-to-station, not ACD calls. If an agent is suspected of spending too much time on these types of calls, the BCMS agent report should be used to investigate further.
- Whether, based on a comparison of agents within this split, any particular agent is taking more time to handle calls than is appropriate. More specifically, this would be referred to as excessive ACD talk time. The BCMS agent report should be used to investigate further.

VDN status report

You can use the VDN status report (**monitor bcms vdn**) to determine how one or more internally-measured VDNs and vectors are functioning. This report can help you to determine whether you need to change a VDN instead of move agents between splits when ACD traffic changes. Specifically, some information this report indicates is:

- How many calls have encountered a VDN but have not been answered
- The time the oldest call has been waiting in the VDN
- The average length of time for a call to be completed in the VDN during the current period

- The average length of time a call waited before abandoning during the current period
- The average length of talk time for calls to the VDN completed during the current period
- The percent of calls being answered in the VDN within the acceptable service level during the current period

Trunk group report

You can use the trunk group report (**`list bcms trunk`**) to determine:

- The number of incoming and outgoing calls.
- The average amount of time for incoming calls.
- The average amount of time for outgoing calls.
- The number of incoming calls that abandoned. This may be an indication that there are not enough staffed agent positions rather than not enough trunks.
- The number of outgoing calls that were placed over this trunk group and answered during the specified reporting period.
- The CCS traffic load for incoming calls.
- The CCS traffic load for outgoing calls.
- The percent of time that one or more trunks were busied-out for maintenance.
- The percent of time that all trunks within this group were busy. This field should serve as an indication of whether additional trunks are needed.

If the designated trunk group serves a split that provides a revenue-producing function, it will generally be desirable for the trunk group to contain enough trunks to accommodate the peak level of traffic. After identifying when peak traffic occurs, schedule a trunk report for that time of day. The information from this report and other reports may be used with the Trunk Engineering Guidelines on page 135 to determine the correct number of trunks for the trunk group.

Agent report

You can use the agent report (**`list bcms agent`**) to determine exactly how the specified agent uses his or her time. Subsequently, and depending on the specifics of the data, you may find that certain changes are in order. For example, if the `TOTAL AVAIL TIME` field shows a high number, you may find it desirable to:

- Change the work schedule for the agent.

- Place the agent into multiple splits via an administration change. You can identify those splits that may be in need of additional agents by analyzing the individual BCMS Split Reports.

If the AVG TALK TIME field shows high numbers, this may indicate that the agent needs additional instruction and training.

Split report

You can use the split report (**list bcms split**) to identify the time of day and days of the week when the split is most and least busy. Actions you take based on report data depend on the business function provided by the split. (For example, consider whether the split provides a revenue-producing function, such as sales, or a revenue-draining function, such as warranty service.) If the split is revenue-producing, it may be desirable to identify the time and day when peak traffic occurs and provide enough trunks and agents to keep the number of blocked calls low and the service level high. On the converse, this report will also assist you to determine low-traffic periods when you can reduce the number of agents in a split.

VDN report

You can use the VDN report (**list bcms vdn**) to determine if your calls are being handled in a timely manner. For example, the AVG ABAND TIME indicates how long callers will wait for an agent before hanging up. If the AVG ABAND TIME is less than the AVG SPEED ANS, you may assume that callers are not being serviced fast enough by an agent. As a result, this VDN may need more staffing.

If the percentage in service level (% IN SERV LEVL) is not high enough, you may need more agents, or it may be appropriate to provide “backup” splits when the primary split is under heavy load.

The FLOW OUT and CALLS BUSY/DISC values help you determine the performance of your vectors. A high FLOW OUT value indicates that the VDN cannot handle the calls within an acceptable period of time. A high CALLS BUSY/DISC value may indicate that your vectors are written incorrectly.

You should use the Agent engineering/optimizing guidelines on page 107 to determine the correct number of agents for each ACD split.

Engineering ACD applications with report data

When engineering and/or optimizing an ACD, use the Average service time engineering tables on page 112 and ACD trunk engineering table on page 137 to determine how many agents and trunks will be required to handle a given number of incoming calls. Each split should be designed individually for the number of agents and trunks required, subject to any pertinent system limitations. You should anticipate any planned future growth, but do not exceed the maximum values of the ACD parameters supported by the BCMS feature.

This section includes the following topics:

About interpolation

Interpolation is a method of estimating tabular values of a function between two known values of that function. When determining the number of agents required and the number of trunks required for a given ACD, you may find that the expected number of call arrivals or the carried load lies somewhere between two entries in the tables. Therefore, the number of agents or trunks required will also lie somewhere between the two entries.

If this is the case, the number of agents required or number of trunks needed can be found by interpolation. Use the following equation to interpolate between tabular values:

$$y = y_0 + (y_1 - y_0)\frac{x - x_0}{x_1 - x_0}$$

where:

x	Is the independent variable calls per hour
y	Is the dependent or functional variable agents or trunks needed
x_0	Is the tabular value of the independent variable that immediately precedes x

x_1	Is the tabular value of the independent variable that immediately succeeds x
y_0	Is the tabular value of the dependent variable that immediately precedes y
y_1	Is the tabular value of the dependent variable that immediately succeeds y

Agent engineering/optimizing guidelines

The Average service time engineering tables on page 112 list the number of ACD agents required to handle a given incoming call load. The top rows on each of these tables show the possible delay times for a given incoming call load (calls per hour or busy hour calls), and the **Number of agents** columns list the agents required to handle the incoming call load so that 90 percent the incoming calls will be answered by the agents before the specified delay has occurred.

Note:

The entries in these tables are in busy-hour calls, which are the number of calls received by the ACD during peak levels of caller activity.

To determine how many agents will be required to handle the incoming call load of an ACD split:

1. Use the BCMS split report (`list bcms split`) to determine the average talk time (the time an agent spends processing a call, or talking to a caller). The Average service time engineering tables on page 112 contain data that describe 7, 15, 30, 45, 60, 90, 120, 180, 240, 300, and 600 second service times. Choose the appropriate table for the average talk time of the ACD split.

   Note:

   Within this document the term *average talk time* is equivalent to the term *average service time*.

2. At the top of the table, choose the closest possible average speed of answer in seconds. Average speed of answer is actually a delay time that is defined as the elapsed time from when a call is routed to the ACD split until it is answered by an agent. The delay criterion states that 90 percent of the incoming calls will be answered by the agents before the specified delay has occurred.
3. If the calling volume, otherwise referred to as the busy-hour calls, is known, use the number indicated on the report. Otherwise, you must estimate this number. The value for busy-hour calls denotes the number of calls received by the ACD during peak levels of caller activity. A typical busy-hour calling rate might be 120, 130, or 160 calls per hour.

Note:

The actual busy-hour calling rate depends on the number of agents staffed and the particular application. Obviously, the numbers that are identified here as being typical would be much too high for five agent positions and too low for 30 agent positions. The numbers given are only for illustration.

4. After choosing the appropriate table and delay column, find the entry in the table for busy-hour calls that is greater than or equal to the number of busy-hour calls chosen.
5. The number of agent positions required is found in the **Number of agents** column of the table.
6. You can interpolate between the tables (for different call service times), between the columns (for different delay times), and between the rows (for different number of calls per hour).

The Average service time engineering tables on page 112 were prepared by using a range of 1 to 1000 agents. For small service times, this yields high traffic rates, even for a small number of agents. The high traffic rates are presented in the tables for completeness only.

Agent engineering examples

This section provides agent engineering examples.

Example 1

The classified ads department of a newspaper receives 160 calls per hour. The average time an agent spends on each call is three minutes. If most of the calls should be answered in less than 30 seconds, how many agents should be employed in this department?

The engineering table 180 seconds average service time on page 127 provides data for 180-second (3-minute) call durations. Under the 30-second column heading (**Average speed of answer**), find the first entry greater than 160 calls per hour (175). Follow this row left to the agents column and find 12 agents. The number of agents required to answer 160 calls (of 3-minute duration) per hour with 90 percent of the callers waiting less than 30 seconds is 12 agents.

For this example, consider the efficiency of the agents and the sensitivity of the parameters to changes in the call arrival rate. The efficiency of the agents is the ratio of the number of agent hours spent on the telephone to the number of agent hours in an hour. The number of agent hours spent on the telephone is 160 calls per hour times 0.05 hours (3 minutes), which equals 8 agent hours. Therefore, the efficiency is 8/12 (12 agents for 1 hour), which equals 0.67 or 67 percent.

Suppose the calls per hour increased to 185 calls per hour. The efficiency is now (185 x 0.05)/12 = 0.77 or 77 percent. The efficiency has increased, but this added efficiency is not free of charge. The delay criterion has changed significantly from about 1.6 percent of all calls taking longer than 30 seconds for an agent to answer to about 15.0

percent (175 calls per hour yield 10.0 percent, but 160 calls per hour were stated). To get the delay criterion back to 1.6 percent would require a delay time of about 55 seconds.

Another measure of what is happening with the queue is the average time spent waiting for service in the queue. With 160 calls per hour, the mean time spent in the queue is 7.53 seconds. With 185 calls per hour, the mean time in the queue is 16.14 seconds. The point of this example is to emphasize the sensitivity of the time in the queue to the arrival rate. In other words, increasing the agent efficiency from 67 percent to 77 percent nearly doubles the various measures of queuing time.

Example 2

Note:

For Examples 2 and 3, the “?s” in the tables represent the unknown values you are looking for. The italicized numbers in the tables represent numbers that are not included in the engineering tables.

The reservations department for a hotel chain knows that the average call duration is five minutes and that most of the potential customers will not wait more than one minute for their call to be answered. How many agents are required to handle 150 calls per hour? Under the 60-second column of 300 seconds average service time on page 131, you will find the following information:

Agents	60
14	129
?	150
16	151

$$y = \textit{number of agents needed}$$

$$y = y_0 + (y_1 - y_0)\frac{x - x_0}{x_1 - x_0}$$

$$y = 14 + (16 - 14)\frac{150 - 129}{151 - 129}$$

$$y = 14 + (2 \times .955)$$

$$y = 15.9$$

Therefore, 16 agents are needed to support the reservations department.

Example 3

The manager of a split in an ACD knows that calls average 75 seconds and that the split receives 200 calls per hour. The manager wants most of the calls to be answered in less than 40 seconds.

How many agents are required?

To answer this question, you must interpolate between all parameters-first, between delay time and calls per hour to obtain the number of calls per hour for a 40-second delay. Under the 30- and 45-second columns of 60 seconds average service time on page 121 and 90 seconds average service time on page 123 you will find:

60 seconds average service time				**75 seconds**	**90 seconds average service time**			
	Average speed of answer					**Average speed of answer**		
Agents	**30**	**40**	**45**		**Agents**	**30**	**40**	**45**
5	186	?	202		7	194	?	205
?		*200*			?		*200*	
6	238	?	257		8	231	?	242

Interpolate between delay time and calls per hour in both tables to obtain calls per hour for a 40-second delay.

$$y = number\ of\ calls\ per\ hour$$

$$y = y_0 + (y_1 - y_0)\frac{x - x_0}{x_1 - x_0}$$

$$y = 186 + (202 - 186)\frac{40 - 30}{45 - 30}$$

$$y = 186 + (16 \times 0.666)$$

$$y = 196.66$$

Now you can fill in the first blank: 197 calls per hour under the 40-second delay time heading. Repeat the interpolation process three more times to come up with the figures 251, 201, and 226.

60 seconds average service time				75 seconds	90 seconds average service time			
	Average speed of answer					Average speed of answer		
Agents	**30**	**40**	**45**		**Agents**	**30**	**40**	**45**
5	186	*197*	202		7	194	*201*	205
?		*200*			?		*200*	
6	238	*251*	257		8	231	*226*	242

$$y = \textit{number of agents needed when a } 60-\textit{second service time is desirable}$$

$$y = y_0 + (y_1 - y_0)\frac{x - x_0}{x_1 - x_0}$$

$$y = 5 + (6 - 5)\frac{200 - 197}{251 - 197}$$

$$y = 5 + (1 \times 0.055)$$

$$y = 5.05$$

So now we know that 5.05 agents would be needed when a 60-second service time is desirable. Repeat the above interpolation process once (for a 90-second service time) to come up with the result:

y (number of agents) = 7

60 seconds average service time				75 seconds	90 seconds average service time			
	Average speed of answer					Average speed of answer		
Agents	**30**	**40**	**45**		**Agents**	**30**	**40**	**45**
5	186	*197*	202		7	194	*201*	205
5.05		*200*			7.27		*200*	
6	238	*251*	257	198	8	217	*226*	231

$$y = \text{number of agents needed when a } 75\text{-second service time is desirable}$$

$$y = y_0 + (y_1 - y_0)\frac{x - x_0}{x_1 - x_0}$$

$$y = 5.05 + (7 - 5.05)\frac{75 - 60}{90 - 60}$$

$$y = 5.05 + (1.95 \times 0.50)$$

$$y = 6.02 \ (or \ 6)$$

From exact calculations, the use of six agents implies that 1 percent of the incoming calls will wait more than 40 seconds.

Average service time engineering tables

Use these tables to determine how many agents and trunks will be required to handle a given number of incoming calls. Each split should be designed individually for the number of agents and trunks required, subject to any pertinent system limitations. You should anticipate any planned future growth, but do not exceed the maximum values of the ACD parameters supported by the BCMS feature.

These tables contain data that describe 7, 15, 30, 45, 60, 90, 120, 180, 240, 300, and 600 second service times. Choose the appropriate table for the average talk time of the ACD split. These tables were prepared by using a range of 1 to 1000 agents. For small service

times, this yields high traffic rates, even for a small number of agents. The high traffic rates are presented in the tables for completeness only.

7 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	154	195	253	302	359	392	429	449	470
2	575	648	736	799	865	902	942	962	984
3	1044	1135	1237	1305	1376	1415	1455	1476	1498
4	1531	1633	1743	1815	1888	1928	1969	1990	2012
5	2025	2136	2251	2326	2401	2441	2483	2504	2526
6	2525	2641	2761	2838	2914	2955	2997	3018	3040
7	3027	3149	3272	3350	3428	3469	3511	3533	3555
8	3532	3657	3783	3863	3941	3983	4025	4047	4069
9	4038	4167	4295	4376	4455	4496	4539	4561	4583
10	4545	4677	4808	4889	4969	5010	5053	5075	5097
12	5562	5699	5833	5916	5997	6039	6082	6104	6126
14	6581	6722	6859	6943	7025	7067	7110	7132	7155
16	7602	7746	7885	7971	8053	8095	8139	8161	8183
18	8625	8771	8912	8998	9081	9123	9167	9189	9212
20	9648	9797	9939	10026	10109	10152	10195	10218	10240
25	12208	12362	12508	12596	12680	12723	12767	12789	12812
30	14772	14929	15077	15166	15251	15294	15338	15360	15383
35	17337	17497	17647	17736	17822	17865	17909	17932	17954
40	19903	20065	20217	20307	20393	20436	20481	20503	20526
45	22470	22634	22787	22878	22964	23008	23052	23074	23097
50	25037	25204	25357	25449	25535	25579	25623	25646	25669
60	30174	30343	30499	30591	30677	30721	30766	30789	30811
70	35312	35483	35640	35733	35820	35864	35909	35932	35954

7 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
80	40451	40624	40782	40875	40963	41007	41052	41074	41097
90	45591	45765	45924	46018	46105	46150	46195	46217	46240
100	50731	50906	51066	51160	51248	51292	51337	51360	51383
125	63582	63760	63922	64016	64105	64149	64194	64217	64240
150	76435	76615	76778	76873	76961	77006	77051	77074	77097
175	89289	89471	89634	89730	89818	89863	89909	89931	89954
200	102144	102326	102491	102586	102675	102720	102766	102788	102811
225	114999	115182	115347	115443	115532	115577	115623	115646	115668
250	127854	128038	128204	128300	128389	128435	128480	128503	128526
275	140710	140895	141061	141157	141246	141292	141337	141360	141383
300	153565	153751	153917	154014	154104	154149	154194	154217	154240
350	179277	179464	179631	179728	179818	179863	179908	179931	179954
400	204990	205177	205345	205442	205532	205577	205623	205645	205668
450	230702	230891	231059	231156	231246	231291	231337	231360	231383
500	256415	256604	256773	256870	256960	257006	257051	257074	257097
550	282128	282318	282487	282584	282674	282720	282765	282788	282811
600	307842	308032	308201	308298	308389	308434	308480	308503	308525
650	333555	333745	333915	334013	334103	334148	334194	334217	334240
700	359268	359459	359629	359727	359817	359863	359908	359931	359954
750	384982	385173	385343	385441	385531	385577	385623	385645	385668
800	410696	410887	411057	411155	411246	411291	411337	411360	411383
850	436409	436601	436771	436869	436960	437005	437051	437074	437097
900	462123	462315	462485	462583	462674	462720	462765	462788	462811
950	487837	488029	488199	488298	488388	488434	488480	488503	488525
1000	513551	513743	513914	514012	514103	514148	514194	514217	514240

15 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	44	52	68	86	115	136	163	180	198
2	196	222	261	295	339	367	399	417	437
3	386	425	478	521	572	603	637	656	676
4	592	640	703	752	808	840	876	896	916
5	806	862	933	986	1045	1078	1115	1135	1156
6	1025	1089	1165	1221	1282	1317	1355	1375	1396
7	1248	1317	1399	1457	1521	1556	1594	1615	1636
8	1474	1548	1634	1694	1759	1795	1834	1854	1875
9	1702	1780	1869	1932	1998	2035	2074	2094	2115
10	1931	2013	2106	2170	2237	2274	2313	2334	2355
12	2393	2482	2580	2646	2715	2753	2793	2814	2835
14	2858	2953	3055	3124	3194	3232	3273	3294	3315
16	3326	3425	3531	3601	3673	3712	3752	3773	3795
18	3796	3899	4008	4079	4152	4191	4232	4253	4275
20	4266	4373	4485	4558	4631	4671	4712	4733	4755
25	5448	5562	5679	5754	5830	5870	5911	5933	5955
30	6634	6753	6875	6952	7029	7069	7111	7133	7155
35	7823	7947	8071	8150	8228	8269	8311	8333	8355
40	9013	9141	9268	9349	9427	9468	9511	9533	9555
45	10205	10336	10466	10547	10626	10668	10711	10732	10755
50	11399	11532	11664	11746	11826	11868	11910	11932	11955
60	13787	13926	14061	14144	14225	14267	14310	14332	14355
70	16178	16321	16458	16543	16624	16667	16710	16732	16755
80	18571	18716	18856	18942	19024	19066	19110	19132	19154

15 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	20965	21113	21254	21341	21423	21466	21510	21532	21554
100	23359	23510	23653	23740	23823	23866	23910	23932	23954
125	29349	29504	29650	29738	29822	29866	29910	29932	29954
150	35341	35499	35648	35737	35822	35865	35909	35932	35954
175	41334	41496	41646	41736	41821	41865	41909	41932	41954
200	47329	47493	47645	47735	47821	47865	47909	47932	47954
225	53325	53490	53644	53735	53821	53865	53909	53932	53954
250	59321	59488	59643	59734	59821	59865	59909	59932	59954
275	65318	65487	65642	65734	65820	65864	65909	65932	65954
300	71315	71485	71641	71733	71820	71864	71909	71932	71954
350	83310	83482	83640	83733	83820	83864	83909	83931	83954
400	95307	95480	95639	95732	95820	95864	95909	95931	95954
450	107303	107478	107638	107732	107819	107864	107909	107931	107954
500	119301	119477	119637	119731	119819	119864	119909	119931	119954
550	131298	131476	131636	131731	131819	131864	131909	131931	131954
600	143296	143474	143636	143731	143819	143864	143909	143931	143954
650	155294	155473	155635	155730	155819	155864	155909	155931	155954
700	167293	167473	167635	167730	167819	167863	167909	167931	167954
750	179291	179472	179635	179730	179819	179863	179909	179931	179954
800	191290	191471	191634	191730	191818	191863	191909	191931	191954
850	203289	203470	203634	203729	203818	203863	203909	203931	203954
900	215287	215470	215634	215729	215818	215863	215909	215931	215954
950	227286	227469	227633	227729	227818	227863	227909	227931	227954
1000	239285	239469	239633	239729	239818	239863	239908	239931	239954

30 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	16	18	22	26	35	43	57	68	82
2	79	86	98	111	132	147	169	183	200
3	161	173	193	212	240	260	286	301	319
4	252	270	296	320	353	376	404	420	438
5	349	371	403	431	468	493	522	539	558
6	450	476	513	544	585	611	641	659	677
7	554	583	624	659	702	729	760	778	797
8	660	692	737	774	819	847	880	898	917
9	767	803	851	890	937	966	999	1017	1037
10	875	914	965	1007	1055	1085	1118	1137	1157
12	1096	1140	1196	1241	1292	1323	1358	1376	1396
14	1319	1368	1429	1476	1530	1562	1597	1616	1636
16	1544	1597	1663	1712	1768	1801	1836	1856	1876
18	1772	1829	1898	1949	2007	2040	2076	2096	2116
20	2001	2061	2133	2186	2245	2279	2316	2335	2356
25	2577	2645	2724	2781	2843	2877	2915	2935	2956
30	3159	3232	3317	3377	3440	3476	3514	3535	3556
35	3743	3822	3911	3973	4039	4075	4114	4134	4155
40	4330	4414	4507	4571	4637	4674	4714	4734	4755
45	4919	5006	5103	5168	5236	5274	5313	5334	5355
50	5509	5600	5699	5766	5835	5873	5913	5934	5955
60	6692	6789	6894	6963	7034	7072	7113	7134	7155
70	7879	7981	8089	8160	8233	8271	8312	8333	8355
80	9067	9174	9285	9358	9432	9471	9512	9533	9555

30 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	10257	10368	10482	10556	10631	10670	10712	10733	10755
100	11449	11563	11680	11755	11830	11870	11912	11933	11955
125	14432	14552	14674	14752	14829	14869	14911	14933	14955
150	17419	17545	17670	17750	17828	17869	17911	17933	17955
175	20408	20538	20667	20748	20827	20868	20911	20933	20955
200	23399	23533	23665	23746	23826	23868	23911	23932	23955
225	26392	26529	26662	26745	26826	26867	26910	26932	26955
250	29386	29525	29661	29744	29825	29867	29910	29932	29955
275	32380	32522	32659	32743	32825	32867	32910	32932	32955
300	35375	35519	35658	35742	35824	35867	35910	35932	35954
350	41367	41514	41655	41741	41824	41866	41910	41932	41954
400	47360	47510	47653	47740	47823	47866	47910	47932	47954
450	53354	53507	53652	53739	53823	53866	53910	53932	53954
500	59349	59504	59650	59738	59822	59866	59910	59932	59954
550	65345	65502	65649	65738	65822	65865	65910	65932	65954
600	71341	71500	71648	71737	71822	71865	71909	71932	71954
650	77338	77498	77647	77737	77822	77865	77909	77932	77954
700	83335	83496	83646	83736	83821	83865	83909	83932	83954
750	89332	89495	89646	89736	89821	89865	89909	89932	89954
800	95330	95493	95645	95735	95821	95865	95909	95932	95954
850	101327	101492	101644	101735	101821	101865	101909	101932	101954
900	107325	107491	107644	107735	107821	107865	107909	107932	107954
950	113323	113490	113643	113735	113821	113865	113909	113932	113954
1000	119322	119489	119643	119734	119821	119865	119909	119932	119954

45 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	10	11	12	14	17	21	29	35	45
2	48	52	57	63	74	83	98	109	122
3	99	105	115	125	142	155	174	186	201
4	157	165	179	193	213	229	251	264	280
5	218	229	246	263	287	305	329	343	359
6	282	296	316	335	363	382	407	422	439
7	348	364	387	409	439	460	486	501	519
8	416	434	460	484	516	538	565	581	598
9	485	504	533	559	593	616	644	660	678
10	555	576	607	635	671	695	723	740	758
12	697	722	758	788	827	852	882	899	918
14	841	870	909	943	984	1010	1041	1059	1077
16	988	1019	1062	1098	1142	1169	1200	1218	1237
18	1135	1170	1216	1254	1300	1327	1360	1378	1397
20	1284	1322	1371	1410	1458	1486	1519	1537	1557
25	1661	1704	1760	1803	1854	1884	1918	1937	1957
30	2042	2090	2151	2198	2251	2282	2317	2336	2356
35	2426	2479	2544	2594	2649	2681	2717	2736	2756
40	2812	2869	2938	2990	3047	3080	3116	3136	3156
45	3199	3260	3333	3387	3445	3479	3516	3535	3556
50	3589	3653	3729	3784	3844	3878	3915	3935	3956
60	4370	4440	4522	4580	4642	4677	4715	4735	4756
70	5154	5230	5316	5376	5440	5476	5514	5535	5556
80	5941	6021	6111	6173	6239	6275	6314	6334	6355

45 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	6730	6814	6907	6971	7038	7074	7114	7134	7155
100	7520	7607	7703	7769	7837	7874	7913	7934	7955
125	9499	9594	9696	9765	9835	9873	9913	9934	9955
150	11483	11584	11691	11761	11833	11872	11912	11933	11955
175	13470	13576	13686	13759	13832	13871	13912	13933	13955
200	15459	15569	15683	15757	15831	15870	15912	15933	15955
225	17449	17563	17680	17755	17830	17870	17912	17933	17955
250	19441	19558	19677	19754	19829	19870	19911	19933	19955
275	21434	21554	21675	21752	21829	21869	21911	21933	21955
300	23428	23550	23673	23751	23828	23869	23911	23933	23955
350	27417	27543	27670	27749	27827	27868	27911	27933	27955
400	31408	31538	31667	31748	31827	31868	31911	31933	31955
450	35400	35533	35665	35747	35826	35868	35911	35932	35955
500	39393	39530	39663	39745	39826	39867	39910	39932	39955
550	43387	43526	43661	43744	43825	43867	43910	43932	43955
600	47382	47523	47660	47744	47825	47867	47910	47932	47955
650	51378	51521	51658	51743	51824	51867	51910	51932	51955
700	55374	55518	55657	55742	55824	55867	55910	55932	55954
750	59370	59516	59656	59742	59824	59866	59910	59932	59954
800	63366	63514	63655	63741	63824	63866	63910	63932	63954
850	67363	67512	67654	67741	67823	67866	67910	67932	67954
900	71360	71511	71653	71740	71823	71866	71910	71932	71954
950	75358	75509	75653	75740	75823	75866	75910	75932	75954
1000	79355	79508	79652	79739	79823	79866	79910	79932	79954

60 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	7	7	8	9	11	13	17	22	29
2	35	36	40	43	50	56	66	74	85
3	72	75	81	87	97	106	120	130	143
4	113	118	126	135	149	160	177	188	202
5	158	164	175	186	202	216	234	246	261
6	204	212	225	238	257	272	292	305	321
7	253	262	277	292	313	329	351	364	380
8	302	313	330	346	370	387	410	424	440
9	352	365	383	401	427	445	469	483	500
10	403	417	438	457	484	503	528	542	559
12	508	524	548	570	600	620	646	662	679
14	614	632	659	684	716	738	765	781	799
16	721	742	772	799	833	856	884	900	918
18	830	853	886	914	951	975	1003	1020	1038
20	940	965	1000	1030	1069	1093	1123	1139	1158
25	1218	1248	1289	1322	1364	1390	1421	1439	1457
30	1500	1534	1579	1616	1661	1688	1720	1738	1757
35	1784	1822	1872	1911	1958	1987	2019	2038	2057
40	2071	2112	2165	2207	2256	2285	2319	2337	2357
45	2358	2403	2459	2503	2554	2584	2618	2637	2657
50	2648	2695	2754	2800	2852	2883	2918	2937	2956
60	3229	3281	3346	3395	3450	3481	3517	3536	3556
70	3813	3870	3939	3990	4047	4080	4116	4136	4156
80	4399	4460	4534	4587	4646	4679	4716	4735	4756

60 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	4987	5052	5129	5184	5244	5278	5315	5335	5356
100	5576	5645	5725	5781	5843	5877	5915	5935	5956
125	7054	7130	7216	7276	7340	7376	7414	7435	7456
150	8536	8618	8709	8772	8838	8875	8914	8934	8955
175	10021	10108	10204	10269	10337	10374	10413	10434	10455
200	11509	11600	11700	11767	11836	11873	11913	11934	11955
225	12998	13094	13196	13264	13335	13373	13413	13434	13455
250	14489	14588	14693	14763	14834	14872	14913	14934	14955
275	15980	16082	16190	16261	16333	16372	16412	16433	16455
300	17473	17578	17688	17760	17832	17871	17912	17933	17955
350	20460	20570	20683	20757	20831	20871	20912	20933	20955
400	23450	23563	23680	23755	23830	23870	23912	23933	23955
450	26440	26558	26677	26754	26829	26870	26911	26933	26955
500	29432	29553	29675	29752	29829	29869	29911	29933	29955
550	32426	32549	32673	32751	32828	32869	32911	32933	32955
600	35419	35545	35671	35750	35828	35869	35911	35933	35955
650	38414	38542	38669	38749	38827	38868	38911	38933	38955
700	41409	41539	41667	41748	41827	41868	41911	41933	41955
750	44404	44536	44666	44747	44826	44868	44911	44932	44955
800	47400	47534	47665	47747	47826	47868	47911	47932	47955
850	50396	50531	50664	50746	50826	50868	50910	50932	50955
900	53393	53529	53663	53745	53826	53867	53910	53932	53955
950	56389	56527	56662	56745	56825	56867	56910	56932	56955
1000	59386	59526	59661	59744	59825	59867	59910	59932	59955

90 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	5	5	5	6	7	9	11	14	18
2	23	24	26	29	32	37	42	49	54
3	47	50	53	58	63	71	77	87	93
4	75	78	83	90	96	107	115	125	132
5	104	109	115	124	131	144	153	164	171
6	135	141	148	159	168	181	191	204	211
7	167	174	182	194	205	220	230	243	251
8	199	208	217	231	242	258	269	282	290
9	233	242	252	268	280	297	308	322	330
10	267	277	288	305	318	336	347	362	370
12	336	348	361	380	394	414	426	441	450
14	406	421	435	456	471	492	505	521	529
16	477	494	510	532	549	571	584	600	609
18	549	568	585	610	627	650	664	680	689
20	622	642	661	687	705	729	743	760	769
25	807	831	852	882	902	927	942	959	968
30	994	1021	1045	1077	1099	1126	1141	1159	1168
35	1182	1213	1239	1274	1297	1324	1341	1358	1368
40	1373	1406	1435	1471	1495	1524	1540	1558	1568
45	1564	1600	1630	1669	1693	1723	1740	1758	1768
50	1756	1794	1826	1867	1892	1922	1939	1958	1968
60	2142	2185	2220	2263	2290	2321	2338	2357	2367
70	2530	2577	2615	2660	2688	2720	2738	2757	2767
80	2920	2971	3011	3058	3087	3119	3138	3157	3167

90 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	3311	3365	3407	3456	3485	3519	3537	3557	3567
100	3703	3760	3804	3854	3884	3918	3937	3957	3967
125	4687	4750	4797	4851	4882	4917	4936	4956	4967
150	5673	5742	5792	5848	5881	5917	5936	5956	5967
175	6662	6735	6788	6846	6879	6916	6936	6956	6967
200	7653	7729	7784	7844	7878	7915	7935	7956	7967
225	8645	8725	8782	8843	8878	8915	8935	8956	8967
250	9638	9721	9779	9842	9877	9915	9935	9956	9966
275	10631	10717	10777	10841	10876	10914	10935	10956	10966
300	11626	11714	11775	11840	11876	11914	11934	11956	11966
350	13616	13708	13772	13838	13875	13914	13934	13955	13966
400	15608	15704	15769	15837	15874	15913	15934	15955	15966
450	17601	17700	17767	17836	17873	17913	17934	17955	17966
500	19594	19697	19765	19835	19873	19913	19934	19955	19966
550	21589	21694	21763	21834	21872	21913	21934	21955	21966
600	23584	23691	23762	23833	23872	23912	23933	23955	23966
650	25580	25689	25760	25833	25871	25912	25933	25955	25966
700	27576	27687	27759	27832	27871	27912	27933	27955	27966
750	29573	29685	29758	29832	29871	29912	29933	29955	29966
800	31569	31683	31757	31831	31871	31912	31933	31955	31966
850	33566	33682	33756	33831	33870	33912	33933	33955	33966
900	35563	35680	35755	35830	35870	35912	35933	35955	35966
950	37561	37679	37755	37830	37870	37912	37933	37955	37966
1000	39559	39678	39754	39830	39870	39911	39933	39955	39966

120 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	3	4	4	4	5	6	7	9	11
2	17	17	18	20	22	25	28	33	37
3	34	36	37	40	43	49	53	60	65
4	54	57	59	63	67	74	80	88	94
5	76	79	82	88	93	101	108	117	123
6	99	102	106	113	119	129	136	146	153
7	122	126	131	139	146	157	165	175	182
8	146	151	156	165	173	185	193	205	212
9	170	176	182	192	201	213	223	234	241
10	195	202	209	220	229	242	252	264	271
12	246	254	262	275	285	300	310	323	331
14	298	307	316	331	342	358	369	383	390
16	350	361	371	387	399	417	428	442	450
18	404	415	427	444	457	475	487	502	510
20	457	470	483	501	515	534	547	561	570
25	594	609	624	646	661	682	695	711	719
30	732	750	767	791	808	830	844	860	869
35	872	892	911	937	956	979	993	1010	1019
40	1013	1035	1056	1084	1103	1128	1143	1159	1169
45	1155	1179	1201	1231	1252	1277	1292	1309	1318
50	1297	1324	1347	1379	1400	1426	1442	1459	1468
60	1584	1614	1641	1675	1697	1725	1741	1758	1768
70	1873	1906	1935	1972	1995	2024	2040	2058	2068
80	2163	2199	2230	2269	2293	2323	2340	2358	2368

120 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	2454	2493	2526	2566	2592	2622	2639	2658	2668
100	2746	2788	2822	2864	2891	2921	2939	2958	2967
125	3480	3527	3565	3610	3638	3670	3688	3707	3717
150	4216	4268	4309	4357	4386	4419	4437	4457	4467
175	4954	5011	5054	5105	5135	5168	5187	5207	5217
200	5694	5754	5800	5853	5883	5918	5937	5957	5967
225	6436	6499	6547	6601	6632	6667	6686	6706	6717
250	7178	7244	7294	7349	7381	7417	7436	7456	7467
275	7921	7990	8041	8098	8130	8166	8186	8206	8217
300	8665	8737	8789	8847	8880	8916	8936	8956	8967
350	10154	10230	10285	10345	10379	10416	10435	10456	10467
400	11645	11725	11782	11843	11878	11915	11935	11956	11967
450	13137	13220	13279	13342	13377	13415	13435	13456	13466
500	14630	14716	14776	14840	14876	14914	14935	14956	14966
550	16124	16213	16274	16339	16375	16414	16434	16456	16466
600	17618	17710	17773	17839	17875	17914	17934	17955	17966
650	19113	19207	19271	19338	19374	19414	19434	19455	19466
700	20609	20704	20769	20837	20874	20913	20934	20955	20966
750	22105	22202	22268	22336	22374	22413	22434	22455	22466
800	23601	23700	23767	23836	23873	23913	23934	23955	23966
850	25097	25198	25266	25335	25373	25413	25434	25455	25466
900	26594	26696	26765	26835	26873	26913	26934	26955	26966
950	28091	28195	28264	28334	28372	28413	28434	28455	28466
1000	29588	29693	29763	29834	29872	29913	29934	29955	29966

180 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	2	2	2	2	3	3	3	4	5
2	11	11	11	12	13	14	16	19	21
3	22	23	24	25	26	29	31	35	39
4	35	36	37	39	41	45	48	53	57
5	49	51	52	55	57	62	66	72	76
6	64	66	67	71	74	79	84	91	96
7	79	81	83	87	91	97	102	110	115
8	95	97	100	104	108	115	121	129	134
9	111	113	116	122	126	134	140	148	154
10	127	130	133	139	144	152	159	168	174
12	160	164	168	175	180	190	197	207	213
14	194	198	203	211	217	228	236	246	253
16	228	233	239	247	255	266	274	285	292
18	263	269	275	284	292	305	313	325	332
20	298	304	311	322	330	343	353	364	372
25	387	395	403	416	426	441	451	463	471
30	478	487	497	511	523	539	549	563	571
35	570	581	591	607	620	637	648	662	670
40	662	674	686	704	717	736	747	762	770
45	755	769	782	801	815	834	847	861	870
50	849	864	878	898	913	933	946	961	970
60	1038	1055	1071	1094	1110	1132	1145	1160	1169
70	1228	1247	1265	1290	1307	1330	1344	1360	1369
80	1419	1441	1460	1487	1505	1529	1543	1560	1569

180 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	1612	1635	1656	1684	1703	1728	1743	1759	1769
100	1804	1829	1852	1882	1902	1927	1942	1959	1968
125	2289	2318	2343	2377	2399	2425	2441	2459	2468
150	2776	2809	2837	2873	2896	2924	2940	2958	2968
175	3264	3301	3331	3369	3394	3423	3440	3458	3468
200	3755	3794	3826	3867	3892	3922	3939	3958	3968
225	4246	4288	4322	4365	4391	4421	4439	4458	4468
250	4738	4783	4819	4863	4890	4921	4938	4957	4967
275	5231	5278	5316	5361	5388	5420	5438	5457	5467
300	5724	5774	5813	5859	5887	5920	5938	5957	5967
350	6713	6766	6808	6857	6886	6919	6937	6957	6967
400	7703	7760	7804	7854	7885	7918	7937	7957	7967
450	8694	8754	8800	8853	8883	8918	8937	8957	8967
500	9686	9750	9797	9851	9882	9917	9936	9956	9967
550	10680	10745	10795	10850	10882	10917	10936	10956	10967
600	11673	11742	11792	11848	11881	11917	11936	11956	11967
650	12668	12738	12790	12847	12880	12916	12936	12956	12967
700	13662	13735	13788	13846	13880	13916	13936	13956	13967
750	14657	14732	14786	14845	14879	14916	14935	14956	14967
800	15653	15730	15785	15845	15879	15916	15935	15956	15967
850	16649	16727	16783	16844	16878	16915	16935	16956	16967
900	17645	17725	17782	17843	17878	17915	17935	17956	17967
950	18641	18723	18780	18842	18877	18915	18935	18956	18966
1000	19638	19721	19779	19842	19877	19915	19935	19956	19966

240 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	2	2	2	2	2	2	2	3	3
2	8	8	8	9	9	10	11	12	14
3	16	17	17	18	19	20	22	24	27
4	26	27	27	28	30	32	34	37	40
5	36	37	38	40	41	44	46	51	54
6	47	48	49	51	53	57	59	64	68
7	58	60	61	63	66	69	73	78	82
8	70	71	73	76	78	83	87	92	97
9	82	83	85	88	91	96	100	107	111
10	94	96	98	101	104	110	114	121	126
12	118	121	123	127	131	137	142	150	155
14	143	146	149	154	158	165	171	179	185
16	169	172	175	181	186	194	200	208	214
18	195	198	202	208	213	222	229	238	244
20	221	225	229	235	241	251	258	267	273
25	287	292	297	305	312	323	331	341	348
30	354	360	366	376	383	395	404	415	422
35	422	429	436	447	456	469	478	490	497
40	491	499	506	518	528	542	552	564	571
45	561	569	577	590	601	616	626	638	646
50	630	639	649	663	674	689	700	713	721
60	771	781	792	808	820	837	849	862	870
70	912	924	936	954	967	986	998	1012	1020
80	1055	1068	1081	1101	1115	1134	1147	1161	1170

240 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	1198	1213	1227	1248	1263	1283	1296	1311	1320
100	1341	1358	1373	1395	1411	1432	1445	1461	1469
125	1702	1722	1740	1765	1782	1805	1819	1835	1844
150	2065	2088	2108	2136	2155	2179	2193	2210	2219
175	2430	2455	2477	2507	2527	2552	2567	2584	2593
200	2796	2823	2847	2879	2900	2926	2942	2959	2968
225	3162	3192	3218	3251	3273	3300	3316	3334	3343
250	3530	3562	3589	3624	3647	3675	3691	3708	3718
275	3898	3932	3961	3997	4021	4049	4065	4083	4093
300	4267	4302	4332	4370	4394	4423	4440	4458	4468
350	5005	5045	5077	5117	5142	5172	5189	5208	5218
400	5746	5788	5822	5865	5891	5922	5939	5958	5968
450	6487	6532	6568	6612	6639	6671	6688	6707	6717
500	7229	7277	7315	7360	7388	7420	7438	7457	7467
550	7972	8022	8062	8109	8137	8170	8188	8207	8217
600	8715	8768	8809	8857	8886	8919	8937	8957	8967
650	9459	9514	9557	9606	9635	9669	9687	9707	9717
700	10204	10261	10304	10355	10385	10418	10437	10457	10467
750	10949	11007	11052	11104	11134	11168	11187	11207	11217
800	11694	11754	11800	11853	11883	11918	11937	11957	11967
850	12440	12502	12549	12602	12633	12668	12686	12706	12717
900	13186	13249	13297	13351	13382	13417	13436	13456	13467
950	13932	13997	14045	14100	14132	14167	14186	14206	14217
1000	14678	14744	14794	14849	14881	14917	14936	14956	14967

300 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	1	1	1	1	1	2	2	2	2
2	6	6	7	7	7	8	8	9	10
3	13	13	13	14	14	15	16	18	20
4	21	21	21	22	23	24	26	28	30
5	29	29	30	31	32	34	36	39	41
6	37	38	39	40	41	44	46	49	52
7	46	47	48	50	51	54	56	60	63
8	56	56	57	59	61	64	67	71	75
9	65	66	67	69	71	75	78	83	86
10	74	76	77	79	81	85	89	94	98
12	94	95	97	100	102	107	111	117	121
14	114	116	117	121	124	129	133	140	144
16	134	136	138	142	145	151	156	163	168
18	155	157	159	164	167	174	179	186	191
20	175	178	181	185	189	196	202	210	215
25	228	231	235	240	245	253	260	268	274
30	281	285	289	296	302	311	318	327	333
35	336	340	345	352	359	369	377	387	393
40	390	395	401	409	416	427	435	446	453
45	445	451	457	466	474	486	494	505	512
50	501	507	513	524	532	545	554	565	572
60	612	620	627	639	649	662	672	684	691
70	725	734	742	755	766	781	791	804	811
80	838	848	857	872	883	899	910	923	931

300 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	952	963	973	989	1001	1018	1029	1043	1050
100	1067	1078	1089	1106	1119	1137	1148	1162	1170
125	1354	1368	1381	1401	1415	1434	1447	1461	1470
150	1643	1659	1675	1696	1712	1733	1746	1761	1769
175	1934	1952	1969	1992	2009	2031	2045	2060	2069
200	2225	2245	2264	2289	2307	2330	2344	2360	2369
225	2518	2539	2559	2586	2605	2629	2643	2660	2669
250	2811	2834	2855	2884	2904	2928	2943	2959	2969
275	3104	3129	3152	3182	3202	3227	3242	3259	3268
300	3398	3425	3449	3480	3501	3527	3542	3559	3568
350	3987	4017	4043	4076	4098	4125	4141	4159	4168
400	4578	4610	4638	4674	4697	4724	4741	4758	4768
450	5170	5204	5234	5271	5295	5324	5340	5358	5368
500	5762	5799	5830	5869	5894	5923	5940	5958	5968
550	6355	6394	6427	6467	6492	6522	6539	6558	6568
600	6948	6990	7024	7065	7091	7122	7139	7158	7168
650	7543	7586	7621	7664	7690	7721	7739	7757	7767
700	8137	8182	8219	8262	8290	8321	8338	8357	8367
750	8732	8779	8816	8861	8889	8920	8938	8957	8967
800	9327	9376	9414	9460	9488	9520	9538	9557	9567
850	9923	9973	10012	10059	10087	10120	10138	10157	10167
900	10518	10570	10610	10658	10687	10719	10738	10757	10767
950	11114	11167	11209	11257	11286	11319	11337	11357	11367
1000	11711	11765	11807	11856	11886	11919	11937	11957	11967

600 seconds average service time

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
1	1	1	1	1	1	1	1	1	1
2	3	3	3	3	3	4	4	4	5
3	6	6	7	7	7	7	8	8	9
4	10	10	11	11	11	11	12	13	14
5	14	14	15	15	15	16	17	18	19
6	19	19	19	19	20	21	22	23	25
7	23	23	24	24	25	26	27	28	30
8	28	28	28	29	30	30	32	33	36
9	32	32	33	34	35	36	37	39	41
10	37	37	38	38	40	41	43	44	47
12	47	47	48	48	50	51	53	55	58
14	56	57	58	59	60	62	64	67	70
16	66	67	68	69	71	73	76	78	81
18	77	77	78	80	82	84	87	89	93
20	87	88	89	90	93	95	98	101	105
25	113	114	116	117	120	123	127	130	134
30	140	141	143	145	148	151	156	159	164
35	166	168	170	172	176	179	185	188	193
40	194	195	198	200	205	208	214	218	223
45	221	223	226	228	233	237	243	247	253
50	248	250	254	257	262	266	272	277	282
60	304	306	310	314	320	324	331	336	342
70	360	363	367	371	378	383	390	395	402
80	416	419	424	429	436	442	450	455	461

600 seconds average service time (continued)

Number of agents	Average speed of answer								
	11	15	22	30	45	60	90	120	180
90	473	476	482	487	495	501	509	514	521
100	530	533	539	545	553	560	568	574	581
125	672	677	684	691	700	708	717	723	731
150	816	822	830	837	848	856	866	873	880
175	961	967	977	984	996	1005	1016	1022	1030
200	1106	1113	1123	1132	1145	1154	1165	1172	1180
225	1251	1259	1270	1280	1293	1303	1314	1322	1330
250	1397	1405	1418	1428	1442	1452	1464	1471	1480
275	1543	1552	1565	1576	1591	1601	1614	1621	1630
300	1690	1699	1713	1724	1740	1750	1763	1771	1780
350	1983	1994	2010	2021	2038	2049	2063	2071	2079
400	2277	2289	2306	2319	2337	2348	2362	2370	2379
450	2572	2585	2603	2617	2636	2648	2662	2670	2679
500	2867	2881	2901	2915	2934	2947	2961	2970	2979
550	3163	3177	3198	3213	3234	3246	3261	3270	3279
600	3459	3474	3496	3512	3533	3546	3561	3569	3579
650	3755	3771	3794	3811	3832	3845	3861	3869	3879
700	4051	4069	4092	4109	4131	4145	4160	4169	4179
750	4348	4366	4391	4408	4431	4444	4460	4469	4479
800	4645	4664	4689	4707	4730	4744	4760	4769	4779
850	4942	4961	4988	5006	5029	5044	5060	5069	5079
900	5239	5259	5286	5305	5329	5343	5360	5369	5378
950	5536	5557	5585	5604	5629	5643	5660	5669	5678
1000	5834	5855	5884	5904	5928	5943	5959	5969	5978

Trunk Engineering Guidelines

The number of trunks required for a typical ACD ranges from 1.1 to 1.7 times the number of agents (whenever a blocked call represents potential lost revenue). As in the case of agents, the number of trunks required for an ACD is based on the incoming traffic to each split, not the ACD as a whole.

The left-most column in the ACD trunk engineering table on page 137 lists the number of trunks required to service a split, depending on the carried load in Erlangs and the blocking probability. Erlang is a unit of traffic intensity, or load, used to express the amount of traffic it takes to keep one facility busy for one hour. Blocking probability relates to the desired grade of service. The possible blocking probabilities are shown across the top of the ACD trunk engineering table on page 137, and the entries under the blocking probabilities are carried loads in Erlangs.

To determine the number of trunks needed for a given split:

- You will need a split report for the peak busy-hour (**`list bcms split ## time xx:xx xx:xx`**) for the busiest day of the week.

  Tip:

  If the time interval is sufficiently long to cover the busiest hours of the day (such as 8:00 to 18:00) you need only scan the report to determine which hour is the busy hour.

- For the identified peak busy hour, you need to determine the average talk time and the average speed of answer. Otherwise, you must estimate the average call duration: the total time a caller spends waiting for an answer, plus any time on hold (in queue), and plus the service time (the time the caller spends talking to an agent).
- If you know the calling volume, also referred to as the busy-hour calls, use that value. As an alternative, you must estimate the number of busy-hour calls received by the ACD split during peak levels of caller activity.

  Note:

  The calling volume is simply the sum of the two fields (`ACD CALLS` and `ABAND CALLS`) for the identified busy hour. This does not include:

  - Calls never queued
  - Calls given Central Office (CO) busy

- Multiply the call duration (in fractions of an hour) by the rate of busy-hour calls (in calls per hour). This number is the carried load in Erlangs. Abandoned calls should be multiplied by the AVG ABAND time.
- Determine the desired grade of service (the blocking probability). The blocking probability for each split is defined as the ratio of blocked calls to the total number of incoming calls.

- In the column corresponding to the desired grade of service (for example, 1 percent blocking probability), choose the nearest higher carried load. The number of trunks required is then read from the left-most column.

  Note:

  The entries in the ACD trunk engineering table on page 137 are offered loads in Erlangs.

Example:

An insurance agency has an ACD that queues calls incoming from the public switched network. The agency knows that the average caller spends 30 seconds on hold (in queue) and requires 6 minutes and 20 seconds to service. The busy-hour call arrival rate is 70 per hour. How many trunks does the agency need to provide a service level of 99 percent (1 percent blocking probability)?

The average call duration is calculated as follows:

```
average call duration = 30 + 380 = 410 seconds or 0.11389 hours
```

Therefore, the carried load in Erlangs is:

```
carried load = 0.11389 x 70 = 7.972
```

Under the 1 percent column, you will find that 14 trunks can service a carried load of 7.278 Erlangs while 16 trunks can service 8.786 Erlangs. Interpolate as follows:

$$y = number\ of\ trunks$$

$$y = y_0 + (y_1 - y_0)\frac{x - x_0}{x_1 - x_0}$$

$$y = 14 + (16 - 14)\frac{7.972 - 7.278}{8.786 - 7.278}$$

$$y = 14 + (2 \times 0.460)$$

$$y = 14.92$$

Therefore, the agency will need 15 trunks to satisfy its customers.

ACD trunk engineering table

Number of trunks	Blocking probability								
	0.01%	0.02%	0.05%	0.10%	0.20%	0.50%	1.00%	2.00%	5.00%
1	0.0002	0.0003	0.0006	0.0011	0.0021	0.0050	0.0100	0.0200	0.0500
2	0.0142	0.0202	0.0321	0.0457	0.0652	0.1049	0.1511	0.2190	0.3622
3	0.0868	0.1102	0.1516	0.1936	0.2482	0.3473	0.4509	0.5902	0.8544
4	0.2347	0.2824	0.3622	0.4388	0.5340	0.6977	0.8607	1.070	1.448
5	0.4519	0.5269	0.6482	0.7614	0.8981	1.126	1.347	1.624	2.108
6	0.7282	0.8314	0.9952	1.145	1.323	1.614	1.890	2.230	2.812
7	1.054	1.186	1.392	1.577	1.795	2.147	2.476	2.877	3.551
8	1.422	1.582	1.829	2.049	2.306	2.716	3.096	3.555	4.316
9	1.825	2.013	2.300	2.555	2.849	3.316	3.745	4.258	5.102
10	2.260	2.474	2.801	3.089	3.420	3.941	4.417	4.982	5.905
12	3.207	3.473	3.876	4.227	4.628	5.253	5.817	6.482	7.553
14	4.238	4.555	5.030	5.441	5.907	6.630	7.278	8.036	9.243
16	5.338	5.703	6.246	6.715	7.244	8.059	8.786	9.632	10.97
18	6.495	6.905	7.515	8.038	8.626	9.530	10.33	11.26	12.72
20	7.700	8.154	8.827	9.402	10.05	11.04	11.91	12.92	14.49
25	10.88	11.44	12.26	12.96	13.74	14.92	15.96	17.15	18.99
30	14.24	14.90	15.86	16.67	17.57	18.94	20.13	21.49	23.56
35	17.75	18.49	19.58	20.50	21.52	23.05	24.39	25.91	28.19
40	21.37	22.19	23.40	24.42	25.55	27.24	28.72	30.38	32.87
45	25.08	25.98	27.31	28.42	29.65	31.50	33.10	34.89	37.57
50	28.86	29.85	31.28	32.48	33.81	35.80	37.52	39.45	42.31
60	36.62	37.75	39.38	40.75	42.27	44.53	46.48	48.65	51.84
70	44.57	45.83	47.66	49.19	50.88	53.39	55.55	57.95	61.43

ACD trunk engineering table (continued)

Number of trunks	Blocking probability								
	0.01%	0.02%	0.05%	0.10%	0.20%	0.50%	1.00%	2.00%	5.00%
80	52.68	54.07	56.07	57.75	59.60	62.35	64.71	67.31	71.08
90	60.92	62.42	64.60	66.42	68.42	71.40	73.94	76.74	80.76
100	69.26	70.87	73.21	75.17	77.31	80.51	83.22	86.21	90.48
125	90.47	92.35	95.07	97.33	99.82	103.5	106.6	110.1	114.9
150	112.1	114.2	117.3	119.8	122.6	126.8	130.3	134.1	139.4
175	134.0	136.3	139.7	142.5	145.6	150.2	154.0	158.2	163.9
200	156.2	158.7	162.4	165.5	168.8	173.8	177.9	182.4	188.6
225	178.5	181.3	185.2	188.5	192.1	197.5	201.9	206.7	213.3
250	201.0	203.9	208.2	211.7	215.6	221.3	226.0	231.1	238.0
275	223.7	226.8	231.3	235.0	239.1	245.1	250.2	255.5	262.7
300	246.4	249.7	254.4	258.4	262.7	269.1	274.4	280.0	287.5
400	338.4	342.3	347.9	352.6	357.8	365.3	371.6	378.2	386.7
500	431.4	435.9	442.3	447.7	453.6	462.2	469.3	476.7	486.2
600	525.1	530.1	537.3	543.4	549.9	559.5	567.3	575.5	585.7
700	619.4	624.9	632.8	639.4	646.6	657.1	665.6	674.5	685.4
800	714.2	720.1	728.7	735.8	743.6	754.9	764.1	773.5	785.1
900	809.3	815.7	824.9	832.5	840.8	852.9	862.7	872.7	884.8
1000	904.7	911.5	921.3	929.4	938.2	951.1	961.5	972.0	984.6
1100	1000	1008	1018	1026	1036	1049	1060	1071	1084
1200	1096	1104	1115	1124	1134	1148	1159	1171	1184
1300	1192	1200	1212	1221	1231	1246	1258	1270	1284
1400	1289	1297	1309	1319	1329	1345	1357	1370	1384
1500	1385	1394	1406	1416	1427	1444	1456	1469	1484
1600	1482	1490	1503	1514	1526	1542	1556	1569	1584
1700	1578	1587	1601	1612	1624	1641	1655	1668	1684

Appendix A: BCMS/CMS report heading comparison

This appendix provides a comparison of reports and report headings for BCMS and CMS. The tables detail each column from each BCMS report, its corresponding column from a standard CMS report (or a database item in the CMS database or a calculation, if no corresponding column appears in a standard CMS report), and present notes on any differences between the two.

> **Important:**
> Do not compare report statistics collected from BCMS with report statistics collected from CMS. The two collection systems are different and do not operate in the same manner.

This section includes the following topics:

Summary of differences

The following are the primary differences between the BCMS report items and those in CMS:

- Names of measured entities on the switch are limited to 27 characters. On CMS, they are limited to 20 characters. (Note that both systems may truncate names to fit on some reports.)
- Almost all database items in CMS are call-based rather than interval-based. This means that almost all data for a call is recorded in the interval in which the call and any associated after-call work (ACW) completed. In BCMS, most items are recorded when the call itself completes (not following ACW), except for transfers, which are recorded when the transfer takes place, that is, when the agent pushes the Transfer button for the second time. In fact, half of the call ends with the transfer and is recorded at that point (since one of the facilities goes away on a transfer).

- The system supports “ring” state when reporting on ACD calls to the CMS. CMS tracks the time that calls spend ringing and shows an agent with a call ringing as being in the “ring” state on real-time reports. BCMS receives notification when a call is ringing at the agent telephone and puts the agent into the “Other” state in real-time reports. It does not have a “ring” state nor does it explicitly track the time calls spend ringing at agent telephones.
- CMS collects both interval-based and call-based ACW time. The interval-based ACW time includes any time in ACW not associated with a call (for example, the agent pushed the ACW button while not on an ACD call) as well as call-related ACW time. The call-based ACW time includes only ACW time associated with a call. CMS agent reports that show the time agents spent in the various work states display interval-based ACW time. CMS split and VDN reports that show average ACW time use the call-based ACW time to calculate the average.
- BCMS historical reports display the equivalent of interval-based ACW time, that is, the ACW time reported includes both call-related and non-call related ACW time. The **`monitor system`** (BCMS system status) report displays only call-related ACW time.
- The BCMS real-time agent report shows the *clock time* at which the agent entered the current work state. CMS real-time agent reports show the *elapsed time* the agent has spent in the current work state.
- CMS does not include direct agent ACD calls with split ACD calls on split reports. BCMS does include direct agent ACD calls in ACD CALLS on split reports.
- CMS records dequeues for calls that dequeue from non-primary splits in a VDN. BCMS does not display a count of dequeued calls in any reports, however dequeued calls do count as calls offered to the split and thus affect the percent within service level calculation for the split.
- BCMS reports hold time only for ACD calls. CMS reports hold time for ACD calls on split reports, but reports hold time for ACD and extension calls in agent reports.
- If you are viewing CMS reports using Supervisor, the report headings may be slightly different.

Report heading comparison tables

This section contains tables that show the differences between BCMS and CMS report headings.

BCMS agent status (real-time) report

BCMS column	Description	CMS report	CMS column/DB item	CMS notes
Split	Split number	Split Status	Split	name or number
Split Name	Split name	Split Status	Split	name or number
Calls Waiting	ACD/DA calls waiting	Split Status	Calls Waiting	ACD calls only
Oldest Call	time oldest ACD/DA call waited	Split Status	Oldest Call Waiting	time oldest ACD call waited
Staffed	agts logged into split	Split Report	Agents Staffed	-
Avail	agts available in split	Split Report	Agents Available	-
ACD	agts on ACD/ DA calls for split	Split Report	Agents ACD Calls	ACD calls only
ACW	agts in ACW for ACD/DA calls	Split Report	Agents After Call Work	-
AUX	agts in AUX for split	Split Report	Agents Aux Work	-
Extn	agents on extn calls; these agents are also counted in ACW and AUX	-	ONACWIN +ONAUXIN +ONACWOUT +ONAUXOUT	Not on standard CMS RT reports

BCMS agent status (real-time) report (continued)

BCMS column	Description	CMS report	CMS column/DB item	CMS notes
Other	agts on ACD or in ACW for another split, with calls ringing or calls on hold	Split Report	Agents Other	includes agents on DA calls
AGENT	name or extn	Agent Report	Agent Name	-
LOGIN ID	agent login ID	Agent Report	Login ID	-
EXT	agent extension	Agent Report	Extn	-
STATE	Avail, ACD, ACW, AUX, Ext In, Ext Out, Other,INIT	Agent Report	State	CMS states: AVAIL, ACDIN,ACDOUT, ACW,ACWIN, ACWOUT,AUX, AUXIN,AUXOUT, DACD,DACW,RING, UNKNOWN,OTHER
TIME	clock time agent entered state	Agent Report	Time	elapsed time in state
ACD CALLS	number in/out ACD + DA calls completed	-	ACDCALLS + DA-ACD CALLS	Not on standard CMS RT reports
EXT IN CALLS	extension in calls completed	-	ACWINCALLS+ AUXINCALLS	Not on standard CMS RT reports
EXT OUT CALLS	extension out calls completed	-	ACWOUTCALLS+ AUXOUTCALLS	Not on standard CMS RT reports

BCMS system status (real-time) report and CMS real-time split report

BCMS column	Description	CMS column/DB item	CMS notes
SPLIT	Split name or ext	Split	-
CALLS WAIT	ACD and DA calls waiting	Calls Waiting	ACD calls only
OLDEST CALL	time oldest ACD/ DA call has waited	Oldest Call Waiting	ACD calls only
AVG SPEED ANS	avg speed of ans for ACD/DA calls	Avg Speed of Answer	ACD calls only
AVAIL AGENT	avail agts	Agents Available	-
ABAND CALLS	ACD/DA calls abandoned from queue or ringing	Abandoned Calls	ACD calls only
AVG ABAND TIME	avg time for ACD/ DA calls to abandon	Avg Time to Abandon	ACD calls only
ACD CALLS	ACD/DA calls completed	Split ACD Calls	ACD calls only
AVG TALK TIME	avg talk time for ACD/DA calls	Avg Split ACD Talk Time	ACD calls only
AVG AFTER CALL	avg ACW time for ACD/DA calls for call-related ACW	-	Not on standard CMS RT reports
% IN SERV LEVL	% calls answered within service level	%Within Service Level	on Queue/Agent Summary and Call Profile repts

BCMS VDN status report and CMS VDN report

BCMS column	Description	CMS column/DB item	CMS notes
VDN NAME	VDN name or extension	VDN	name or number
CALLS WAIT	calls waiting in VDN	Calls Wait	-

BCMS VDN status report and CMS VDN report (continued)

BCMS column	Description	CMS column/DB item	CMS notes
OLDEST CALL	time oldest call has waited	Oldest Call	-
ACD CALLS	completed ACD/DA calls	ACD Calls	-
AVG SPEED ANS	avg speed of answer for ACD and connect calls	Avg Speed Answer	-
ABAND CALLS	VDN calls that abandoned	Calls Aban	-
AVG ABAND TIME	avg time for VDN calls to abandon	Aban Time	-
AVG TALK/ HOLD	avg time ACD caller spent talking and on hold	Avg ACD Talk	CMS number does not contain hold time
CONN CALLS	calls routed to telephone, attendant or annc and answered there	CONNECTCALLS	not on standard CMS RT report
FLOW OUT	calls routed to another VDN or to a trunk	VDN Flow Out	-
CALLS BUSY/ DISC	calls that executed busy or disconnect step	Busy/Disc	-
% IN SERV LEVL	% ACD and connect calls answered within service level	% Within Service Level	on VDN Call Profile rept

BCMS agent report and CMS agent summary

BCMS column	Description	CMS column/DB item	CMS notes
Agent	Agent extn or Login ID	Agent Name	login ID if no name
ACD CALLS	ACD/DA calls completed for all splits	ACD Calls	-
AVG TALK TIME	avg time talking on ACD/DA calls, all splits	Avg Talk Time	-
TOTAL AFTER CALL	Total ACW time for ACD/DA calls and non-call related ACW; includes time on extn calls	I_ACWTIME	-
TOTAL AVAIL TIME	time avail in at least one split	Agent Time Avail	-
TOTAL AUX/ OTHER	time in AUX in ALL splits and time on AUX extn calls; does include “Other” time, ringing time	Agent Time AUX	does not include time ringing, in other
EXTN CALLS	in/out extn calls completed	Extn In Calls, Extn Out Calls	CMS has two columns
AVG EXTN TIME	avg time on extn calls	Avg Extn In Talk Time, Avg Extn Out Talk Time	CMS has two columns
TOTAL TIME STAFFED	total time staffed in any split	Agent Time Staff	-
TOTAL HOLD TIME	time ACD calls on hold	HOLDTIME	ACD and personal calls

BCMS split summary and CMS split summary

BCMS column	Description	CMS column/DB item	CMS notes
Split	split number	Split	name or number
Split Name	split name or extn	Split	name or number
ACD CALLS	ACD/DA calls completed by this split	ACD Calls	ACD calls only
AVG SPEED ANS	avg speed of ans for ACD/DA calls	Avg Speed Ans	ACD calls only
ABAND CALLS	ACD/DA calls abandoned for this split	Aban Calls	ACD calls only
AVG ABAND TIME	avg time to abandon for ACD/DA calls	Avg Aban Time	ACD calls only
AVG TALK TIME	avg talk time for ACD/DA calls	Avg Talk Time	ACD calls only
TOTAL AFTER CALL	total ACW time for ACD/DA calls and non-call related ACW	I_ACWTIME	for ACD calls and non-call related ACW
FLOW IN	calls split accepted as coverage pt, or call-forwarded (non-vectoring); calls answered by non-primary split (vectoring). Must have outflowed from a BCMS-measured split.	Flow In	-
FLOW OUT	calls split extends to its coverage pt, which call-forward out or are answered via call pickup (non-vectoring); calls that dequeue (and are not answered) from primary splits queue (vectoring)	Flow Out	-
TOTAL AUX/ OTHER	time agents spent in AUX, including “Other” time	I_AUXTIME	other time not included

BCMS split summary and CMS split summary (continued)

BCMS column	Description	CMS column/DB item	CMS notes
AVG STAFF	avg # people staffed during period	Avg Pos Stf	-
% IN SERV LEVL	% calls answered within service level	% Within Service Level	on Split Status report

BCMS trunk group summary and CMS trunk group summary report

BCMS column	Description	CMS column/DB item	CMS notes
Group	trunk group number	Trunk group	name or number
Group Name	trunk group name	Trunk group	name or number
Number of Trunks	trunks in group	Number of trunks	-
INCOMING CALLS	incoming calls carried	Inbound Calls Carr	-
INCOMING ABAND	incoming calls abandoned	Inbound Calls Aban	-
INCOMING TIME	avg holding time, incoming calls	Inbound Avg Trk Holding Time	-
INCOMING CCS	total holding time in CCS, incoming calls	Inbound Total CCS	-
OUTGOING CALLS	outgoing calls carried	Outbound Calls Carr	-
OUTGOING COMP	outgoing calls answered	Outbound Far End Comp	-
OUTGOING TIME	avg holding time, outgoing calls	Outbound Avg Trk Holding Time	-
OUTGOING CCS	total holding time in CCS, outgoing calls	Outbound Total CCS	-
% ALL BUSY	% time all trunks in tk gp busy	% Time All Trunks Busy	-
% TIME MAINT	% time trunks busied out for maint	% Time Maint Busy	-

BCMS VDN summary and CMS VDN report

BCMS column	Description	CMS columns	CMS notes
VDN Ext	VDN extension	VDN	name or number
VDN Name	VDN name or extension	VDN	name or number

BCMS VDN summary and CMS VDN report (continued)

BCMS column	Description	CMS columns	CMS notes
CALLS OFFERED	calls that used the VDN	Calls Offered	-
ACD CALLS	ACD/DA calls answered by agent; for “queue to main” and “check backup” only	Calls Ans	includes calls from “queue to main”, “check backup”, “route to” split, “messaging split” and “adjunct routing”
AVG SPEED ANS	avg speed ans for ACD/DA calls	Avg Speed Ans	-
ABAND CALLS	calls abandoned from VDN from “queue to main” and “check backup” only	Calls Aban	includes calls from “queue to main”, “check backup”, “route to” split, “messaging split” and “adjunct routing”
AVG ABAND TIME	avg time in VDN before abandon	Avg Aban Time	-
AVG TALK/ HOLD	avg talk time on ACD/ DA calls, including time on hold	Avg Talk Time	excludes time on hold
CONN CALLS	calls routed to telephone, attendant, announcement, call pickup, or messaging split, and answered there	Other Calls Connect	-
FLOW OUT	calls that execute “route to”, “messaging split” or “adjunct routing” successfully	VDN Flow Out	calls that route to external or VDN only
CALLS BUSY/ DISC	calls forced busy or disconnected	Calls Forced Busy, Calls Forced Disc	-
% IN SERV LEVL	% ACD and connect calls answered within service level	% Within Service Level	on VDN Status rept

Glossary

abandoned call	An incoming call in which the caller hangs up before the call is answered.
ACD	See Automatic Call Distribution (ACD).
ACD agent	See agent.
ACW	See after-call work (ACW) mode.
access code	A dial code used to activate or cancel a feature, or access an outgoing trunk.
ACD work mode	See work mode.
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.
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).
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.
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.

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 Call Distribution (ACD)	A feature that answers calls and, 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.
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.
BCMS	Basic Call Management System
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 vector	A set of up to 32 vector commands to be performed for an incoming or internal call.
call work code	A number entered by ACD agents to record the occurrence of customer-defined events (such as account codes, social security numbers, or telephone numbers) on ACD calls.
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, it is said to have been busy for 36 CCS. See also Erlang.
CMS	See Call Management System (CMS).
CWC	See call work code.

direct agent calling	An Expert Agent Selection (EAS) capability that makes it possible for a caller to reach the same agent every time and still include the call in the management tracking of the call center. This is ideal for claims processing where a client need to speak with the agent handling the claim. This flexibility ensures a high level of customer service without reducing management control.
domain	VDNs, ACD splits, and telephones. The VDN domain is used for active-notification associations. The ACD-split domain is for active-notification associations and domain-control associations. The telephone domain is used for the domain-control associations.
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.
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.
ICM	Inbound Call Management
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.
LDN	Listed directory number
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.
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.
OQT	Oldest queued time

other split	The work state that indicates that an agent is currently active on another split call, or in ACW for another split.
POE	Processor occupancy evaluation
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.
Redirection on No Answer	An optional feature that redirects an unanswered ringing ACD call after an administered number of rings. The call is redirected back to the agent.
report scheduler	Software that is used with the system printer to schedule the days of the week and time of day that the reports are to be printed.
split	A group of ACD agents.
split number	The split 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.
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.
stroke counts	A method used by ACD agents to record up to nine customer-defined events per call when CMS is active.
system administrator	The person who maintains overall customer responsibility for system administration. Generally, all administration functions are performed from a 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.

UCD Uniform call distribution

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.

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 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.

work state

Index

C

D

E

F

H

I

L

M

N

P

R

S

T

V