

Avaya Communication Manager Advanced Administration Quick Reference

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Welcome

Why another instruction book?

You have told us that you want step-by-step instructions on advanced administration tasks for Avaya Communication Manager. This book contains the information you need for advanced administration for your telephone system.

This book contains instructions for completing tasks that were not covered in the *Avaya Communication Manager Basic Administration Quick Reference*, 03-300363. Some steps may vary between the different versions of the software, but the instructions will help you through the more advanced operations.

We wrote this book for you!

Use this book if you are a system administrator. Use it before you attend training, and take it with you to your class. Mark it up, make notes in it, and use it daily even after you complete training.

This book is for you if:

- You are a new administrator taking over from someone else.
- You are filling in for your company's regular administrator.
- You want to refresh your memory.

What information is in this book?

The *Advanced Administration Quick Reference* is divided into sections to help you find information about advanced topics.

Managing trunks describes the different types of trunks and how to add a trunk group.

Setting up night service explains how to set up night service and explains how different types of night service work together.

Managing announcements explains how to add, record, change, delete, and back up announcements.

Managing hunt groups describes how to set up hunt groups. It explains how calls to a hunt group are handled and shows you different call distribution methods.

Managing vectors and VDNs provides an overview of vectors and Vector Directory Numbers (VDN). It gives you basic instructions for writing simple vectors.

Using reports describes how to generate, list, print, and schedule some of the basic reports on your system. It also explains when to use some common reports and how to interpret the report information.

Understanding call centers gives an overview of call centers.

How to use this book

Become familiar with the following terms and conventions. They help you use this book with Communication Manager.

- A “screen” is the display of fields and prompts that appear on a terminal monitor. See Figure 1: Trunk Group screen on page 23 for an example of a screen and how it is shown in this book.
- Avaya uses the term “telephone” in this book. Other books might refer to telephones as voice terminals, stations, or endpoints.
- Keys and buttons are printed in a bold font: **Key**.
- Titles of screens are printed in a bold font: **Screen Name**.
- Names of fields are printed in a bold font: **Field Name**.
- Text (other than commands) that you need to type into a field are printed in a bold font: **text**.
- Commands are printed in a bold constant width font: **`command`**.
- Variables are printed in a bold constant width italic font: ***`variable`***.
- We show complete commands in this book, but you can use an abbreviated version of the command. For example, instead of typing **`list configuration station`**, you can type **`list config sta`**.
- If you need help constructing a command or completing a field, remember to use **Help**.
  - When you press **Help** at any point on the command line, the system displays a list of available commands.
  - When you press **Help** with your cursor in a field on a screen, the system displays a list of valid entries for that field.

- Messages that the system displays are printed in a bold font: **system message**.
- To move to a certain field on a screen, you can use the **Tab** key, directional arrows, or the **Enter** key on your keyboard.
- If you use terminal emulation software, you need to determine what keys correspond to **Enter**, **Return**, **Cancel**, **Help**, and **Next Page** keys.
- We show commands and screens from the newest release of Communication Manager. Substitute the appropriate commands for your system and see the manuals you have available.
- The status line or message line can be found near the bottom of your monitor. This is where the system displays messages for you. Check the message line to see how the system responds to your input. Write down the message if you need to call the helpline.
- When a procedure requires you to press **Enter** to save your changes, the screen clears. The cursor returns to the command prompt. The message line shows "**command successfully completed**" to indicate that the system accepted your changes.

Admonishments

Admonishments that might appear in this book have the following meanings:

Note:
A note calls attention to neutral information or positive information that supplements the main text. A note also calls attention to valuable information that is independent of the main text.



Important:

An important note calls attention to situations that can cause serious inconvenience.



Tip:

A tip calls attention to information that helps you apply the techniques and the procedures that the text describes. A tip can include keyboard shortcuts, or alternative methods that might not be obvious.



CAUTION:

A caution statement calls attention to situations that can result in harm to software, loss of data, or an interruption of service.



WARNING:

A warning statement calls attention to situations that can result in harm to hardware or equipment.



DANGER:

A danger statement calls attention to situations that can result in physical injury to yourself or to other people.



SECURITY ALERT:

A security alert calls attention to situations that can increase the potential for toll fraud or other unauthorized use of your telecommunications system.



ELECTROSTATIC ALERT:

An electrostatic alert calls attention to situations that can result in damage to electronic components from electrostatic discharge (ESD).

Systems, circuit packs, and media modules

- The word “system” is a general term encompassing all references to an Avaya media server running Communication Manager.
- Circuit pack codes (for example, TN780 or TN2182B) are shown with the *minimum acceptable* alphabetic suffix (like the “B” in the code TN2182B). Generally, an alphabetic suffix higher than that shown is also acceptable. However, not every *vintage* of either the minimum suffix or a higher suffix code is necessarily acceptable. A suffix of “P” means that firmware can be downloaded to that circuit pack.
- The term “cabinet” refers to the external casing (shell) of an MCC1, SCC1, CMC1, G600, or G650 Media Gateway. Circuit packs are installed in the cabinet in a specific carrier (row), and in a specific slot within that carrier.
- The designation “***UUCSSpp***” refers to the location (address) of a circuit pack in cabinet-carrier-slot-port order. In this address designation, ***UU*** is the cabinet number, ***C*** is the carrier letter, ***SS*** is the slot number of a specific circuit pack, and ***pp*** (if applicable) is a specific port on the circuit pack. A sample address for port 4 on a circuit pack on an MCC1 Media Gateway might look like this: 02A0704.
- A G350 or G700 Media Gateway uses media modules instead of circuit packs. The media module address is designated as ***XXX*****V*****Spp***, where ***XXX*** is the administered number of the media gateway, **V*****S*** is the slot number of a specific media module location on the media gateway, and ***pp*** (if applicable) is a specific port on the media module. The **V** is not a variable and needs to be included in the command exactly where shown. A sample address for port 4 in slot V3 on an MM711 Media Module on a G700 Media Gateway might look like this: 002V304. If an S8300 Media Server is installed in a G700 Media Gateway, it must be installed in slot number V1.

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Related books

There are two companions to this book:

- The *Avaya Communication Manager Basic Administration Quick Reference*, 03-300363
- The *Avaya Communication Manager Basic Diagnostics Quick Reference*, 03-300365

The *Administrator Guide for Avaya Communication Manager*, 03-300509, explains system features and interactions in greater detail. The Administrator Guide provides a reference how to plan, operate, and administer your system.

Note:
Prior to April 1997, this same information was in two separate books: the *DEFINITY Implementation* and the *DEFINITY Feature Description* books.

We also refer to the following books:

- *Overview for Avaya Communication Manager*, 03-300468
- *Reports for Avaya Communication Manager, 555-233-505*
- *Avaya Communication Manager Call Center Software Basic Call Management System (BCMS) Operations*, 07-300061
- *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
- *Installation for Adjuncts and Peripherals for Avaya Communication Manager*, 555-233-116
- *Avaya Products Security Handbook*, 555-025-600

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You can also access the following services in the USA. You might need to purchase an extended service agreement to use some of these services. Contact your local Avaya authorized dealer for any additional help and questions.

Avaya Communication Manager Helpline (for help with feature administration and system applications)	1 800 225 7585
Avaya National Customer Care Center Support Line (for help with maintenance and repair)	1 800 242 2121
Avaya Toll Fraud Intervention	1 800 643 2353
Avaya Corporate Security	1 800 822 9009

1: Managing trunks

This section provides an overview of trunks and tells you how to add trunk groups to your system.

Understanding trunks

Trunks carry telephone signals from one place to another. For example, one type of trunk carries telephone signals from your system to the central office (CO).

Groups of trunks perform specific functions. Use the following table to help determine which types of trunk groups your company uses.

trunk group	description
Access	Use access trunks to connect satellite systems to the main system in Electronic Tandem Networks (ETN). Access trunks do not carry traveling class marks (TCM) and thus allow satellite callers unrestricted access to out-dial trunks on the main system.
APLT	Advanced Private Line Termination (APLT) trunks are used in private networks. APLT trunks allow inband ANI.
CAMA	Centralized Automatic Message Accounting (CAMA) trunks route emergency calls to the local community's Enhanced 911 systems.

trunk group	description
CO	Central Office (CO) trunks typically connect your system to the local central office, but they can also connect adjuncts such as external paging systems and data modules.
CPE	Customer Premise Equipment (CPE) trunks connect adjuncts, such as pagers and announcement or music sources, to the system.
DID	Direct inward dialing (DID) trunks connect incoming calls directly to internal extensions without going through an attendant or some other central point.
DIOD	Direct inward and outward dialing (DIOD) trunks connect incoming and outgoing calls directly to your system.
DMI-BOS	Digital multiplexed interface bit-oriented signaling (DMI-BOS) trunks connect a system to a host computer, or one system to another system.
FX	Foreign exchange (FX) trunks connect calls to a non-local central office as if it were a local central office. Use FX trunks to reduce long distance charges if your organization averages a high volume of long-distance calls to a specific area code.
ISDN	Integrated Services Digital Network (ISDN) trunks allow voice, data, video, and signaling information to be sent with calls. There are two types of ISDN trunks: ISDN-Basic Rate Interface (ISDN-BRI) connect telephones, personal computers, and other desktop devices to the system. ISDN-Primary Rate Interface (ISDN-PRI) connect equipment such as systems to the network, and acts as an interface between equipment such as systems and computers.

trunk group	description
RLT	Release-link trunks (RLT) use Centralized Attendant Service (CAS) to connect remote systems to attendants who are at a central location.
Tandem	Tandem trunks are a type of tie trunk used for large networks.
Tie	Tie trunks connect a system to a CO, or two systems together in a private network.
WATS	Wide Area Telecommunications Service (WATS) trunks allow calls to certain areas for a flat-rate charge. Use WATS trunks to reduce long-distance bills when your company places many calls to a specific geographical area in North America.

Adding trunk groups

Occasionally, your company's telephone requirements change and you need to add new trunk groups to your system. For example, maybe your company is expanding and you must have additional two-way access between your system and your local telephone company or CO. After doing some research, you decide that you need to add another CO trunk.

Once you decide that you want to add a new trunk, contact your vendor. Depending on the type of trunk you want to add, the vendor may be your local telephone company, a long distance provider, or some other service provider.

When you talk to your vendor, they'll want to know what kind of service you want to add. In our example, request CO service.

The vendor should confirm the type of signal you want and provide you with a circuit identification number for the new trunk. Be sure to record any vendor-specific ID numbers or specifications in case you ever have any problems with this trunk.

Note:
Remember to keep records of any changes you make to the system for future reference.

Once you've ordered your new service and have gathered all the information associated with the new trunk, you need to configure the system to recognize the new trunk group.

Before you start

Before you can administer any trunk group, you must have one or more circuit packs of the correct type with enough open ports to handle the number of trunks you need to add. To find out what circuit packs you need, see the *Hardware Guide for Avaya Communication Manager.*

To add a new trunk-group:

1. Type **`add trunk-group next`**. Press **Enter**.

   The system displays the **Trunk Group** screen (Figure 1: Trunk Group screen on page 23).

   The system assigns the next available trunk group number to this group. In our example, we are adding trunk group 5.

Figure 1: Trunk Group screen

```
 TRUNK GROUP
Group Number: 5                    Group Type: co            CDR Reports: y
  Group Name: outside calls              COR: 85 TN: 1         TAC:647
   Direction: two-way        Outgoing Display? n
 Dial Access: n                Busy Threshold: 99          Night Service: 1234
Queue Length: 0           Country: 1                Incoming Destination: _____
   Comm Type: voice                Auth Code? n   Digit Absorbtion List: _____
   Prefix-1?: y                  Trunk Flash? n         Toll Restricted? y
TRUNK PARAMETERS
         Trunk Type: loop start
 Outgoing Dial type: tone                                  Cut Through? n
  Trunk Termination: rc                        Disconnect Timing(msec): 500
        Auto Guard?: n       Call Still Held? n     Sig Bit Inversion: none
  Analog Loss Group:                              Digital Loss Group:
                                Trunk Gain: high
Disconnect Supervision - In? y   Out? n
Answer Supervision Timeout: 10             Receive Answer Supervision? n
```

2. In the **Group Type** field, type the type of trunk you want to add. In our example, type **co**, which is also the default.

   If you select a different trunk type, such as DID, the system changes the screen to show only those fields that apply to the type of trunk-group you are adding.

3. Type a name to identify this trunk group in the **Group Name** field.

   In our example, type **outside calls**.

4. In the **COR** field, assign a class of restriction (COR) that is appropriate for the calling permissions administered on your system. This field controls what users can make and receive calls over this trunk group.

   In our example, type **85**.

5. In the **TAC** field, type the code you want to use to access the new trunk group.

   In our example, type **647**.

6. In the **Direction** field, indicate the call-flow direction.

   For our example, leave the default of **two-way**.

7. If you want to direct calls to a night extension, type the extension number in the **Night Service** field.

   In our example, direct night calls to extension **1234**.

8. In the **Comm Type** field, type the type of communication that you want the new trunk to use.

   In our example, type **voice**.

9. In the **Trunk Type** field, type **loop start**.

   This field tells the system how the calls on this trunk will be sent or received. Your vendor should know what trunk type you can use to complete this field.

10. Click **Next** until you see the **Group Member Assignments** section (Figure 2: Trunk Group screen on page 24).

    Different fields appear on this screen depending on the configuration of your system.

Figure 2: Trunk Group screen

```
                              TRUNK GROUP
                       Administered Members (min/max): xxx/yyy
                           Total Administered Members: xxx

GROUP MEMBER ASSIGNMENTS
     Port       Code Sfx  Name          Night       Mode     Type  Ans Delay
 1: 1B1501___             5211________  __________  ________ _____ _____
 2: 1B1523___             5212________  __________  ________ _____ _____
 3: 1B1601___             5213________  __________  ________ _____ _____
 4: 1B1623___             5214________  __________  ________ _____ _____
 5: 1B1701___             5215________  __________  ________ _____ _____
 6: __________            ____________  __________  ________ _____ _____
 7: __________            ____________  __________  ________ _____ _____
 8: __________            ____________  __________  ________ _____ _____
 9: __________            ____________  __________  ________ _____ _____
10: __________            ____________  __________  ________ _____ _____
11: __________            ____________  __________  ________ _____ _____
12: __________            ____________  __________  ________ _____ _____
13: __________            ____________  __________  ________ _____ _____
14: __________            ____________  __________  ________ _____ _____
15: __________            ____________  __________  ________ _____ _____
```

11. In the **Port** field, type the port number of the physical connection for each member you are adding to the trunk group.
12. In the **Name** field, type the circuit ID or telephone number for each member.

    This information is very helpful for tracking your system or troubleshooting problems, but the fields need to be updated whenever the information changes.
13. Press **Enter** to save your changes.

Managing trunks

2: Setting up night service

You can use night service to direct calls to an alternate location when the primary answering group is not available. For example, you can administer night service so that anyone in your marketing department can answer incoming calls when the attendant is at lunch or has left for the day.

Once you administer night service to route calls, your end-users merely press a button on the console or a feature button on their telephones to toggle between normal coverage and night service.

There are five types of night service:

- Hunt group night service — directs hunt group calls to a night service destination
- Night station night service — directs all incoming trunk calls to a night service destination
- Night console night service — directs all attendant calls to a Night or Day/Night console
- Trunk group night service — directs incoming calls to individual trunk groups to a night service destination
- Trunk Answer from Any Station (TAAS) — directs incoming attendant calls and signals a bell or buzzer to alert other employees that they can answer the calls

Setting up night service for hunt groups

You can administer hunt group night service if you want to direct hunt group calls to a night service destination. As an example, say your helpline on hunt group 3 does not answer calls after 6:00 p.m. (18:00). When customers call after hours, you would like them to hear an announcement that asks them to try their call again in the morning.

To set up night service for your helpline, you need to record the announcement (in our example, the announcement is on extension 1234) and then modify the hunt group to send calls to this extension.

To administer hunt group 3 night service:

1. Type **change hunt-group *3***. Press **Enter**.

   The system displays the **Hunt Group** screen for hunt group 3 (Figure 3: Hunt Group screen on page 28).

Figure 3: Hunt Group screen

```
                                HUNT GROUP
Group Number: 3                                      ACD: n
               Group Name: Accounting                              Queue: y
          Group Extension: 2011                                  Vector: n
               Group Type: ucd-mia                     Coverage Path: 1
                       TN: 1                 Night Service Destination: 1234
                      COR: 1                           MM Early Answer: n
             Security Code:
      ISDN Caller Display:

              Queue Length: 4
  Calls Warning Threshold:                        Port:
   Time Warning Threshold:                        Port:
```

2. Type **1234** in the **Night Service Destination** field.

   The destination can be an extension, a recorded announcement extension, a vector directory number, a hunt group extension, or **attd** if you want to direct calls to the attendant.

3. Press **Enter** to save your changes.

Once you modify the hunt group, you also need to assign a `hunt-ns` feature button to a hunt group telephone, so that the users in the hunt group can activate and deactivate night service.

Setting up night station service

You can use night station service if you want to direct incoming trunk calls, DID-LDN (direct inward dialing-listed directory number) calls, or internal calls to the attendant (dialed ‘0’ calls) to a night service destination.

As an example, say your attendant, who answers extension (List Directory Number or LDN) 8100, usually goes home at 6:00 p.m. When customers call extension 8100 after hours, you would like them to hear an announcement that asks them to try their call again in the morning.

To set up night station service, you need to record the announcement (in our example, it is recorded at announcement extension 1234).

All trunk groups are routed through the attendant direct to this night service destination unless you assign trunk group night service to the individual trunk group. See Setting up trunk group night service on page 31.

To set up night station service:

1. Type **`change listed-directory-numbers`**. Press **Enter**.

   The system displays the **Listed Directory Numbers** screen (Figure 4: Listed Directory Numbers screen on page 30).

Figure 4: Listed Directory Numbers screen

```
                         LISTED DIRECTORY NUMBERS
      Ext         Name                                  TN
   1: 8100        attendant 8100
   2:
   3:
   4:
   5:
   6:
   7:
   8:
   9:
  10:
                                        Night Destination: 1234
```

2. Type **1234** in the **Night Destination** field.

   The destination can be an extension, a recorded announcement extension, a vector directory number, or a hunt group extension.

3. Press **Enter** to save your changes.

4. Type **`change console-parameters`**. Press **Enter**.

   The system displays the **Console Parameters** screen (Figure 5: Console Parameters screen on page 30).

Figure 5: Console Parameters screen

```
                              CONSOLE PARAMETERS
        Attendant Group Name: OPERATOR
                         COS: 1                                  COR: 1
      Calls in Queue Warning: 5                    Attendant Lockout? y
                         CAS: none
                                                Night Service Act. Ext.:1234
                IAS (Branch)? n                 IAS Tie Trunk Group No.:
        IAS Att. Access Code:                     Alternate FRL Station:
             Backup Alerting? n        DID-LDN Only to LDN Night Ext? n
```

5. In the **DID-LDN Only to LDN Night Ext?** field, type **n**.

6. Press **Enter** to save your changes.

After you set up night station service, have the attendant use the night console button to activate and deactivate night service.

Setting up trunk group night service

You can use trunk group night service if you want to direct individual trunk groups to night service. The system redirects calls to the trunk group to the group's night service destination.

Trunk group night service overrides night station service. As an example, say that you administer trunk group night service, and then your attendant activates night station service. In this case, calls to the trunk group use the trunk night service destination, rather than the station night service destination.

Let us direct night calls for trunk group 2 to extension 1245.

To set trunk group night service:

1. Type **`change trunk-group`** ***2***. Press **Enter**.

   The system displays the **Trunk Group** screen (Figure 6: Trunk Group screen on page 32).

Figure 6: Trunk Group screen

```
                                TRUNK GROUP

Group Number: 2                   Group Type: co            CDR Reports: y
  Group Name: outside calls              COR: 1       TN: 1         TAC:647
   Direction: two-way        Outgoing Display? n
 Dial Access: n                Busy Threshold: 99          Night Service: 1245
Queue Length: 0           Country: 1               Incoming Destination: ____
   Comm Type: voice                Auth Code? n   Digit Absorbtion List: ____
   Prefix-1?: y                  Trunk Flash? n         Toll Restricted? y
TRUNK PARAMETERS
         Trunk Type: loop start
 Outgoing Dial type: tone                                 Cut Through? n
  Trunk Termination: rc                       Disconnect Timing(msec): 500
        Auto Guard?: n       Call Still Held? n     Sig Bit Inversion: none
  Analog Loss Group:                          Digital Loss Group:
                                Trunk Gain: high
Disconnect Supervision - In? y   Out? n
Answer Supervision Timeout: 10             Receive Answer Supervision? n
```

2. Type **1245** in the **Night Service** field.

   The destination can be a night service extension, a recorded announcement extension, a vector directory number, a hunt group extension, a terminating extension group, or **attd** if you want to direct the call to the attendant.

3. Press **Enter** to save your changes.

Setting trunk answer from any station

There may be situations where you want everyone to be able to answer calls when the attendant is away. Use Trunk Answer from Any Station (TAAS) to configure the system so that it notifies everyone when calls are ringing. Then, you can give users the TAAS feature access code so they can answer these calls.

When the system is in night service mode, attendant calls redirect to an alerting device such as a bell or a buzzer. This lets other people in the office know when they should answer the telephone.

Note:
If no one answers the call, the call will not redirect to night service.

Before you start

You need a ringing device and 1 port on an analog line circuit pack. See the *Hardware Guide for Avaya Communication Manager* for more information on the circuit pack.

Let us define a feature access code (we'll use 71) and configure the alerting device for trunk answer any station.

To set the feature access code for TAAS:

1. Type **`change feature-access-codes`**. Press **Enter**.

   The system displays the **Feature Access Code (FAC)** screen.

2. Click **Next** until you see the **Trunk Answer Any Station Access Code** field (Figure 7: Feature Access Code (FAC) screen on page 33).

Figure 7: Feature Access Code (FAC) screen

```
                        FEATURE ACCESS CODE (FAC)
     Per Call CPN Unblocking Code Access Code: #27
                 Priority Calling Access Code: #29
                         Program Access Code: #30
      Refresh Terminal Parameters Access Code: #31
            Remote Send All Calls Activation: #91     Deactivation: #92
             Self Station Display Activation:
                   Send All Calls Activation: #32     Deactivation: *32
       Station Firmware Download Access Code: #97
                     Station Lock Activation:         Deactivation:
     Station Security Code Change Access Code: #34
             Station User Admin of FBI Assign:              Remove:
  Station User Button Ring Control Access Code:
              Terminal Dial-Up Test Access Code: #35
Terminal Translation Initialization Merge Code: #36  Separation Code: *36
            Transfer to Voice Mail Access Code: #37
          Trunk Answer Any Station Access Code: 71
             User Control Restrict Activation: #39     Deactivation: *39
  Voice Coverage Message Retrieval Access Code: #40
 Voice Principal Message Retrieval Access Code: #41
```

3. In the **Trunk Answer Any Station Access Code** field, type **71**.
4. Press **Enter** to save your changes.

Once you set the feature access code, determine where the external alerting device is connected to the system (we'll use port 01A0702).

To set up external alerting:

1. Type **`change console-parameters`**. Press **Enter**.

   The system displays the **Console Parameters** screen (Figure 8: Console Parameters screen on page 34).

Figure 8: Console Parameters screen

```
                          CONSOLE PARAMETERS

  Attendant Group Name: Operator
                  COS: 0                                  COR: 0
Calls in Queue Warning: 5                  Attendant Lockout? y
 EXT Alert Port (TAAS): 01A0702
                  CAS: none
                                       Night Service Act. Ext.:
         IAS (Branch)? n               IAS Tie Trunk Group No.:
  IAS Att. Access Code:                  Alternate FRL Station:
       Backup Alerting? n       DID-LDN Only to LDN Night Ext? n
```

2. In the **EXT Alert Port (TAAS)** field, type **01A0702**.

   Use the port address assigned to the external alerting device.
3. Press **Enter** to save your changes.

How do night service types interact?

Let us look at an example of how several types of night service might be used in one company.

Assume that you already administered the following night service settings:

- night station night service redirects to extension **3000** and **DID-LDN only to LDN Night Ext** is set to **n**
- **EXT Alert Port (TAAS)** field is not defined
- Trunk group 4 redirects to extension **2000**

Let us look at how calls for this company are directed after hours:

call type	directs to
An LDN call on a DID trunk	extension 3000
A call on trunk group 4	extension 2000
An internal call to ‘0’	extension 3000
A call that redirects to the attendant through a coverage path.	the attendant queue

Setting up night service

3: Managing announcements

This section explains how to use announcements effectively, and how to add, change, delete, and back up your announcements.

What is an announcement?

An announcement is the recorded message a caller hears while the call is in a queue. An announcement is often used in conjunction with music.

Three types of announcements are:

- delay announcement — explains the reason for the delay and encourages the caller to wait.
- forced announcement — explains an emergency or service problem. Use when you anticipate a large number of calls about a specific issue.
- information announcement — gives the caller instructions on how to proceed, information about the number called, or information that the caller wants.

Announcements are most effective when they are:

- short, courteous, and to-the-point
- played for calls waiting in queue

- spaced close together when a caller on hold hears silence
- spaced farther apart when a caller on hold hears music or ringing

Music on Hold can be externally connected or recorded. For example, music on hold might be an externally connected and continously playing music source such as a radio station. A package of professionally-recorded music is available from Avaya. Contact your Avaya representative for more information. Music sources can be grouped under the Locally Sourced Music feature to improve audio quality.

Announcements can be either integrated or external. Integrated announcements reside on a circuit pack in the system carrier, or embedded within a G250, G350, or G700 Media Gateway. Integrated announcements can be grouped under the Locally Sourced Announcements feature to improve audio quality. External announcements are stored and played back from adjunct equipment.

For more information on external announcements, see the *Avaya MultiVantage™ Call Center Software Guide to ACD Call Centers*, 555-230-716, and the *Installation for Adjuncts and Peripherals for Avaya Communication Manager*, 555-233-116.

Note:

Because instructions might be slightly different for different system configurations, portions of this chapter are divided into two groups: **MCC1, SCC1, CMC1, G600, or G650 Media Gateways**, and **G250, G350, or G700 Media Gateways.**

Also see the *Installation for Adjuncts and Peripherals for Avaya Communication Manager*, 555-233-116, and the *Administrator Guide for Avaya Communication Manager*, 03-300509.

Adding announcements

You first need to tell the system you want an announcement before you can record it. You assign an extension for each announcement so the system can identify the announcement. Each extension that you choose cannot be in use, and each must conform to your dial plan.

Note:

Use the **change announcement** command to administer an announcement extension. For more information, see the *Administrator Guide for Avaya Communication Manager*, 03-300509.

Voice Announcement over LAN (VAL)

Voice Announcement over LAN (VAL) allows you to share, backup, and restore announcement files over your local area network.

MCC1, SCC1, CMC1, G600, or G650 Media Gateways: - You can record announcements on a downloadable VAL circuit pack (TN2501AP), or for S8100 Media Server only, on the Integrated Scalable Speech Processor Application (ISSPA) circuit pack.You can also use TN750, TN750B, and TN750C announcement circuit packs to record announcements on your system. You can have only one TN750 or TN750B per system, but you can use one TN750B with many TN750C and/or TN2501AP (VAL) circuit packs.

G250, G350, or G700 Media Gateways: - You can record announcements through the embedded Voice Announcement over LAN (VAL) feature, hereafter referred to as “Virtual VAL” or “V VAL”.

As an example, say we have calls coming into unassigned DID extensions. Let us record a general message to tell these callers to dial the company’s main number.

We’ll assign the announcement to extension 1234.

MCC1, SCC1, CMC1, G600, or G650 Media Gateways: - In this example, use the integrated announcement circuit pack located on 01B18. (See Systems, circuit packs, and media modules on page 14 for an explanation of the circuit pack address.)

Note:

Use the **`display integrated-annc-boards`** command to find the cabinet, carrier, and slot addresses of your announcement circuit packs. The **INTEGRATED ANNOUNCEMENT BOARD** screen lists the location and the type, as well as showing the number of recordings and number of seconds (at the administered rate) left on each circuit pack.

G250, G350, or G700 Media Gateways: - For VVAL, use 012V9 as an example. (See Systems, circuit packs, and media modules on page 14 for an explanation of the media module address.)

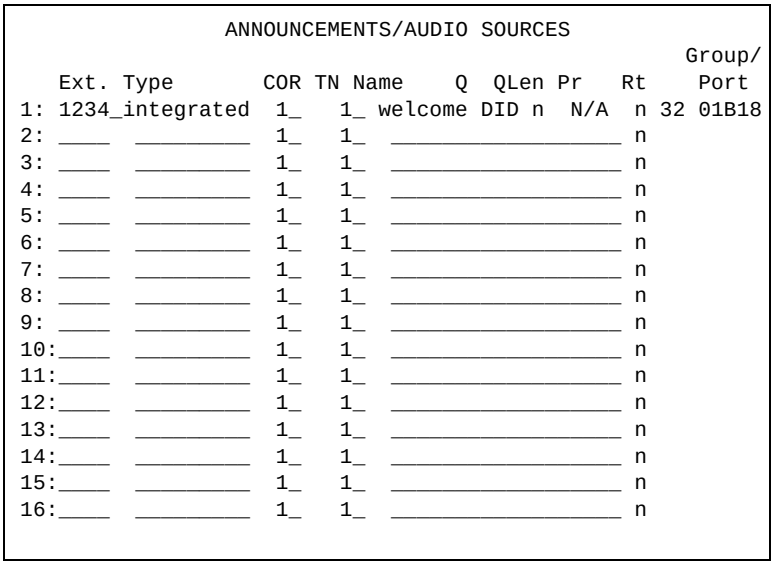
Our example explains how to add an integrated announcement, but other types of announcements are available. See the *Administrator Guide for Avaya Communication Manager*, 03-300509, for more information about other announcement types, especially how to manage VAL announcements using the SAT and using FTP.

To add an announcement extension 1234:

1. Type **`change announcements`**. Press **Enter**.

   The system displays the **Announcements/audio Sources** screen (Figure 9: Announcements/Audio Sources screen on page 41).

Figure 9: Announcements/Audio Sources screen



```
                    ANNOUNCEMENTS/AUDIO SOURCES
                                                                  Group/
   Ext. Type        COR TN Name     Q  QLen Pr    Rt     Port
1: 1234_integrated  1_   1_ welcome DID n  N/A   n 32 01B18
2: ____  _________  1_   1_  ___________________ n
3: ____  _________  1_   1_  ___________________ n
4: ____  _________  1_   1_  ___________________ n
5: ____  _________  1_   1_  ___________________ n
6: ____  _________  1_   1_  ___________________ n
7: ____  _________  1_   1_  ___________________ n
8: ____  _________  1_   1_  ___________________ n
9: ____  _________  1_   1_  ___________________ n
10:____  _________  1_   1_  ___________________ n
11:____  _________  1_   1_  ___________________ n
12:____  _________  1_   1_  ___________________ n
13:____  _________  1_   1_  ___________________ n
14:____  _________  1_   1_  ___________________ n
15:____  _________  1_   1_  ___________________ n
16:____  _________  1_   1_  ___________________ n
```

2. In the **Ext** field, type **1234**.
3. In the **Type** field, type **integrated**.
4. In the **Name** field, type **unassigned DID**.
5. In the **Pro** (protected) field, type **n**.

   If you type **n**, users with console permissions can change the announcement. If you type **y**, the announcement cannot be changed.
6. In the **Rt** (rate) field, type **32** for TN750 circuit packs, or **64** for TN2501AP circuit packs.

7. In the **Group/Port** field, type **01B18**.

Note:
For S8100 Media Server, use **1A13** as an example. For G250, G350 or G700 Media Gateways, use **012V9** as an example.

8. Press **Enter** to save your work.

VAL Manager

VAL Manager is a standalone application that allows you to copy announcement files and announcement information to and from a TN2501AP announcement circuit pack (or VVAL) over a LAN connection.

VAL Manager offers the following basic features:

- Simplified administration to add, change, and remove announcement information
- The ability to back up and restore announcement files and information
- The ability to view the status of announcements on the TN2501AP circuit pack

Contact your Avaya representative to obtain VAL Manager.

Recording announcements

MCC1, SCC1, CMC1, G600, or G650 Media Gateways: - You need to have special circuit packs (TN750, TN750B, TN750C, or TN2501AP) to record announcements.

G250, G350, or G700 Media Gateways: - The announcement feature is embedded within the branch media gateways, and no special media module is required.

You can record announcements using any telephone or console whose Class of Service (COS) provides console permissions. You can use the **`display cos`** command to review COS permissions.

You also need the announcement feature access code for your system. Use the **`display feature-access-codes`** command to find the announcement access code.

The announcement extension must be set up before you record. Use the **`list station data-module`** command to determine the announcement extension.

In our example, use your telephone to record the announcement for the unassigned DIDs to extension 1234. Our announcement access code is *56.

To record the announcement:

1. Dial the announcement access code.

   In our example, we'll dial ***56**.

   - If you hear dial tone, go to step 2.
   - If you hear a fast busy signal, hang up and redial the FAC and extension every 45 seconds until you hear dial tone.

2. Dial the announcement extension.

   In our example, we'll dial **1234**. You hear dial tone.

3. Dial **1** to begin recording.

   - If you hear a beep or stutter tone, begin speaking. If the circuit pack memory becomes full during recording, the system drops your connection and does not retain the announcement.
   - If you hear intercept tone, hang up and record your announcement on another extension that is assigned to a different circuit pack.

4. End the recording.
   - If you are using a digital telephone, press #. You hear dial tone allowing you to continue your session (for example, dial **2** to hear the announcement just recorded).
   - If you are using an analog telephone, hang up. If your analog telephone is not connected through lineside DS1, the system records an electrical click at the end of the recording. You have to redial the announcement feature access code to continue your session.

Note:
The announcement records the sound of the receiver returning to the telephone. Hang up gently, press the drop button, or press the switchhook with your finger.

5. To listen to the announcement you just recorded:
   - If you are using a digital telephone, do not hang up. Dial **2**. The recording plays back through the handset.
6. If you are not satisfied with the announcement,
   - dial **1** to re-record the announcement.
   - dial **3** to delete the announcement and end the recording session.
7. If you want to listen to the announcement after you have hung up, dial the extension from any telephone or console. In this example, dial **1234**. The announcement plays through the handset.

You have to wait 15 seconds after you record the announcement before you can dial the extension to hear your announcement. During this 15-second window, you cannot record a new announcement and no one can play this announcement. You can re-record the announcement. Dial the feature access code, dial the extension, and press 2 before the 15-second timer expires.

Professional or computer recordings

If you are using the VAL TN2501AP announcement circuit pack, or if you have a G350 or G700 Media Gateway with VVAL, you can record announcements at a computer rather than at a system telephone. You can also record announcements at an off-site location and transfer them using VAL Manager or File Transfer Protocol (FTP). To be compatible with the TN2501AP circuit pack (the circuit pack is applicable to MCC1, SCC1, CMC1, G600, or G650 Media Gateways only) and *Communication Manager*, announcement recordings must have the following parameters:

- CCITT A-Law or CCITT µ-Law companding format (do not use PCM)
- 8KHz sample rate
- 8-bit resolution (bits per sample)
- Mono (channels = 1)

Recording new announcements at a computer

To record an announcement at a computer:

1. At the computer, open the application that you use to record “wave” (.wav) files.
2. Set the recording parameters.
3. Record the announcement by speaking into a microphone connected to the computer.
4. Play the announcement back at the computer before transferring the file to the VAL (TN2501AP) circuit pack (the circuit pack is applicable to MCC1, SCC1, CMC1, G600, or G650 Media Gateways only), or to your G350 or G700 Media Gateway.

Deleting announcements

Let us delete the unassigned DID announcement assigned to extension 1234.

We know that the announcement access code is *56. Use any console or telephone with console permissions to delete the announcement.

To delete the announcement, use a telephone with console permissions to complete the following steps:

1. Dial the announcement access code.

   In our example, we'll dial ***56**. You hear dial tone.

2. Dial the announcement extension.

   In our example, we'll dial **1234**. You hear dial tone.

3. Dial **3** to delete the announcement from the circuit pack.

4. Hang up the telephone.

You also need to remove the information from the system. To remove the information, use your system administration terminal to complete the following steps:

1. Type **`change announcements`**. Press **Enter**.

   The system displays the **Announcements/audio Sources** screen (Figure 9: Announcements/Audio Sources screen on page 41).

2. Delete the information in the **Ext** and **Type** fields.

3. Press **Enter** to save your work.

Backing up your announcements

Note:
To back up announcements, you need to use either FTP or VAL Manager. See the *Administrator Guide for Avaya Communication Manager*, 03-300509, or your Avaya representative for more information about these tools.

MCC1, SCC1, CMC1, G600, or G650 Media Gateways: - Make sure you back up your announcements recorded on TN750 and TN750B circuit packs. The system loses announcements stored on these circuit packs if power is shut down or the circuit pack is removed.

The TN750C circuit pack has on-board FLASH memory so you do not have to back it up. However, you may want to back up your TN750C to another TN750C circuit pack or tape for extra security. You need to administer the data module that is built into the TN750 circuit pack before you save your announcements. For more information, see the *Administrator Guide for Avaya Communication Manager*, 03-300509.

CAUTION:
Do not copy, save, or restore announcements from a TN750C to a TN750 or TN750B. It may corrupt the announcement.

To backup announcements on TN750 or TN750B circuit packs:

1. Type **`save announcements`**. Press **Enter** to save the changes.

Note:
If you have both TN750B and TN750C circuit packs, save the announcements from the TN750B slot.

The save announcement process can take up to 40 minutes. You cannot administer your system while it is saving announcements.

Managing announcements

4: Managing hunt groups

This section shows you how to set up hunt groups. It explains how calls to a hunt group are handled and shows you different call distribution methods.

What are hunt groups?

A hunt group is a group of extensions that receive calls according to the call distribution method you choose. When a call is made to a certain telephone number, the system connects the call to an extension in the group.

Use hunt groups when you want more than one person to be able to answer calls to the same number. For example, set up a hunt group for:

- a benefits department within your company
- a travel reservations service

Setting up hunt groups

Let us set up a hunt group for an internal helpline. Before making changes to the system, we'll decide:

- the telephone number for the hunt group
- the number of people answering calls
- the way calls are answered

Our example dial plan allows 4-digit internal numbers that begin with 1. The number 1200 is not in use. So, we'll set up a helpline hunt group so anyone within the company can call extension 1200 for help with a telephone.

We will assign 3 people (agents) and their extensions to our helpline. We want calls to go to the first available person.

To set up our helpline hunt group:

1. Type **`add hunt-group next`. Press Enter**.

   The system displays the **Hunt Group** screen (Figure 10: Hunt Group screen on page 50). The **Group Number** field is automatically filled in with the next available hunt group number.

Figure 10: Hunt Group screen

```
                              HUNT GROUP

           Group Number: 5                                 ACD? n
             Group Name: internal helpline               Queue? n
        Group Extension: 1200                          Vector? n
             Group Type: ucd-loa                 Coverage Path:
                     TN: 1           Night Service Destination:
                    COR: 1                    MM Early Answer? n
          Security Code: __
    ISDN Caller Display: ________
```

2. In the **Group Name** field, type the name of the group.

   In our example, type **internal helpline**.

3. In the **Group Extension** field, type the telephone number.

   We'll type **1200**.

4. In the **Group Type** field, type the code for the call distribution method you choose.

   We'll type **ucd-loa** so a call goes to the agent with the lowest percentage of work time since login.

Note:
The COS for all hunt groups defaults to 1. Therefore, any changes to COS 1 on the **Class Of Service** screen changes the COS for all your hunt groups. A COS field does not appear on the **Hunt Group** screen.

5. Click **Next** until you see the **Group Member Assignments** section (Figure 11: Hunt Group screen on page 51).

Figure 11: Hunt Group screen

```
                              HUNT GROUP
        Group Number: 5   Group Extension: 1200   Group Type: ucd-loa
Member Range Allowed: 1 - 999 Administered Members (min/max): 1  /9
                                    Total Administered Members: 3
GROUP MEMBER ASSIGNMENTS
     Ext     Name                             Ext     Name
  1: 1011                                14:
  2: 1012                                15:
  3: 1013                                16:
  4:                                     17:
  5:                                     18:
  6:                                     19:
  7:                                     20:
  8:                                     21:
  9:                                     22:
 10:                                     23:
 11:                                     24:
 12:                                     25:
 13:                                     26:
At End of Member List
```

6. In the **Ext** field, type the extensions of the agents you want in the hunt group.

   We'll type **1011**, **1012,** and **1013**.

Note:
For a **ddc** group type (also known as "hot seat" selection), the call is sent to the extension listed in the first **Ext** field. The system uses this screen to determine the hunting sequence. See Call distribution methods on page 56 for more information.

7. Press **Enter** to save your work.

   The **Name** fields are display-only and do not appear until the next time you access this hunt group.

To make changes to a hunt group:

1. Type **`change hunt-group`** ***n***, where ***n*** is the number of the hunt group. Press **Enter**.
2. Change the necessary fields.
3. Press **Enter** to save your changes.

Note:
Type **`list member hunt group`** to see a list of logged-in members of a hunt group by group number. For splits and skills, the login ID, name, and different fields for EAS and Advocate appear on the list. See Call distribution methods on page 56 for a definition of "splits" and "skills."

Setting up a queue

You can tell your system how to handle a hunt-group call when it cannot be answered right away. The call waits in a "queue."

Let us tell the system that up to 10 calls can wait in the queue, but that you want to be notified if a call waits for more than 30 seconds.

You also want the system to send a warning when 5 or more calls are waiting in the queue. This warning flashes queue-status buttons on telephones that have a status button for this hunt group. When the buttons flash, everyone answering these calls can see that the helpline calls need more attention.

To set up our helpline queue:

1. Type **change hunt-group *n***, where ***n*** is the number of the hunt group that you want to change. Press **Enter**.

   In our example, type **change hunt-group *5***.

   The system displays the **Hunt Group** screen (Figure 12: Hunt Group screen on page 53).

Figure 12: Hunt Group screen

```
                              HUNT GROUP

           Group Number: 5                               ACD? n
             Group Name: internal helpline             Queue? y
        Group Extension: 1200                         Vector? n
             Group Type: ucd-loa                Coverage Path:
                     TN: 1          Night Service Destination:
                    COR: 1                    MM Early Answer? n
          Security Code: __
    ISDN Caller Display: ________

           Queue Length: 10
Calls Warning Threshold: 5                  Calls Warning Port:
 Time Warning Threshold: 30                   Time Warning Port:
```

2. In the **Queue** field, type **y**.
3. In the **Queue Length** field, type the maximum number of calls that you want to wait in the queue.

   In our example, type **10**.

4. In the **Calls Warning Threshold** field, type the maximum number of calls that can be in the queue before the system flashes the queue status buttons.

   In our example, type **5**.

5. In the **Time Warning Threshold** fields, type the maximum number of seconds you want a call to wait in the queue before the system flashes the queue status buttons.

   In our example, type **30**.

6. Press **Enter** to save your changes.

Adding hunt group announcements

You can add recorded announcements to your hunt group queue. Use announcements to encourage callers to stay on the line or to provide callers with information. You can define how long a call remains in the queue before the caller hears an announcement.

See Recording announcements on page 42 for information on how to record an announcement.

Let us add an announcement to our internal helpline. We want the caller to hear an announcement after 20 seconds in the queue, after approximately 4 or 5 rings. Our announcement is already recorded and assigned to extension 1234.

Note:
You can use the **`display announcements`** command to find the extensions of your recorded announcements.

To add an announcement to our helpline queue:

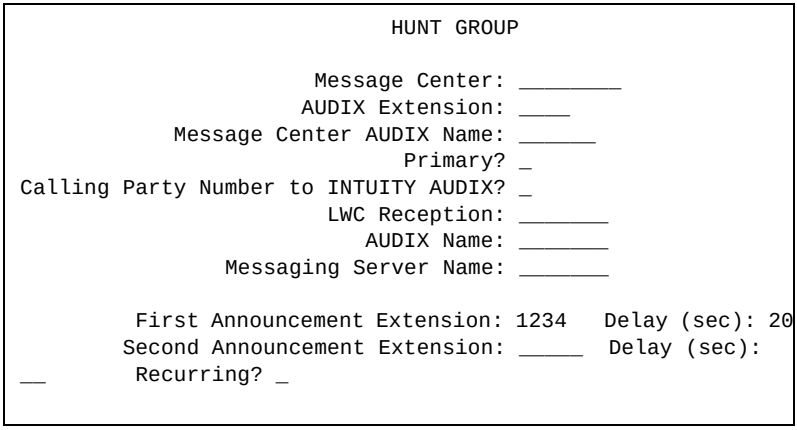
1. Type **`change hunt-group`** ***n***, where ***n*** is the number of the hunt group to change. Press **Enter**.

   In our example, type **`change hunt-group`** ***5***.

   The system displays the **Hunt Group** screen.

2. Click **Next** until you see the **First Announcement Extension** field (Figure 13: Hunt Group screen on page 55).

Figure 13: Hunt Group screen



3. In the **First Announcement Extension** field, type the extension of the announcement you want callers to hear.

   In our example, type **1234**.

4. In the **Delay (sec)** field, type the number of seconds you want the caller to wait before hearing the first announcement.

   In our example, type **20**.

Note:

If you set the delay announcement interval to **0**, calls automatically connect to the announcement before they are queued, follow coverage, or connect to an available agent. This is called a “forced first announcement.”

5. Press **Enter** to save your work.

You can use the same announcement for more than one hunt group. For more information on announcements and hunt groups, see the *Administrator Guide for Avaya Communication Manager*, 03-300509.

Call distribution methods

You have more call distribution choices if your company acquires Automatic Call Distribution (ACD) or Expert Agent Selection (EAS).

ACD and EAS allow you to distribute calls according to the work loads and skill levels of your agents in each hunt group. You can track call handling and monitor the efficiency of your agents.

- When you assign ACD to a hunt group, the group is called a “split.”
- When you assign EAS to a hunt group, the group is called a “skill.”

The following table shows 6 types of call distribution methods and the software required for each method.

Method	The system hunts for...	I need...
Direct Department Calling (DDC)	the first agent administered in the hunt group. If the first agent is busy, it goes to the second agent, and so forth. This “hot seat” method puts a heavy call load on the first few agents.	no extra software (you cannot use this method if you have EAS enabled)
Circular (circ)	the next available agent in a chain.	no extra software
Uniform Call Distribution - Most Idle Agent (UCD-MIA)	the available agent who has been idle the longest since their last call.	no extra software

Method	The system hunts for...	I need...
Uniform Call Distribution - Least Occupied Agent (UCD-LOA)	the available agent with the lowest percentage of work time since login.	ACD, EAS, and Business Advocate
Expert Agent Distribution - Most Idle Agent (EAD-MIA)	the available agent with the highest skill level who has been idle the longest since their last call.	EAS
Expert Agent Distribution - Least Occupied Agent (EAD-LOA)	the available agent with the highest skill level and the lowest percentage of work time since login.	EAS and Business Advocate

Managing hunt groups

5: Managing vectors and VDNs

This section provides an introduction to vectors and vector directory numbers (VDN). It gives you basic instructions for writing simple vectors.

This section also outlines the enhancements made to the conferencing feature of Communication Manager.

SECURITY ALERT:

Vector fraud is one of the most common types of toll fraud because vectors route calls based on the Class of Restriction (COR) assigned to the VDN. For more information, see the *Avaya Products Security Handbook,* 555-025-600, or contact your Avaya representative.

This section references announcements, hunt groups, queues, splits, and skills, which are covered in detail in other sections of this book. You can find information about these topics in the *Administrator Guide for Avaya Communication Manager*, 03-300509, and the *Avaya MultiVantage™ Call Center Software Call Vectoring and Expert Agent Selection (EAS) Guide*, 555-230-714.

What are vectors?

A vector is a series of commands that you design to tell the system how to handle incoming calls. A vector can contain up to 32 steps and allows customized and personalized call routing and treatment. Use call vectoring to:

- play multiple announcements
- route calls to internal and external destinations
- collect and respond to dialed information

Note:
The vector follows the commands in each step in order. The vector processes the step and follows the command if the conditions are correct. If the command cannot be followed, the vector skips the step and processes the next step.

Your system can handle calls based on a number of conditions, including the number of calls in a queue, how long a call has been waiting, the time of day, day of the week, and changes in call traffic or staffing conditions.

Writing vectors

Writing vectors is easy, but we recommend that you set up and test your vectors before you use them across the system.

Note:
Type **`list vector`** to see a list of existing vectors. Type **`list usage vector`** to see where each vector is used throughout the system. Type **`list usage digit string`** to see all the vectors, vector tables, and Best Service Routing (BSR) plans that use a specific dial string.

Before you start

- On the **Optional Features** screen, verify the **Basic Call Vectoring** field is set to **y**. If the field is not set to **y**, contact your Avaya representative. To see the **Optional Features** screen, type **`system-parameters customer-options`**.

For MCC1, SCC1, CMC1, G600, and G650 Media Gateways: -

- To provide announcements, you need an Announcement circuit pack. For more information on the circuit pack, see the *Hardware Guide for Avaya Communication Manager*.
- Use one of the following:
  - Tone Clock with Call Classifier - Tone Detector circuit pack
  - Call Classifier - Detector circuit pack

For G350 and G700 Media Gateways: -

- To provide announcements, no circuit packs are required. The announcement feature is embedded within the media gateway, and no special media module is required.

We will write a vector to handle calls to our main number. It is the first vector, so we will use number 1.

To write a vector:

1. Type **`change vector 1`**. Press **Enter**.

   The system displays the **Call Vector** screen (Figure 14: Call Vector screen on page 62).

   The vector **Number** field on the left side of the screen is filled in automatically.

Figure 14: Call Vector screen

```
                                CALL VECTOR

    Number: 1            Name: main number calls
Multimedia? n                                  Lock? n
     Basic? y EAS? n  G3V4 Enhanced? n ANI/II-Digits? n  ASAI Routing? n
 Prompting? y LAI? n G3V4 Adv Route? n         CINFO? n           BSR? n
01
02
03
04
05
```

2. Type a description for the vector in the **Name** field.

   In our example, type **main number calls**.

Note:

The information in the heading of the **Call Vector** screen is display only. Use the **`display system-parameters customer-options`** command to see the features that are turned on in your system.

3. Type your vector steps in the numbered column on the left of the screen.

Note:

When you type your vector steps, the system automatically completes some of the vector step information for you. For example, if you type "**q**" in a vector step field, the system fills in "**queue-to**". Also, additional fields appear when you complete a field and press the **Tab** key. This makes it very easy to type in your vector steps.

Now that vector 1 is set up, let us add a vector step to it to tell the system how to handle the calls to our main number.

Putting a call in a queue

Write a vector so that calls that come into the main business number redirect to a queue.

We'll use a vector-controlled hunt group for the main number queue. This hunt group was set up as main split 47. When calls first arrive, all calls to our main number should be queued as "**pri l**" for low priority.

To queue calls, write the following vector (step 2). Please note that we started our example on step 2, because step 1 is used later in this chapter.

Figure 15: Call Vector screen

```
                                CALL VECTOR

    Number: 1            Name: main number calls
Multimedia? n                                          Lock? n
     Basic? y EAS? n  G3V4 Enhanced? n ANI/II-Digits? n ASAI Routing? n
 Prompting? y LAI? n G3V4 Adv Route? n         CINFO? n          BSR? n
01
02 queue-to main split 47 pri l
03
04
05
```

Note:
Remember, the system automatically fills in some of the information when you type your vector step and press **Tab**.

Playing an announcement

Write a vector to play an announcement for callers in a queue. Use the announcement to ask callers to wait. You need to record the announcement before the vector can use it. For more information, see Adding announcements on page 39.

Let us play announcement 4001, asking the caller to wait, then play music for 60 seconds, then repeat the announcement and music until the call is answered. The **goto** command creates the loop to repeat the announcement and the music. **Unconditionally** means under all conditions.

Note:

Rather than loop your vectors directly back to the announcement step, go to the previous queue-to step. This way, if for some reason the call does not queue the first time, the system can attempt to queue the call again. If the call successfully queued the first time through, it merely skips the queue-to step and plays the announcement. The system cannot queue a call more than once in the exact same priority level.

To play and repeat an announcement, write this vector (steps 3-5):

Figure 16: Call Vector screen

```
                              CALL VECTOR

    Number: 1            Name: main number calls
Multimedia? n                                          Lock? n
     Basic? y EAS? n  G3V4 Enhanced? n ANI/II-Digits? n ASAI Routing? n
 Prompting? y LAI? n G3V4 Adv Route? n         CINFO? n          BSR? n
01
02 queue-to main split 47 pri l
03 announcement 4001 (''All agents are busy, please wait...'')
04 wait-time 60 secs hearing music
05 goto step 2 if unconditionally
```

Routing based on time of day

Write a vector for calls that come in after your office closes.

Assume that your business is open 7 days a week, from 8:00 a.m. to 5:00 p.m. When calls come in after business hours, you want to play your announcement 4002, which states that the office is closed and asks callers to call back during normal hours. The call is disconnected after the announcement is played.

For after-hours treatment, write this vector (steps 1, 6, 7):

Figure 17: Call Vector screen

```
1. goto step 7 if time-of-day is all 17:00 to all 8:00
2. queue-to main split 47 pri l
3. announcement 4001 (All agents are busy, please wait...)
4. wait-time 60 secs hearing music
5. goto step 2 if unconditionally
6. stop
7. disconnect after announcement 4002 (“We’re sorry, our
   office is closed...)
8.
```

If the **goto** command in step 5 fails, the system will go to the next step. The **stop** in step 6 prevents callers from incorrectly hearing the “office is closed” announcement in step 7. **Stop** keeps the call in the state it was in before the command failed. In this case, if step 5 fails, the call remains in step 4 and the caller continues to hear music.

CAUTION:

Add a stop vector step only after calls are routed to a queue. If a stop vector is executed for a call NOT in queue, the call is dropped.

Allowing callers to leave a message

Write a vector that allows callers to leave messages. This type of vector uses a hunt group called a messaging split. For our example, we send after-hours calls to the voice mailbox at extension 2000 and use messaging split 99.

Once the vector routes a call to the mailbox, the caller hears a greeting (that was recorded with the voice mail for mailbox 2000) that tells then they can leave a message.

To let callers leave messages, write this vector (step 7).

Figure 18: Call Vector screen

```
1. goto step 7 if time-of-day is all 17:00 to all 8:00
2. queue-to main split 47 pri l
3. announcement 4001 (All agents are busy, please wait...)
4. wait-time 60 secs hearing music
5. goto step 2 if unconditionally
6. stop
7. messaging split 99 for extension 2000
8.
```

Redirecting calls during an emergency or holiday

You can provide a quick way for a supervisor or agent to redirect calls during an emergency or holiday. Use a special mailbox where you can easily change announcements. This vector is also an alternative to making sure all agents log out before leaving their telephones.

Note:

You can also use Holiday Vectoring, which simplifies vector writing for holidays and other times when you need to provide special handling for date-related calls. This feature allows you to administer up to ten different holiday tables, then use those tables to make vectoring decisions. For information, see the *Avaya MultiVantage™ Call Center Software Call Vectoring and Expert Agent Selection (EAS) Guide*, 555-230-714.

In our example, no agents are normally logged in to split 10. We'll use split 10 for an emergency. We preset buttons on our agents' telephones so people with these telephones can log in at the touch of a button.

To quickly redirect calls:

1. Create a special mailbox with the appropriate announcement such as "We are unable to answer your call at this time" or "Today is a holiday, please call back tomorrow."

   In our example, we recorded the mailbox greeting for extension 2001.

2. Insert the following bold vector steps (steps 1, 10, 11):

Figure 19: Call Vector screen

```
01. goto step 10 if staffed agents split 10 > 0
02. goto step 8 if time-of-day is all 17:00 to all 8:00
03. queue-to main split 47 pri l
04. announcement 4001 ("All agents are busy, please wait...")
05. wait-time 60 secs hearing music
06. goto step 3 if unconditionally
07. stop
08. messaging split 99 for extension 2000
09. stop
10. messaging split 99 for extension 2001
11. stop
```

When there is an emergency, fire drill, or holiday, the supervisor or agent logs into this split.

When an agent logs into split 10, the system looks at vector step 1, sees that more than 0 people are logged into split 10, and sends calls to step 10 (which sends to messaging split 99).

When your business returns to normal and the agent logs out of split 10, call handling returns to normal.

Giving callers additional choices

You can give your callers a list of options when they call. Your vector tells the system to play an announcement that contains the choices. The system collects the digits the caller dials in response to the announcement and routes the call accordingly.

We'll create a vector that plays an announcement, then lets callers dial an extension or wait in the queue for an attendant.

Please note, the following example of this "auto attendant" vector is a new vector and is not built on the vector we used in the previous examples.

To let callers connect to an extension, write this kind of vector:

Figure 20: Call Vector screen

```
                          CALL VECTOR
    Number: 20           Name: extension or attendant
Multimedia? n                                        Lock? n
     Basic? y  EAS? n  G3V4 Enhanced? n  ANI/II-Digits? n  ASAI Routing? n
 Prompting? y  LAI? n G3V4 Adv Route? n  CINFO? n  BSR? n
1. wait-time 0 seconds hearing music
2. collect 4 digits after announcement 4004 (You have reached our
     company. Please dial a 4-digit extension or wait for the attendant.)
3. route-to digits with coverage y
4. route-to number 0 with cov n if unconditionally
5. stop
```

Inserting a step

It is easy to change a vector step and not have to retype the entire vector. Let us add announcement 4005 between step 3 and step 4 in vector 20.

To insert a new vector step in vector 20:

1. Type **change vector *20***. Press **Enter**.

   The system displays the **Call Vector** screen.

2. Press **Edit**.

3. Type **i** followed by a space and the number of the step you want to add.

   The system inserts the vector step that you want to add *above* the vector step number you specify. To insert a step between step 3 and step 4, type **i 4**.

4. Type the new vector step.

   We'll type **announcement 4005 (Please wait...)**.

5. Press **Enter** to save your changes.

Note:
When you insert a new vector step, the system automatically renumbers the rest of the vector steps and all references to the vector steps. The system inserts a "*" when the numbering needs more attention.

Deleting a step

To delete vector step 5 from vector 20:

1. Type **change vector *20***. Press **Enter**.

   The system displays the **Call Vector** screen.

2. Press **Edit**.

3. Type **d** followed by a space and the number of the step that you want to delete.

   In our example, type **d 5**.

Note:
You can delete a range of vector steps. For example, to delete steps 2 through 5, type **d 2-5**.

4. Press **Enter** to save your changes.

Note:
When you delete a vector step, the system automatically renumbers the rest of the vector steps and all references to the vector steps. The system inserts a * when the numbering needs more attention.

Diagnosing a vector problem

If there is a problem with a vector, the system records the error as a vector event. Vector events occur for a number of reasons including problems with a trunk, full queue slots, or the vector reaching the maximum 1000 steps allowed.

Access the **Event Report** screen to see why the vector failed.

To view the event report:

1. Type **`display events`**. Press **Enter**.

   The system displays the **Event Report** screen (Figure 21: Event Report screen on page 71).

Figure 21: Event Report screen

```
                    EVENT REPORT
The following option control which events will be displayed.
   EVENT CATEGORY
                     Category: Vector
    REPORT PERIOD
          Interval: _a_   From: __/__/__:__  To: __/__/__:__
   SEARCH OPTIONS
                  Vector Number: ______
                     Event Type: ______
                      Extension: ______
```

2. To see all current vector events, press **Enter**

   or

   Indicate the events that you want to see by completing the **Report Period** and **Search Option** fields. For more information, see the *Avaya MultiVantage™ Call Center Software Call Vectoring and Expert Agent Selection (EAS) Guide*, 555-230-714.

3. Press **Enter** to view the report.

   The system displays the **Event Report** (detail) screen (Figure 22: Event Report screen (detail) on page 71).

Figure 22: Event Report screen (detail)

```
                              EVENT REPORT
Event Event                 Event    Event  First       Last        Event
Type  Description           Data 1   Data 2 Occur       Occur       Cnt
  20  Call not queued       12/5     B      09/28/13:43 09/28/13:43 21
 541  Not a messaging split Split 89 4C     09/28/13:43 09/28/13:43 136
```

Look at the information in the **Event Data 1** field to diagnose the vector event. In this example, there was a problem with:

- Vector 12, step 5
- Split 89

Vector Directory Numbers

A Vector Directory Number (VDN) is an extension that directs an incoming call to a specific vector. This number is a “soft” extension number that is not assigned to a physical location or piece of equipment. VDNs must conform to your dial plan.

Let us create VDN 5011 for our sales department. A call into 5011 routes to vector 11. This vector plays an announcement and queues calls to the sales department.

SECURITY ALERT:

Vector fraud is one of the most common types of toll fraud because vectors route calls based on the Class of Restriction (COR) assigned to the VDN. For more information, see the *Avaya Products Security Handbook,* 555-233-600, or contact your Avaya representative.

To add a VDN:

1. Type **add VDN *5011***. Press **Enter**.

   Type the VDN extension that you want to add in the command. The system displays the **Vector Directory Number** screen (Figure 23: Vector Directory Number screen on page 72).

Figure 23: Vector Directory Number screen

```
                    VECTOR DIRECTORY NUMBER

                       Extension: 5011
                            Name: Sales Department
                   Vector Number: 11

               Allow VDN Override? n
                             COR: 1
                              TN: 1
                        Measured: both
```

2. Type a description for this VDN in the **Name** field.

   In our example, type **Sales Department**.

   The information in the **Name** field appears on a display telephone. This allows the agent to recognize the nature of the call and respond accordingly.

Note:
The **Allow VDN Override?** field on the **Vector Directory Number** screen controls the operation of the display.

3. Type the vector number in the **Vector Number** field.

   In our example, type **11**.

4. In the **Measured** field, indicate how you want to measure calls to this VDN.

   In our example, type **both**.

Note:
In our example, **both** means the Avaya Call Management System (CMS) and Avaya Basic Call Management System (BCMS). BCMS must be enabled on the **Optional Features** screen (Figure 25: Optional Features screen on page 75) to use **both**. For more information, see the *Administrator Guide for Avaya Communication Manager*, 03-300509.

5. Press **Enter** to save your changes.

To see the VDNs that are already associated with your vectors:

1. Type **`list vdn`**. Press **Enter**.

   The system displays the **Vector Directory Numbers** screen (Figure 24: Vector Directory Numbers screen on page 74).

Figure 24: Vector Directory Numbers screen

```
                  VECTOR DIRECTORY NUMBERS
                                                          Event
                    VDN            Vec          Orig    Notif  Skills

Name                Ext   Ovrd  COR TN  Num  Meas  Annc Adj 1st 2nd 3rd
Tech Support        5000   y    59  1   234  none  301
Customer Serv.      5001   n    1   1        none  302
New Orders          5002   y    23  1   5    none  303
```

Each VDN maps to one vector. Several VDNs can map to the same vector.

Meet-me Conference

Use the Meet-me Conference feature to set up a dial-in conference of up to six parties. Meet-me Conference uses Call Vectoring to process the setup of the conference call.

Meet-me Conference can require an access code. If an access code is assigned, and if the vector is programmed to expect an access code, each user dialing into the conference call must dial the correct access code to be added to the call. Any user can dial the Meet-me Conference extension if the extension number is part of the customer's DID block.

Administering Meet-me Conference takes three basic steps:

1. Make sure the customer options are set up to accept Meet-me Conferencing.
2. Create a Meet-me Conference VDN.
3. Create a vector for the Meet-me Conference.

Verifying the customer options

Let us first make sure the customer options are set up correctly.

1. Type **`display system-parameters customer-options`**. Press **Enter**.

   The system displays the **Optional Features** screen (Figure 25: Optional Features screen on page 75).

Figure 25: Optional Features screen

```
                              OPTIONAL FEATURES
                                                                  Used
     G3 Version: V11                     Maximum Ports: 2800    856
       Location: 1            Maximum XMOBILE Stations: 700     0
       Platform: 2

IP PORT CAPACITIES
                        Maximum Administered IP Trunks: 200     84
           Maximum Concurrently Registered IP Stations: 480     6
             Maximum Administered Remote Office Trunks: 0       0
Maximum Concurrently Registered Remote Office Stations: 0       0
              Maximum Concurrently Registered IP eCons: 2       0
                    Maximum Administered IP SoftPhones: 1000    20
   Maximum Number of DS1 Boards with Echo Cancellation: 5       0
                             Maximum TN2501 VAL Boards: 3       1

     (NOTE: You must logoff & login to effect the permission changes.)
```

2. On the first screen, make sure that the **G3 Version** field is set to **V11** or later (this is the version of Communication Manager that you are running). On the third page (not shown), make sure that the **Enhanced Conferencing** field is set to **y**.

   If either of these two setting are not set up correctly, contact your Avaya representative.

Setting up a Meet-me Conference VDN

Now let us set up a Meet-me Conference VDN. For this example, we'll set the VDN up at extension 36090.

1. Type **add vdn *36090***. Press **Enter**.

   The system displays the **Vector Directory Number** screen (Figure 26: Vector Directory Number screen on page 76). The extension number that you typed in the command, extension 36090, appears in the **Extension** field.

   Let us assign vector 90 to this VDN.

Figure 26: Vector Directory Number screen

```
                    VECTOR DIRECTORY NUMBER

                      Extension: 36090
                           Name: Meet-me Conference VDN
                  Vector Number: 90

            Meet-me Conferencing? y

                            COR: 1
                             TN: 1
```

Note:
If the VDN extension is part of the customer's DID block, external users will be able to access the conference VDN. If the VDN extension is not part of the customer's DID block, only internal callers on the customer's network (including DCS or QSIG) or remote access callers can access the conference VDN.

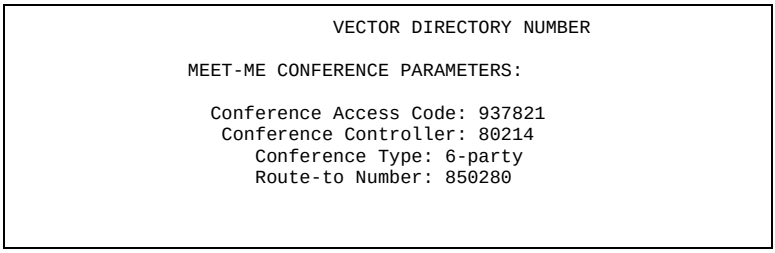
The second **Vector Directory Number** screen (Figure 27: Vector Directory Number screen on page 77) allows you to assign a six digit access code for the Meet-me Conference feature. The second screen also allows you to indicate the extension number of the person who is responsible for controlling the access code.

Let us assign access code 937821 and extension number 80214 as the responsible party.

SECURITY ALERT:

Avaya recommends that you always assign an access code. However, if you do not want to assign an access code, leave the **Conference Access Code** field blank.

Figure 27: Vector Directory Number screen



2. In the **Conference Type** field, make sure the conference type is **6-party**.
3. In the **Route-to Number** field, enter the ARS or AAR Feature Access Code (FAC) followed by the routing digits. Or you can enter the unique UDP extension.
4. Press **Enter** to save your changes.

Creating a Meet-me Conference vector

Finally, let us create a vector for the Meet-me Conference feature.

Note:

Before you can set up a vector that references announcements, first you must set up the announcements in the system. For more information, see Managing announcements on page 37.

1. Type **change vector *90***. Press **Enter**.

   The **Change Vector** screen appears for VDN 90. Let us write a call vector for this Meet-me Conference. See the following two screens (Figure 28: Call Vector screen on page 78 and Figure 29: Call Vector screen on page 79) to help you set up a Meet-me Conference.

Figure 28: Call Vector screen

```
change vector 90                                          Page 1 of 3 SPE A
                                  CALL VECTOR

   Number: 90               Name: Enh Conf Vec
              Attendant Vectoring? n  Meet-me Conf? y         Lock? y
    Basic? y EAS? n   G3V4 Enhanced? n ANI/II-Digits? n ASAI Routing? n
Prompting? y LAI? n  G3V4 Adv Routs? n CINFO? n  BSR? n Holidays? n

01 collect       6 digits after announcement 12340
02 goto          step 6 if digits = meet-me-access
03 collect       6 digits after announcement 12341
04 goto          step 6 if digits = meet-me-access
05 disconnect    after announcement 12342
06 goto          step 11 if meet-me-idle
07 goto          step 14 if meet-me-full
08 announcement  12343
09 route-to      meetme
10 stop
11 announcement  12344
```

Figure 29: Call Vector screen

```
change vector 90                                  Page  2 of 3   SPE A
                              CALL VECTOR

    Number: 90                Name: Enh Conf Vec
                  Attendant Vectoring? n   Meet-me Conf? y      Lock? y
    Basic? y   EAS? n  G3V4 Enhanced? n   ANI/II-Digits? n   ASAI Routing? n
Prompting? y   LAI? n  G3V4 Adv Routs? n  CINFO? n BSR? n Holidays? n

12 route-to      meetme
13 stop
14 disconnect    after announcement 12345
15 stop
16
17
18
19
20
21
22
```

This is what happens when a person calls the Meet-me Conference telephone number:

Each caller hears announcement 12340, which says something like: “Welcome to the Meet-me Conferencing service. Enter your conference access code.” Each caller enters the access code 937821. The **collect** vector step 1 collects the access code digits. If the access code is valid, the vector processing continues with vector step 6.

If the access code is invalid, the vector processing continues with vector step 3, which plays announcement 12341. Announcement 12341 says something like: “The access code you entered is invalid. Please enter the access code again.”

If the caller enters the wrong access code again, the vector processing continues with vector step 5, which plays announcement 12342. Announcement 12342 says something like: “This access code is invalid. Please contact the conference call coordinator to make sure you have the correct conference telephone number and access code. Good bye.” The caller is disconnected.

Vector step 6 is only valid for the first caller into the Meet-me Conference. The **meet-me-idle** condition routes the first caller to announcement 12344 (vector step 11). The recorded announcement says something like: “You are the first party to join the call.” The caller is then routed to the Meet-me Conference call by vector step 12 and vector processing stops.

Vector step 7 is used when the Meet-me Conference already has the maximum of six parties on the call. The **meet-me-full** condition disconnects the caller after playing announcement 12345 (vector step 14). The recorded announcement 12345 says something like: “This Meet-me Conference is filled to capacity. Please contact the conference call coordinator for assistance. Good bye.”

If a caller enters the correct access code, is not the first caller, and the conference call is not full, vector processing continues with vector step 8, which plays announcement 12343. The announcement says something like: “Your conference call is already in progress.” The caller is then routed to the Meet-me Conference call by vector step 9 and vector processing stops.

As each caller enters the conference call, all parties on the call will hear an “entry” tone. When the conference call is over and callers drop out of the conference call, any remaining parties on the call will hear an “exit” tone.

Options for vector steps

collect — When the **Meet-me Conf** field is enabled, the **collect** vector step collects the next six digits and uses those digits as the access code for a Meet-me Conference call. See vector steps 1 and 3 in the example.

goto — The **goto** vector step has two conditions:

- **meet-me-idle**
- **meet-me-full**

  The **meet-me-idle** condition routes the first caller accessing a Meet-me Conference to the conference call. An announcement step, saying they are the first party to access the call, can be given to the caller. See vector steps 6 and 11 in the example.

  The **meet-me-full** condition is used when the Meet-me Conference already has the maximum of six parties on the call. See vector steps 7 and 14 in the example.

The **goto** step vector also has an option, **meet-me access**, for the digits condition to verify that the access code is valid. If the access code entered by the caller equals the access code administered for the VDN, vector processing continues. See vector steps 2 and 4 in the example.

route-to — The **route-to** vector step has one condition: **meetme**. When successful, this condition adds the caller to the Meet-me Conference call, and all parties on the call hear an “entry” tone to signify that another caller has joined the conference. This condition is valid when the caller has entered the correct access code and there are not already six parties on the call. See vector steps 9 and 12 in the example.

If the **route-to meetme** step ever fails, vector processing stops and the caller hears busy tone.

Disabling Meet-me Conference

If you want to disable Meet-me Conference, you must first remove all Meet-me Conference VDNs and vectors. If you do not, the change is not allowed, and a message appears telling you that you must first remove all Meet-me Conference VDNs and vectors before you can disable this option.

Expanded Meet-me Conferencing

Use the Expanded Meet-me Conferencing feature to set up multi-party dial-in conferences consisting of more than six parties. The Expanded Meet-me Conference feature supports up to 300 parties. You may still use the regular Meet-me Conference feature for conferences with up to 6 parties.

Like the Meet-me Conference feature, conferees under the Expanded Meet-me Conferencing feature dial into a conference VDN. Expanded Meet-me Conferencing does not apply to ad-hoc conferences using the Conference button on your telephone.

The Expanded Meet-me Conferencing feature provides all the regular capabilities of the six-party Meet-me Conference feature. These capabilities include selective display, entry and exit tones, passwords, conference display updates, far-end mute and drop.

The Expanded Meet-me Conferencing feature does not require any new vector steps. It uses the same vectors as the six-party Meet-me conference feature.

Administering Expanded Meet-me Conferencing takes four basic steps:

1. Make sure the customer options are set up to accept Expanded Meet-me Conferencing.
2. Set the maximum number of parties for each conference.

3. Create an Expanded Meet-me Conferencing VDN.
4. Set the language translations, if applicable.

Verifying the customer options

Let us first make sure the customer options are set up correctly.

1. Type **`display system-parameters customer-options`**. Press **Enter**.

   The system displays the **Optional Features** screen (Figure 25: Optional Features screen on page 75).

2. On the first screen, make sure that the **G3 Version** field is set to **V13** or later (this is the version of Communication Manager that you are running).
3. On the third page (not shown), make sure that the **Enhanced Conferencing** field is set to **y**.
4. On the **Optional Features** screen, a numeric value must appear on the **Maximum Number of Expanded Meet-me Conference Ports** field. The maximum value for this field is 300, and it corresponds to the number of Expanded Meet-me Conferencing ports that your system has. This number can be less than 300, and is determined by the license file for your system.

   If any of these setting are not set up correctly, contact your Avaya representative.

Setting the maximum number of parties

Now let us set the maximum number of parties for each conference. For this example, we'll set the number of parties at 50.

1. Type **`change system-parameters features`**.

   The system displays the **Feature-Related System Parameters** screen (Figure 30: Feature-Related System Parameters Screen on page 84).

Figure 30: Feature-Related System Parameters Screen

```
                    FEATURE-RELATED SYSTEM PARAMETERS

CONFERENCE/TRANSFER

               Abort Transfer? n                 No Dial Tone Conferencing? y
        Transfer Upon Hang-Up? y       Select Line Appearance Conferencing? y
Abort Conference Upon Hang-Up? n                                  Unhold? y
   No Hold Conference Timeout: 60  Maximum Ports per Expanded Meet-me Conf: 50

ANALOG BUSY AUTO CALLBACK
               Without Flash? n


AUDIX ONE-STEP RECORDING
                           Recording Delay Timer (msec): 500
Apply Ready Indication Tone To Which Parties In The Call? all
  Interval For Applying Periodic Alerting Tone (seconds): 15
```

2. In the **Maximum Number per Expanded Meet-me Conf** field, type 50. Now, you are allowed a maximum of 50 parties for each conference on your system.
3. Press **Enter** to save your changes.

Note:

The range allowed for this field is between 3 to 300. But 7 and above is recommended as this allows the use of six-party Meet-me Conference, or Expanded Meet-me Conferencing for larger conferences.

Setting up an Expanded Meet-me Conferencing VDN

Next, let us set up a VDN for Expanded Meet-me Conferencing. For this example, we'll set the VDN up at extension 35286.

1. Type **change vdn *35286***. Press **Enter**.

   The system displays the Vector Directory Number screen (Figure 31: Vector Directory Number screen on page 85). The extension number that you typed in the command, extension 35286, appears in the **Extension** field.

   Let us assign vector 75 to this VDN

Figure 31: Vector Directory Number screen

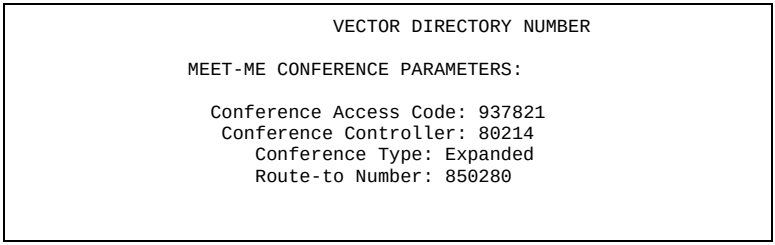
```
                    VECTOR DIRECTORY NUMBER

                      Extension: 35286
                           Name: Exp Meet-me Conferencing VDN
                  Vector Number: 75

            Meet-me Conferencing? y

                            COR: 1
                             TN: 1
```

2. Check the **Meet-me Conferencing field**.

   If this field is set to **y** on the first page of this screen, go to the next page of the Vector Directory Number screen.

   The system displays the **Vector Directory Number** screen (Figure 32: Vector Directory Number screen on page 86).

Figure 32: Vector Directory Number screen



3. In the **Conference Type** field, enter the conference type as **Expanded**.
4. In the **Route-to Number** field, enter the ARS or AAR Feature Access Code (FAC) followed by the routing digits. Or you can enter the unique UDP extension.
5. Press **Enter** to save your changes.

Note:

The Route-to Number can have a maximum of 16 digits, and must be unique across all Expanded Meet-me Conferencing VDNs.

Setting language translations

Finally, let us set the language translations for Expanded Meet-me Conferencing. For this example, let us allow translations for 10 parties on a conference.

If Language translations are enabled for your system, your users can view Expanded Meet-me Conferencing displays in a user-defined language.

1. Type **change display-messages transfer-conference**. Press **Enter**.

   The system displays the **Language Translations** screen (Figure 33: Language Translations screen on page 87).

Figure 33: Language Translations screen

```
                    LANGUAGE TRANSLATIONS

19. English: Mute
Translation: ****
20. English: ^-party conference:10
Translation: ********************************
```

2. In the **^- party conference** field, enter the number of parties on the conference at the time of display, and at the first push of the **conf-dsp** button.
3. The translation display appears on the second line.

6: Using reports

This section explains how to generate, display, list, and print some of the basic reports from Communication Manager, and provides instructions for scheduling reports.

This section also contains information on how and when to use the system monitoring reports. It explains how to interpret some of the information displayed in the reports.

Using report scheduler

Use report scheduler to print reports automatically. Because printing reports requires significant system processor resources, it is a good idea to print reports during off-peak hours.

Note:
There is no port on the G350 or G700 Media Server to hook up a printer, but you can print to a LAN connected-printer. Therefore, the report scheduler would not work with a G350 or G700 Media Server.

Setting printer parameters

Report scheduler prints to the system printer connected to your system. There are two ways to connect the system printer:

- Use a data module extension to connect to a printer outside of the system room.
- Use the EIA port to connect directly to the printer.

Some of the defaults for the system printer are set when the system is installed. If you make any changes to your system configuration, you may need to change the system parameters for the reports to print accurately.

Let us set the parameters for the EIA port. (Note that G3R cabinets do not have EIA ports.)

To set system parameters:

1. Type **`change system-parameters features`**. Press **Enter**.

   The system displays the **Feature-Related System Parameters** screen.

   Click Next until you see the **System Printer Parameters** area (Figure 34: Feature-Related System Parameters screen on page 91).

Figure 34: Feature-Related System Parameters screen

```
                    FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM PRINTER PARAMETERS
          System Printer ENdpoint: eia       Lines Per Page: 60
              EIA Device Bit Rate: 9600

SYSTEM-WIDE PARAMETERS
                      Switch Name: ST12
     Emergency Numbers - Internal: 56107      External: 911
  No-License Incoming Call Number: 56107

MALICIOUS CALL TRACE PARAMETERS
      Apply MCT Warning Tone? n  MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
        Send All Calls Applies to: station
   Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
  Create Universal Call ID (UCID)? y
                                   UCID Network Node ID: 12
```

2. In the **System Printer Endpoint** field, type **eia**. EIA stands for Electronics Industries Association, a trade association that establishes electrical and functional standards.

Note:
If you are connecting to a data module instead of to EIA, type the extension for the data module. The EIA option is not available for DEFINITY R.

3. In the **Lines Per Page** field, type the number of lines per page.

   For our example, leave the default of **60** in this field.

4. In the **EIA Device Bit Rate** field, type **9600**.

Note:
If you are connecting to a data module instead of to EIA, the data module controls the speed.

5. Press **Enter** to save your changes.

Note:
Check frequently to ensure that the system printer has enough paper. Reports that are lost due to a printer failure cannot be recovered.

For more information, see both the *Administrator Guide for Avaya Communication Manager*, 03-300509, and *Reports for Avaya Communication Manager*, 555-233-505.

Scheduling and printing reports

You can schedule up to 50 reports at a time. If you need to schedule more reports, you can purchase Avaya Call Management System (CMS).

To schedule or print a report:

1. Type a **`list`** or **`display`** command, followed by the report name, and followed by the word **`schedule`**. Press **Enter**.

   For example, type **`list measurement attendant group schedule`**.

   The system displays the **Report Scheduler** screen (Figure 35).

Figure 35: Report Scheduler screen

```
                        REPORT SCHEDULER

Job Id: 2                       Job Status: none
Command: list measurements attendant group
Print Interval: scheduled
Print Time: 23:00
      Sun: n  Mon: y  Tue: n  Wed: y  Thu: n  Fri: y  Sat: n
```

2. In the **Print Interval** field, specify one of the following print options:
   - **immediate**, which prints the report immediately.
   - **scheduled**, which enables you to specify the day and time that you want the report to print on a daily or weekly basis.
   - **deferred**, which enables you to print the report once for the date and time that you specify.
3. For scheduled and deferred reports, complete the **Print Time** field to indicate the time that you want the report to print.

Note:
You can schedule reports in 15-minute intervals. If a deferred report does not print within 4 hours of the scheduled time, it is canceled and you must reschedule. If scheduled reports do not print within 4 hours, they print at the next scheduled time.

4. In the days of the week fields, type **y** for each day of the week that the report should print.
5. Press **Enter** to save your changes.

Listing scheduled reports

You can list all of the scheduled reports and the time and day that the reports are scheduled to print.

To list scheduled reports:

1. Type **`list report-scheduler`**. Press **Enter**.

   The system displays the **Report Scheduler** screen (Figure 36: Report Scheduler screen on page 94).

Figure 36: Report Scheduler screen

```
 REPORT SCHEDULER

Job Id     Days(smtwtfs)     Time     User     Status     Type
Command

   1          nynynyn          23:00    johnston  waiting    scheduled
   list measurements attendant positions
   4          nnnnynn          23:45    johnston  waiting    scheduled
   list measurements attendant-group
```

Changing scheduled reports

It is easy to reschedule the time and day that a report prints. As an example, let us change the time on job ID 12 so that it prints at 10:00 p.m. (22:00).

To change the report scheduler for job ID 12:

1. Type **`list report-scheduler`**. Press **Enter**.

   The system displays the **Report Scheduler** screen (Figure 36: Report Scheduler screen on page 94).

2. Locate the job ID for the report that you want to change.

   In our example the job ID is 12.

3. Type **`change report-scheduler`** ***12***. Press **Enter**.

   The system displays the **Report Scheduler** screen for job ID 12.

4. In the **Print Time** field, type **22:00**.

5. Press **Enter** to save your changes.

Removing scheduled reports

As your needs change, you may want to remove certain reports from the report scheduler. The following example removes Job 12 from the report scheduler.

Note:
You can use the **`list report-scheduler`** command to determine which reports you want to remove.

To remove job 12 from the report scheduler:

1. Type **`remove report-scheduler`** ***`12`***. Press **Enter**.

   The system displays the **Report Scheduler** screen for job ID 12.

2. Press **Enter** to remove the report.

Note:
If you want to print a different report, you must remove the old report from the report scheduler, and then add the new report.

Analyzing report data

Most of the information displayed in these reports is measured in centum call seconds (CCS). CCS equals the amount of call traffic that is needed to keep one piece of traffic-sensitive equipment busy for 0.6 minutes. To convert CCS to minutes, use the following equation:

minutes = the number of CCS/0.6

For more information, see the *Reports for Avaya Communication Manager*, 555-233-505.

Using attendant reports

Attendant group reports enable you to assess the quality of service provided to anyone who calls your attendant. Monitor these reports to ensure that attendant groups are adequately staffed. There are three attendant reports:

- Attendant Group Measurements report measures attendant group traffic.
- Attendant Positions Report measures individual attendant performance.
- Attendant Group Performance report measures attendant group performance.

The system automatically gathers the information for these reports, so you can use them to view attendant information at any time.

Measuring attendant group traffic

The Attendant Group Measurements report provides peak hour traffic measurements for any attendant group. It displays a summary of attendant group activity for yesterday's peak, today's peak, and the last hour.

To display the Attendant Group Measurements report:

1. Type **`list measurements attendant group`**. Press **Enter**.

   The system displays the **Attendant Group Measurements** screen (Figure 37: Attendant Group Measurements screen on page 97).

Figure 37: Attendant Group Measurements screen

```
                        ATTENDANT GROUP MEASUREMENTS

Grp Meas  ---------Calls----------  ------Time-----  Time  Speed
Siz Hour  Ans Abnd Qued H-Abd Held  Avail Talk Held  Abnd  Ans(sec)
6  1000  100 0    0    0     0     200   80   0     0     0   YEST PEAK
9  1100  106 0    0    0     0     212   76   0     0     0   TODAY PEAK
9  1500  107 0    0    0     0     224   64   0     0     1   LAST HOUR
```

There are several ways to determine if traffic flow is optimal. For example:

- If the **Time Abnd** (time abandon) field approximately equals the average delay, the attendant group is staffed appropriately.
- If the number of calls in the **Time Abnd** field is high, according to your company standards, you may need to schedule additional attendants during peak hours.

For information on how to calculate the average answering delay, and what the data in the fields represent, see the *Reports for Avaya Communication Manager,* 555-233-505.

Measuring individual attendant performance

The Attendant Positions Report provides peak individual attendant position measurements. It displays a summary of each attendant's activity for yesterday's peak, today's peak, and the last hour. This report enables you to assess personnel performance and to identify when additional attendant training is necessary.

To display the Attendant Positions report:

1. Type **`list measurements attendant positions`**. Press **Enter**.

   The system displays the **Attendant Positions Measurements** screen.

Measuring attendant group performance

The Attendant Group Performance report displays the average speed of calls answered for each hour of a 24-hour period, for either yesterday or today.

To display today's Attendant Group Performance report:

1. Type **`list performance attendant today`**. Press **Enter**.

   The system displays the **Attendant Speed Of Answer** screen.

Trunk group reports

Trunk Group Reports can help you detect traffic flow problems such as out-of-service trunks, load balance, or peak-hour blocking.

Note:
If a trunk appears to have intermittent service, use the **`list testcalls summary`** command to determine whether a specific trunk member is not functioning.

If you suspect a trunk is having problems, use Automatic Circuit Assurance (ACA) to monitor the trunk group. For more information about ACA, see the *Avaya Communication Manager Basic Diagnostics Quick Reference*, 03-300365.

Summary of trunk group activity

The Trunk Group Summary Report displays traffic measurements for all trunk groups except for personal central office line groups. The Trunk Group Summary Report displays traffic measurements for yesterday's peak, today's peak, or the last hour.

To display the Trunk Group Summary Report for the last hour:

1. Type **`list measurements trunk-group summary last-hour`**. Press **Enter**.

   The system displays the **Trunk Group Summary Report** screen.

Use this report to determine general traffic flow. For more detailed information about a particular trunk group, see Hourly trunk group activity on page 99.

The Trunk Group Summary Report allows you to determine measurement data such as the trunk group's total usage, the total number of calls, and trunk blockage.

If a trunk is out of service, see Out-of-service trunks on page 101. It is best to make adjustments to a trunk group only when all of the trunks are functioning.

For more information on interpreting the reports, see the *Reports for Avaya Communication Manager*, 555-233-505.

Hourly trunk group activity

Trunk Group Hourly reports are used in conjunction with the Trunk Group Summary Report to locate trunk problems. For example, if the Traffic Group Summary Report indicates a traffic flow problem, run the hourly report to help you locate the problem.

When you run this report, you first specify the trunk group you want to monitor on the Trunk Group Measurement Selection screen. Once you select the trunk group you want to gather data on, the system starts collecting information on the trunk group activity. The Trunk Group Hourly report can display up to 24 hours of information. For example, if you started data collection on Thursday at noon (12:00) you would have 24-hours of data by noon (12:00) on Friday.

To monitor trunk group 12 for the next hour:

1. Type **change meas-selection trunk-group**. Press **Enter**.

   The system displays the **Trunk Group Measurement Selection** screen (Figure 38).

Figure 38: Trunk Group Measurement Selection screen

```
              TRUNK GROUP MEASUREMENT SELECTION

                        Trunk Group Numbers
   1:  44      6:  12      11:         16:         21:
   2:  17      7:          12:         17:         22:
   3:   3      8:          13:         18:         23:
   4: 245      9:          14:         19:         24:
   5:  39     10:          15:         20:         25:
```

2. Move to the next blank field and type **12**.
3. Press **Enter** to save your changes.

   The system records the activity of trunk group 12 for the next hour.

4. After a minimum of one hour has elapsed, type **list measurements trunk-group hourly *12***. Press **Enter**.

   The **Trunk Group Hourly** report displays data from the previous hour.

Out-of-service trunks

The Trunk Out of Service Report lists the trunks that were out-of-service during a selected period of time. This report may include up to five out-of-service trunks and lists how many times each trunk was out during the specified time. The system records trunk-outage data for the last hour, current day, and previous day.

To display the Trunk Out of Service Report for yesterday:

1. Type **`list measurements outage-trunk yesterday`**. Press **Enter**.

   The system displays the **Trunk Out Of Service Report**. If there are no outages, the screen is blank.

The Trunk Out of Service Report samples trunk activity once per hour. Therefore, if the report covers several hours, but indicates only a small number of outages, a trunk member may be providing intermittent service.

Current trunk group status

The Trunk Group Status report displays a current view of the load on various trunk groups by showing the number of calls waiting for service. This report shows data for 60 trunk groups at a time, but you can start the display at any number you want. For example, let us display trunk groups 5 and up.

To display the Trunk Group Status report for trunk group 5:

1. Type **`monitor traffic trunk-groups 5`**. Press **Enter**.

   The **Trunk Group Status** report displays trunk groups 5 through 64. This report shows only administered trunk groups.

2. Press **Cancel** to return to the prompt.

Least used trunks

The Trunks Lightly Used Measurements report lists the five trunk members with the lowest number of calls carried for each trunk group. The system shows trunk lightly-used data for the last hour, current day, or previous day. To display the Trunks Lightly Used Measurements report for today:

1. Type **`list measurements lightly-used-trunk today`**. Press **Enter**.

If the trunk member in the **Calls Carried** field has an unusually low number of calls compared to other trunk members, use Facility Test Calls to determine how a specific trunk member is functioning. To monitor a particular trunk group, use Automatic Circuit Assurance (ACA). For more information, see the *Avaya Communication Manager Basic Diagnostics Quick Reference*, 03-300365.

Measuring call center performance

Standard system reports on Communication Manager provide valuable data about your center's operation.

What should I measure?

Focus on three things:

- How many calls are answered?
- How fast are calls answered?
- How cost-effective is the system?

Communication Manager has three hunt group reports that give you information about agents, hunt groups, trunks, and trunk groups to help you answer these questions. The reports are:

- Hunt Group Measurements
- Hunt Group Performance
- Hunt Group Status

The table below shows you how to monitor the performance of your call center by using these reports. To use the table, pick what you want to measure from the column headings. As you read down the column, each row shows the fields on a particular hunt group report, if any, that measure that aspect of call center performance.

Reports	How many calls are answered?	How fast?	Cost-effective?
Hunt Group Measurements	Calls Ans/Aban.	Speed Ans (sec)	Total Usage Time Available
Hunt Group Performance		Speed Ans (sec)	
Hunt Group Status		LCIQ	

For detailed information on these reports, see the *Reports for Avaya Communication Manager*, 555-233-505.

How many people can use system reports?

The number of system administrators and super-users who can log in simultaneously to view system reports varies with the type of configuration you have. Please see the System Capacities Table for the most up-to-date list of system capacities. The most up-to-date system capacity information is not listed in Communication Manager documentation. Instead, this information is available online at http://www.avaya.com/support.

A scheduled report counts as a login. Therefore, you should schedule reports to print during off-hours.

Viewing hunt group reports

These procedures tell you how to display or print system hunt group reports.

Viewing Hunt Group Measurements reports

The Hunt Group Measurements report displays call data for each hunt group in your system. You can print this report for yesterday's peak, today's peak, or the last hour.

A peak hour is the hour during which the greatest usage of agent time occurred. Use this report to determine the time of day with the most traffic or to measure traffic during the previous hour.

Let us print the Hunt Group Measurements report for today's peak:

1. Type **`list measurements hunt-group today-peak print`**. Press **Enter**.

Viewing Hunt Group Performance reports

The Hunt Group Performance report gives both the slowest hourly average speed of answer for each hunt group and the daily average. You can run the report for today or yesterday. This report can help you quickly find times during the day when your staffing is too low.

To display a Hunt Group Performance report for yesterday:

1. Type **`list performance hunt-group yesterday`**. Press **Enter**.

Viewing Hunt Group Status reports

The Hunt Group Status report displays a current view of your hunt groups. This report shows 32 hunt groups at a time. To display higher-numbered hunt groups, type the number of the first hunt group to be displayed. For example, let us display hunt groups 2 and higher.

To display the Hunt Group Status report:

1. Type **`monitor traffic hunt-groups`** ***2***. Press **Enter**.

   The **Hunt Group Status** report displays hunt groups 2 through 33.

2. Press **Cancel** to return to the prompt.

This report shows all hunt groups in the range, even if you have not administered them.

For more information on interpreting any of these reports, see the *Reports for Avaya Communication Manager*, 555-233-505.

Using security reports

Security Violation Notification lets you know when someone may be trying to break into the system. For information on how to set Security Violation Notification, see the *Avaya Communication Manager Basic Administration Quick Reference*, 03-300363.

7: Understanding call centers

This section introduces you to inbound call centers. It shows how to set up a simple inbound call center and lists things to consider as you plan and design your center.

What is a call center?

A call center is a way of organizing people and equipment to achieve particular business goals. For example, you can use a call center to make several people accessible through one number or to handle multiple calls simultaneously. Call centers work by organizing staff (called agents) with specific functions or expertise into hunt groups.

Call centers use some of the features covered in other chapters of this book: hunt groups, announcements, vectors, and VDNs. In this section, we'll show you how these features work together in a call center.

Planning a call center

Good planning is crucial to setting up an effective call center. Before you administer any part of your call center, you should have a plan that is thorough and specific. Your call center plan should identify:

- the purpose of the call center, meaning what the call center has to do to be successful.
- expected call volume, meaning the number of calls that you expect per day, per week, and per month.
- type of calls, meaning whether the call center should answer internal calls only, external calls only, or both.
- agent functions, meaning the major functions that an agent performs.
- necessary resources, meaning the resources that you must add to the system, such as trunk groups and telephones.

Once you develop a plan for the call center, organize agents according to their functions. These agent groups will be your hunt groups.

Setting up the call flow

Decide how you want your system to handle calls and what you want callers to experience. You may find it helpful to list the possible situations a call may encounter. Set up the call flow by adding hunt groups, setting up queues, adding announcements, and writing vectors. Refer to earlier sections of this book for details on completing these tasks.

Let us set up an example call flow. We'll set up a hunt group so that the work load is evenly distributed and up to 2 calls wait in a queue.

1. Type **add hunt-group next**. Press **Enter**.

   The system displays the **Hunt Group** screen (Figure 39). In our example, the next available hunt group is number 2.

Figure 39: Hunt Group screen

```
                                HUNT GROUP

           Group Number: 2 ACD: n
             Group Name: Accounting                       Queue: y
        Group Extension: 2011                            Vector: y
             Group Type: ucd-mia                 Coverage Path: 1
                     TN: 1           Night Service Destination: 1234
                    COR: 1                     MM Early Answer: n
          Security Code:
    ISDN Caller Display:

           Queue Length: 2
Calls Warning Threshold:                    Port:
 Time Warning Threshold:                    Port:
```

2. In the **Group Type** field, type **ucd-mia**.

   This directs the call to the most idle agent, which is the agent who has waited the longest since handling a call to the hunt group.

3. In the **Queue** field, type **y**.
4. In the **Queue Length** field, type **2**.
5. In the **Vector** field, type **y**.
6. Complete the rest of the **Hunt Group** screen.
7. Press **Enter** to save your changes.

Now that we've created a hunt group, let us write a simple vector that plays announcement 2340. This announcement asks callers to stay on the line. If a call isn't answered in 1 minute, the vector sends the call to voice mail (extension 2000).

Write this vector:

Figure 40: Call Vector screen

```
 CALL VECTOR
    Number: 1            Name: main number calls
Multimedia? n                                        Lock? n
     Basic? y EAS? n  G3V4 Enhanced? n ANI/II-Digits? n ASAI Routing? n
 Prompting? y LAI? n G3V4 Adv Route? n         CINFO? n          BSR? n
01 queue-to split 2 pri m
02 announcement 2340 ("You have reached...")
03 wait-time 60 sec hearing music
06 messaging split 99 for extension 2000
```

Note:

Vectors are an optional feature. To see if your company has vectoring, use the **`display system-parameters customer-options`** command.

To make this vector work correctly, you need to create the announcement at extension 2340 and assign a voice mailbox to extension 2000.

Testing the system

Before your new call center goes live, test the system to make sure it works the way you expect it to work.

- With agents available, call each outside number you've created for the call center. Does an agent in the appropriate hunt group answer?
- With only one agent available in a hunt group, make several calls at once to that hunt group. Now that several calls are in queue, call again and listen to the treatment your call receives in queue.

  If you've administered an announcement, do you hear it? Does it play when it's supposed to? If there's a music source, does it play when it's supposed to? Do queue warning lamps flash when they're supposed to?
- With all agents in Aux Work, call the hunt group. Does the call follow the intended path?

Monitoring your call center

Monitor your call center's performance regularly so you can solve problems quickly and adjust to changing conditions.

It's critical that you monitor a new call center closely for the first month. Use the hunt group and trunk reports described in Using reports on page 89 to track your system. If you underestimated call volume and trunk capacity, or overestimated agent productivity, you need to change your system immediately.

In addition, perform a traffic analysis when your call center begins operation. Work with your Avaya representative and your local network provider. A traffic analysis gives you a comprehensive picture of the demands on your system and how well the system is performing.

For example, trunk reports tell you how often your trunks reach 100% occupancy. Your network provider may be able to tell you how many callers are getting a busy signal from the CO when all of your incoming trunks are in use. You need both pieces of information to determine the total demand that your system needs to meet.

If your business is growing, regular traffic analysis is crucial. Use traffic analysis to project future demands on your system and plan expansions accordingly.

Viewing system capacity

The capacities of your system depend on the type of system you have, the software you're using, and your contract with Avaya. Use the System Capacity screen to view the maximum capacities of your system and your current level of usage. Remember, however, that the capacities you've purchased from Avaya may be lower than the maximums shown on the system.

For example, to find out how many hunt groups your system can support:

1. Type **`display capacity`**. Press **Enter**.

   The system displays the **System Capacity** screen.

2. Go to the page that shows capacities for hunt groups, splits, or skills.

   This screen shows the system limits for hunt groups and how much of this capacity is currently used.

Understanding Automatic Call Distribution

Automatic Call Distribution (ACD) is a Communication Manager feature used in many call centers. ACD gives you greater flexibility to control call flow and to measure the performance of agents.

ACD systems operate differently from non-ACD systems, and they can be much more complex. ACD systems can also be more powerful because they allow you to use features and products that are not available in non-ACD systems.

Enhancing an ACD system

All call center management systems require ACD. These management systems give you the ability to measure more aspects of your center's operation, and in more detail, than is possible with standard Communication Manager reports.

Call vectoring greatly enhances the flexibility of a call center, and most vectoring functions require ACD. Vectoring is a simple programming language that allows you to custom design every aspect of call processing. For more information on call vectoring, see What are vectors? on page 60.

Together, ACD and vectoring allow you to use Expert Agent Selection (EAS). For a variety of reasons, you may want certain agents to handle specific types of calls. For example, you might want only your most experienced agents to handle your most important customers. You might have multilingual agents who can serve callers in a variety of languages.

EAS allows you to classify agents according to their specific skills and then to rank them by ability or experience within each skill. Communication Manager uses these classifications to match each call with the best available agent.

Where to get more information

Avaya Call Management System (CMS) has its own set of complete documentation. For more complete information about call centers and ACD, contact your Avaya representative or see:

- *Administrator Guide for Avaya Communication Manager*, 03-300509
- *Avaya Communication Manager Call Center Software Basic Call Management System (BCMS) Operations*, 07-300061
- *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

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