Troubleshooting Guide

Avaya Business Communications Manager

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Contents

Chapter 1
New in this release

The following section details what's new in Avaya Business Communications Manager (Avaya BCM) 6.0.

Features

The following features are new for Avaya BCM 6.0:

- Analog Trunk support for Find Me/Follow Me using Voice Activity Detection (VAD). For more information about troubleshooting VAD, see Example 1: Cannot dial out from an analog trunk on page 57.
- Avaya BCM 6.0 introduces the new Muti-Image Hard Drive Field Replaceable Unit (FRU). For more information about new LED states related to Multi-Image Hard Drives, see LED states with descriptions of LED combinations on page 18

Chapter 2
Introduction

Avaya Business Communications Manager (Avaya BCM) 6.0 provides private network and telephony management capability to small and medium-sized businesses. The Avaya BCM system integrates voice and data capabilities, and IP Telephony gateway functions into a single telephony system. It also enables you to create and provide telephony applications for use in a business environment.

Purpose

This guide provides procedural information to help you troubleshoot and isolate problems in your BCM network.

Audience

The *Avaya Business Communications Manager 6.0 Troubleshooting Guide* is for use by network administrators responsible for maintaining Avaya BCM networks. This guide is also useful for network operations center (NOC) personnel supporting a BCM managed services solution. The following are the considerations to use this guide:

- be an authorized BCM administrator within your organization
- know basic Avaya BCM terminology
- be knowledgeable about telephony and IP networking technology

Organization

This guide is organized for easy access to information that explains the troubleshooting procedures associated with using the Avaya BCM system. This guide contains information on the following topics:

- Initial Troubleshooting on page 43
- Hardware Troubleshooting on page 15
- Software Troubleshooting on page 45
- Advanced Troubleshooting on page 57
- Recovery trees on page 79
- Downloading Software on page 85
- Troubleshooting Tools on page 89
- Understanding System Messages on page 95
- Useful Troubleshooting Links on page 97
- Frequently Asked Questions on page 99

- Contacting Technical Support on page 111

Acronyms

The following is a list of acronyms used in this guide.

Table 1 List of acronyms

Acronym	Description
3DES	Triple Data Encryption Standard
AES	Analog Encryption Standard
AIS	Alarm Indication Signal
BCM	Avaya Business Communications Manager
BFT	Base Function Tray
BRI	Basic Rate Interface
CbC	Call by Call
CDR	Call Detail Recording
CFA	Carrier Failure Alarms
CIF	Chassis Interface Card
CLID	Calling Line Identification
CPE	Customer Premises Equipment
CSU	Channel Service Unit
DES	Digital Encryption Standard
DHCP	Dynamic Host Configuration Protocol
DN	Directory Number
DNS	Domain Name Server
DNIS	Dialed Number Identification Service
DTM	Digital Trunk Module
ES	Errored Seconds
HTTP	Hypertext Transfer Protocol
IP	Internet Protocol
ISDN	Integrated Switched Digital Network
LAN	Local Area Network
MBM	Media Bay Module
MIB	Management Information Base
MGS	Media Gateway Server
MOS	Mean Opinion Score
MPS	Media Path Server
NAT	Network Address Translation
NCM	Network Configuration Manager

Table 1 List of acronyms

Acronym	Description
NOC	Network Operations Center
NTP	Network Time Protocol
OOF	Out of Frame
PPP	Point-to-Point Protocol
PRI	Primary Rate Interface
PBX	Private Branch Exchange
PSTN	Public Switched Telephone Network
PVQM	Proactive Voice Quality Monitoring
QoS	Quality of Service
RAI	Remote Alarm Indication
RTP	Real-time Transport Protocol
SFTP	Secure File Transfer Protocol
SNMP	Simple Network Management Protocol
SSH	Secure Shell
SSL	Secure Socket Layer
UAS	Unavailable Seconds
UPS	Uninterrruptable Power Supply
USB	Universal Serial Bus
VoIP	Voice over Internet Protocol
VLAN	Virtual Local Area Network
VPN	Virtual Private Network
WAN	Wide Area Network

Symbols and conventions used in this guide

These symbols are used to highlight critical information for the Avaya BCM system:

Caution: Alerts you to conditions where you can damage the equipment.

Danger: Alerts you to conditions where you can get an electrical shock.

Warning: Alerts you to conditions where you can cause the system to fail or work improperly.

Note: A Note alerts you to important information.

Tip: Alerts you to additional information that can help you perform a task.

Security note: Indicates a point of system security where a default should be changed, or where the administrator needs to make a decision about the level of security required for the system.

Warning: Alerts you to ground yourself with an antistatic grounding strap before performing the maintenance procedure.

Warning: Alerts you to remove the Avaya BCM main unit and expansion unit power cords from the ac outlet before performing any maintenance procedure.

Related publications are listed below. For more information, see *Avaya Business Communications Manager Documentation Roadmap* (NN40170-119).

Avaya Business Communications Manager 6.0 Administration and Security (NN40170-603)

Avaya Business Communications Manager 450 6.0 Installation—System (NN40170-303)

Avaya Business Communications Manager 450 6.0 Maintenance (NN40170-503)

Avaya Business Communications Manager 450 6.0 Installation and Maintenance (NN40170-305)

Keycode Installation Guide (NN40010-301)

Avaya Business Communications Manager 6.0 Configuration—Devices (NN40170-500)

Avaya Business Communications Manager 6.0 Configuration—System (NN40170-501)

Telset Administration Guide (NN40070-604)

CallPilot Telephone Administration Guide (NN40170-601)

CallPilot Contact Center Telephone Administration Guide (NN40170-600)

Chapter 3
Hardware Troubleshooting

The information in this chapter applies to both Avaya BCM50 and Avaya BCM450 platforms running Avaya Business Communications Manager (Avaya BCM) 6.0.

Perform the tasks in this chapter to troubleshoot problems related to the BCM50 and BCM450 hardware components.

Navigation

- Troubleshooting Avaya BCM hardware on page 16
- Power on self test (Avaya BCM450 only) on page 30
- Testing basic hardware functionality on page 31
- Monitoring the boot process (Avaya BCM450 only) on page 40

LAN IP Packet Capture

Use the LAN IP packet capture feature to help isolate and resolve voice applications set up issues. You must have DataAdmin privileges to use the LAN Packet capture feature.

You can initiate IP packets capture on the Avaya BCM LAN and store captured IP packets in the output file on BCM filesystem or a USB flash drive. LAN IP Packet Capture is accessed through Business Element Manager at Administration > Utilities > LAN IP Packet Capture. Packets can be captured at the OAM port or any of the LAN ports.

On the Configuration tab, you can select to store the output file on a network drive, a USB flash drive, or on the Avaya BCM system. The configuration options will change depending on where you want to store the output file.

The Filters tab allows you to set filters to reduce or increase the amount of data captured.

The table Reset functions on page 16 lists the fields on the LAN IP Packet Capture panel.

Table 1 Reset functions

Variable	Description
Port	The port you want to capture from. If LAN is selected, all LAN ports will be captured.
Mode	Promiscuous: gives IP Packet Capture access to all packets on the LAN. Non-promiscuous: gives IP Packet Capture access only to packets coming to or from the BCM.
Output format	Allows you to select the output format. The options are: Raw: The raw packet data. Text: converts the data to a text file.
Duration (sec) :	The duration (in seconds) of the capture.
Start	Starts the capture
Stop	Stops the capture
Status	View the status of the capture

IP packets going to WAN port will not be captured if entering one of the router ports regardless of Promiscuous mode state. Any packets entering any of the LAN ports will always be captured if promiscuous mode is ON.

If you are using a USB flash drive and it is disconnected during the capture, the capture session does not stop. Stop the capture manually before disconnecting the USB drive.

Troubleshooting Avaya BCM hardware

Complete the following tasks, in the order shown below, to troubleshoot some of the common problems that you may encounter with the Avaya BCM50 and Avaya BCM450 hardware:

- Check the power source on page 16
- Check LED indicators on page 17
- Check the wiring connections on page 26
- Verify the keycodes on page 27
- Restart or shut down the system on page 28

Check the power source

Begin troubleshooting the hardware by checking the power source:

- check the connection between the power supply and the main unit
- check the connection from the power supply to the electrical outlet

Check LED indicators

After checking the power source, check the LED indicators. This section describes the operation of the Avaya BCM450 system LEDs:

Not all MBMs are supported on all platforms. For more information about which MBMs are supported on each platform, see *Avaya Business Communications Manager 450 6.0 Installation—System* (NN40170-303), *Avaya Business Communications Manager 450 6.0 Maintenance* (NN40170-503), or Avaya *BCM50 6.0 Installation and Maintenance Guide* (NN40170-305).

Avaya BCM450 system status LEDs

The chassis of the Avaya BCM450 contains two LEDs: a Status LED and a Power LED. The Power LED is located at the bottom left of the chassis; the Status LED is immediately above it. The LED states with descriptions of LED combinations table describes the meaning of the system status LEDs in the following situations:

- start-up sequence: LED indicators during the normal start-up process
- safe-mode start-up sequence: LED indicators during a safe-mode start-up
- shutdown sequence: LED indictors during a shutdown or failure
- start-up profile sequence: LED indicators during an initial installation or staging

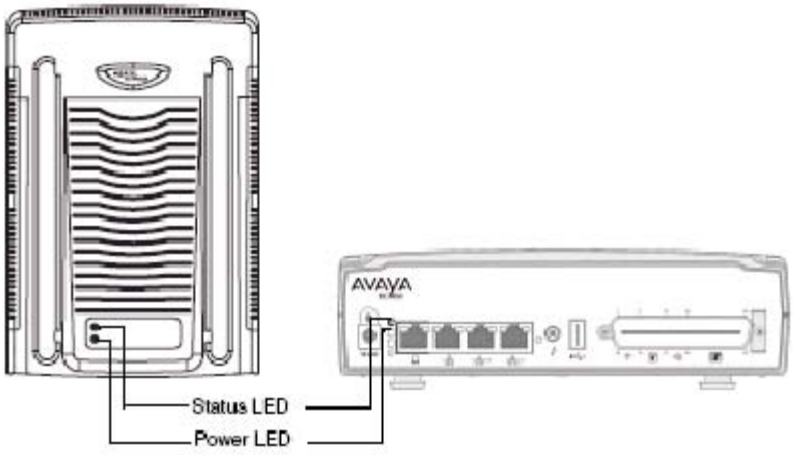
Avaya BCM50 system status LEDs

The information in this section applies to the Avaya BCM50 platform only.

The two system status LEDs on the BCM50 main units (BCM50, BCM50a, BCM50e, BCM50b, BCM50ba, and BCM50be) show the current state of the Avaya BCM50 system.

You can view the system status LEDs on the faceplate and on the top of the main unit, as shown in the figure Location of system status LEDs on an Avaya BCM50 main unit on page 18. The bottom LED is the power LED, and the top LED is the status LED. Under normal operating conditions, both LEDs are solid green.

Figure 1 Location of system status LEDs on an Avaya BCM50 main unit



The LED states with descriptions of LED combinations table describes the meaning of the system status LEDs after the system turn on and is in service.

During BCM50 system startup or restart, the system status LEDs move through a sequence of state changes. If either the power LED or status LED is yellow, the system is initializing and is not ready for service. The LED states with descriptions of LED combinations table shows the key states indicating service availability.

Table 2 LED states with descriptions of LED combinations

Power LED	Status LED	LED combinations description
Start-up sequence		
Solid yellow	Solid yellow	Power is applied to the system.
Solid yellow	Off	POST (Power On Self Test) (duration 9 seconds)
Solid yellow	Solid yellow	System initialization (duration 14 seconds)
Solid green	Solid yellow	Kernel initialization (duration 8 seconds) or Safe OS
Solid green	Blink yellow	Waiting for user input on Multi-Image Hard Drive CLI
Solid red	Solid red	Installation is in progress (Multi-Image Hard Drive)
Solid red	Blink red	Error during installation (Multi-Image Hard Drive)
Solid green	Blinking green	Services initialization (duration 1 minute)
Solid green	Solid green	System running
Solid green	Solid red	Services initialization FAILURE
Safe Mode start-up sequence		
Solid red	Solid green	System is running with manufacturing settings enabled

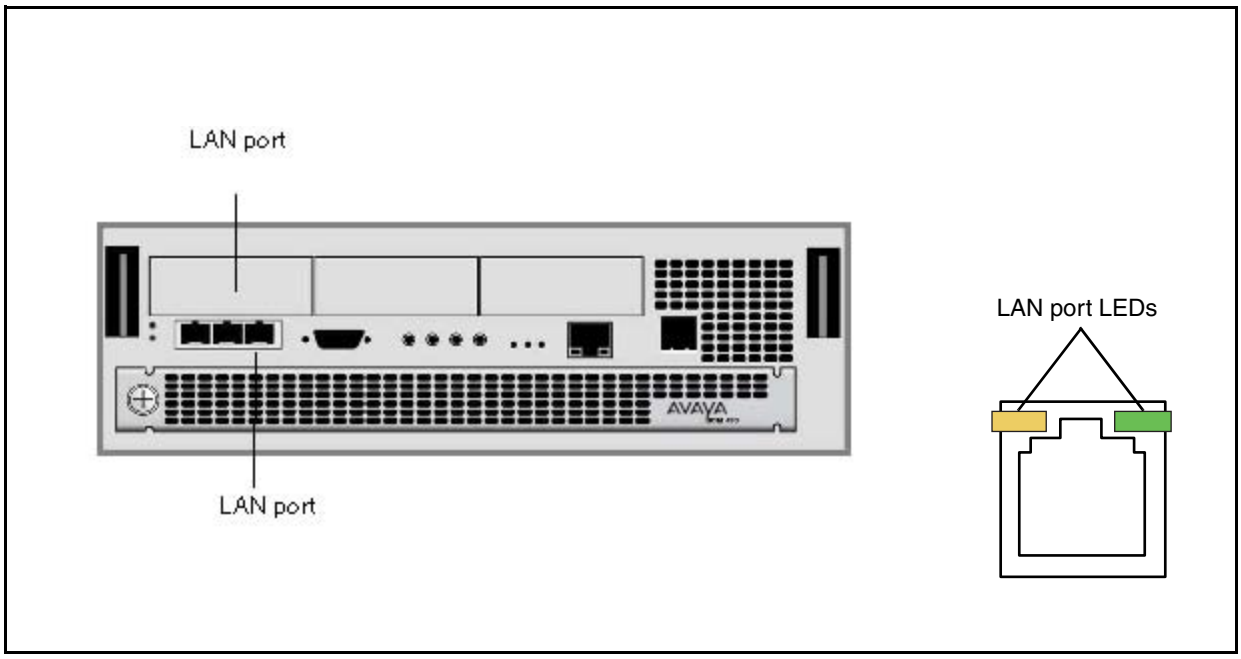
Table 2 LED states with descriptions of LED combinations

Power LED	Status LED	LED combinations description
Solid red	Solid red	System is running in Software Reset mode
Solid red	Blinking yellow	System is running in Configuration Reset mode
Shutdown sequence or FAILURE		
Solid green	Blinking yellow	Graceful shutdown in progress (trigger: Business Element Manager or UPS)
Off	Solid yellow	Graceful shutdown completed.
Solid red	Blinking yellow	Overheat detected; thermal shutdown completed
Solid red	Solid red	Power spike or rail power fluctuation detected
Blinking red	Solid red	Rail power fluctuation; power monitor shutdown completed
Solid yellow	Solid red	Power spike shutdown completed (temperature and rail power OK)
Off	Off	No power; system is shut down (power cable is disconnected)
Start-up profile (LED combinations seen only during initial system install or staging)		
Blinking yellow	Blinking yellow	Start-up profile executing
Solid green	Solid green	Start-up profile successfully applied
Blinking yellow	Blinking red	Start-up profile FAILURE

LAN port LEDs

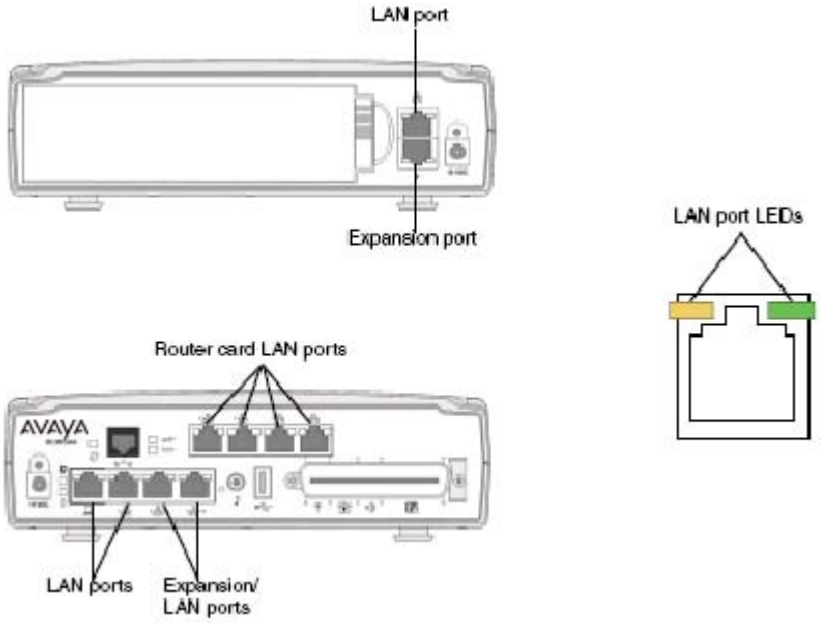
Each LAN port on the main unit and expansion unit has two LEDs. These LEDs indicate the status of the connection for that LAN port. The LAN port LED locations on the Avaya BCM450 main unit table shows the location of these LEDs on the main unit.

Figure 2 LAN port LED locations on the Avaya BCM450 main unit



The figure LAN port LED locations on the Avaya BCM50 main unit on page 21 shows the LAN port LED locations on the Avaya BCM50 main unit. The expansion ports on the BCM50 main unit also function as LAN ports. The expansion port LEDs indicate LAN activity only. The LEDs do not indicate expansion unit presence. The LEDs do not light.

Figure 3 LAN port LED locations on the Avaya BCM50 main unit



The LAN port and expansion port LED indicators table describes the possible LED states for the LAN ports LEDs.

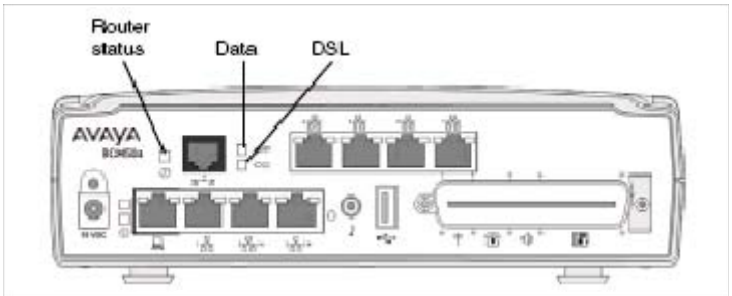
Table 3 LAN port and expansion port LED indicators

LED	Status	Description
Yellow (left LED)	On	The LAN port is operating at 10 Mb/s.
Green (right LED)	On	The LAN port is operating at 100 Mb/s.
Both LEDs	Off	No connection.
Any LED	Flashing	The LAN port is sending or receiving network data. The frequency of the flashes increases with increased traffic.

ADSL router LEDs (Avaya BCM50a and Avaya BCM50ba only)

The three ADSL router LEDs on the faceplate of the Avaya BCM50a and Avaya BCM50ba main units monitor router status, data, and DSL. The figure ADSL router LEDs on the Avaya BCM50a and Avaya BCM50ba main units (BCM50a shown) on page 22 shows the location of the three ADSL router LEDs.

Figure 4 ADSL router LEDs on the Avaya BCM50a and Avaya BCM50ba main units (BCM50a shown)



The ADSL router LED descriptions table describes the possible ADSL router LED states.

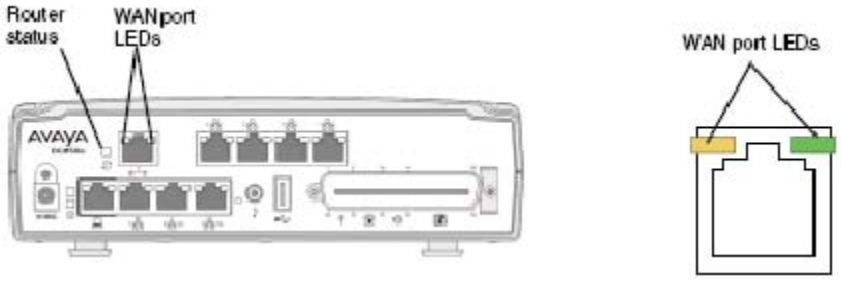
Table 4 ADSL router LED descriptions

LED	Status	Description
Router status	On	The router card is functioning properly.
	Off	The router card is not ready or has malfunctioned.
	Flashing	The router card restarts.
Data	Flashing	The router card is sending or receiving data through the WAN port.
	Off	The router card is not sending or receiving data through the WAN port.
DSL	On	The router card is linked successfully to a digital subscriber line access multiplexer (DSLAM).
	Off	The DSL link is not functioning.
	Flashing	The router card is initializing the DSL line.

Ethernet router LEDs (Avaya BCM50e and Avaya BCM50be only)

The three Ethernet router LEDs on the BCM50e and BCM50be main units monitor the router status and the WAN port. The figure Ethernet router LEDs on the Avaya BCM50e and Avaya BCM50be main units (BCM50e shown) on page 23 shows the location of the three Ethernet router LEDs.

Figure 5 Ethernet router LEDs on the Avaya BCM50e and Avaya BCM50be main units (BCM50e shown)



The LAN port LED indicators table describes the possible Ethernet router LED states.

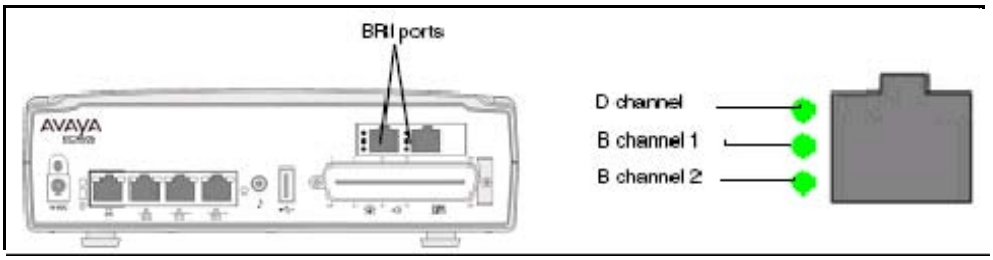
Table 5 LAN port LED indicators

LED	Status	Description
Router status	On	The router card is functioning properly.
	Off	The router card is not ready or malfunctioned.
	Flashing	The router card restarts.
WAN port yellow	On	The WAN port is operating at 10 Mb/s.
WAN port green	On	The WAN port is operating at 100 Mb/s.
Any WAN port LED	Flashing	The WAN port is sending or receiving network data. The frequency of the flashes increases with increased traffic.
Both WAN port LEDs	Off	No connection.

BRI port LEDs on main unit (BRI series only)

The three BRI port LEDs on the Avaya BCM50b, Avaya BCM50ba, and Avaya BCM50be main units monitor the BRI port status. The figure BRI port LEDs on the BCM50b, BCM50ba, and BCM50be main units (BCM50b shown) on page 24 shows the location of the BRI ports and LEDs.

Figure 6 BRI port LEDs on the BCM50b, BCM50ba, and BCM50be main units (BCM50b shown)



The BRI port LED indicators table describes the possible BRI port LED states.

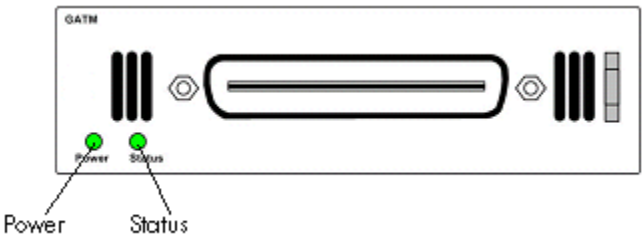
Table 6 BRI port LED indicators

LED (channel)	Status	Description
D	On (green)	D channel is functioning through this BRI port.
B1	On (green)	B channel 1 is functioning through this BRI port.
B2	On (green)	B channel 2 is functioning through this BRI port.

Media bay module LEDs

The two media bay module (MBM) LEDs on an expansion unit show the power and status of the MBM. The figure MBM LEDs on page 24 shows the location of the ⏻ (Power) and Status LEDs on an MBM. The power and status LEDs are in the same location on all MBMs.

Figure 7 MBM LEDs



The MBM LED descriptions table describes the possible MBM LED states.

Table 7 MBM LED descriptions

Power	Status	Description
Off	Off	The MBM has no power, or a failure occurred on the MBM power converter.
On	Off	Avaya BCM450 to expansion unit failure or system initialization.

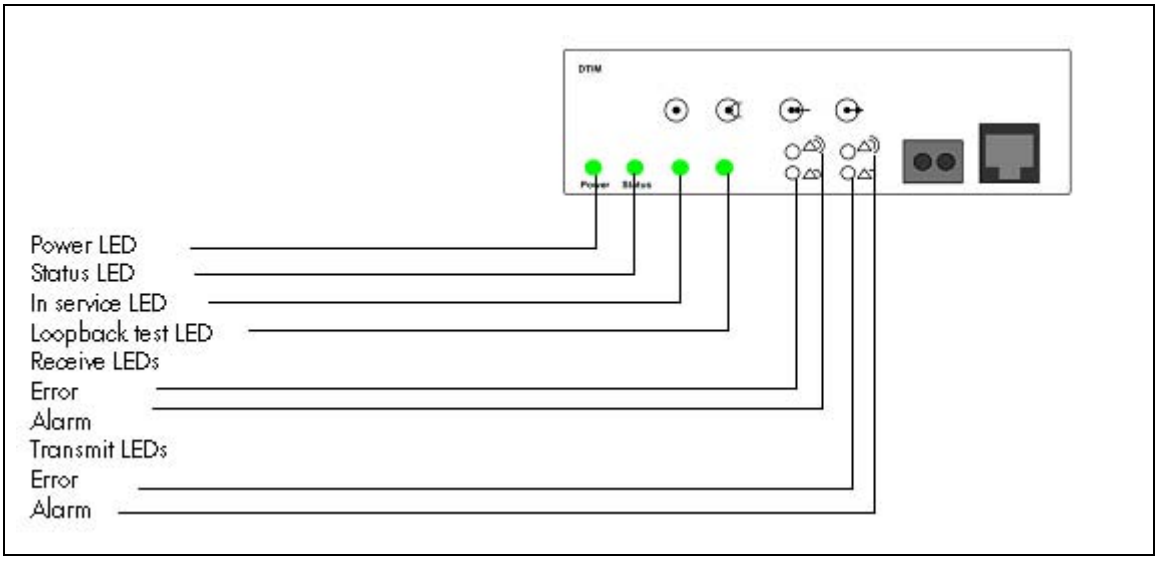
Table 7 MBM LED descriptions

Power	Status	Description
On	Blinking	Hardware is working, but an operational problem exists such as: • no link to the main unit is detected • frame alignment is lost on messages from the main unit • bandwidth not allocated • MBM is in maintenance state • MBM is in download state (GASM, GATM4/GATM8)
Blinking	Blinking	The MBM has power, but a hardware problem exists such as: • partial failure of power converter • thermal overload • fan failure
On	On	The MBM is ready to operate.

DTM LEDs

The DTM has additional LEDs that are not on most other MBMs. Figure 8 on page 25 shows the location of the DTM LEDs.

Figure 8 DTM LEDs



The DTM LED functions table describes the functions of the DTM LEDs.

Table 8 DTM LED functions (Sheet 1 of 2)

LED	Status	Descriptions
Power	–	See “Media bay module LEDs” for details.
Status	–	See “Media bay module LEDs” for details.
In service	Flashing	The T1, ETSI, or PRI trunks are out of service because a loopback test is running or the DTM is initializing.
Loopback test	On	A continuity loopback test is running.

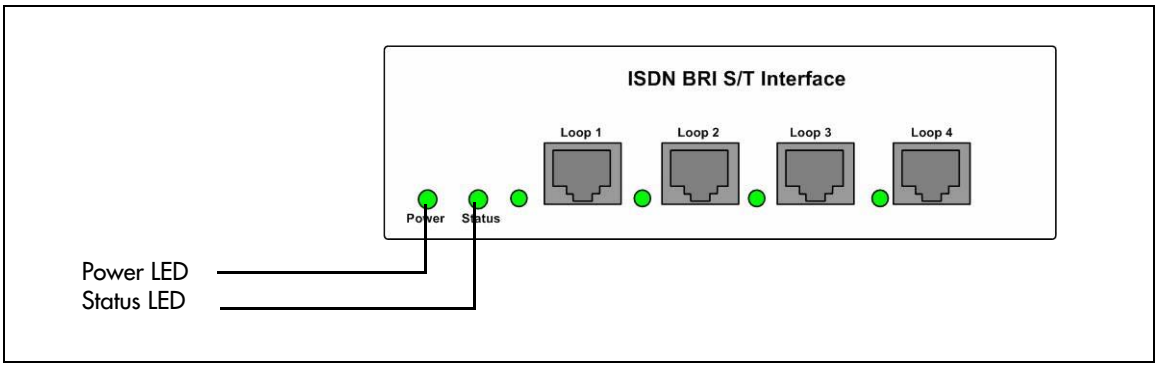
Table 8 DTM LED functions (Sheet 2 of 2)

LED	Status	Descriptions
Receive alarm	On	A problem with the received digital transmission. This half-duplex link does not work.
Receive error	On	A small error as a result of degraded digital transmission. Possible causes are an ohmic connection, water ingress, or too long a loop.
Transmit alarm	On	The DTM cannot transmit. The DTM sends an alarm indication signal (AIS) to the terminating switch. This half-duplex link does not work.
Transmit error	On	The DTM is sending a remote alarm indication (RAI) carrier failure alarm (CFA) to the terminating switch. If the transmit alarm is not on, this error indicates a far-end or cable problem.
All LEDS	Flashing	The DTM is initializing.

BRIM LEDs

The BRIM has one additional LED beside each RJ-48C jack. These LEDs are on when the ISDN line is active. The figure BRIM LEDs on page 26 shows the location of the LEDs on a BRIM.

Figure 9 BRIM LEDs



For more information on the power and status LED functions, see Media bay module LEDs on page 24.

Check the wiring connections

After you check the power source and the LEDs, begin to check the wiring. Check the connections between the following components:

- the expansion unit and the main unit
- the main unit and to the MBMs—make sure that the cables are properly seated and are connected to the correct ports
- for the Avaya BCM450, the power supply and the AC power outlet
- for the Avaya BCM50, the power supply and the main unit and the AC power outlet
- if you are using a UPS, check the connection from:
  - — the USB port on the Avaya BCM450 to the USB port on the UPS
  - — the UPS and the electrical outlet

— the connection from the power supply to both the UPS and the BCM450 main unit

- the lines and extensions connected through the RJ-21 telephony connector
- the auxiliary equipment—connections at the auxiliary terminal block, or at the patch panel
- For more information on wiring connections, refer to *Avaya Business Communications Manager 450 6.0 Installation—System* (NN40170-303) or *Avaya BCM50 6.0 Installation and Maintenance* (NN40170-305).

Verify the keycodes

If a specific feature is not functioning, verify that the feature is included in your installed keycodes. This section provides procedure for verifying the installed keycodes using either Business Element Manager or Telset. For more detailed information about retrieving and entering the keycode for your system, see the *Keycode Installation Guide* (NN40010-301).

To verify the keycodes using Business Element Manager

1. In the **Task Navigation Panel**, select the **Configuration** tab.
2. Select the **System** folder and click the **Keycodes** task.
   The Keycodes panel displays and the installed features appear in the Keycodes list.
3. To enter a new keycode, click **Load File**.
4. Browse to where you saved the keycode file you downloaded from KRS.
5. Click **Open**.
   The file uploads and the feature appears in the Keycodes list.

To verify the keycodes using Telset

1. Select Feature 9*8 from a two-line display telephone.
2. Enter the following user ID and password:
   User ID: **SETNNA**
   Password: **CONFIG**

   The numerical values of the user ID and password are 738662 and 266344, respectively.
3. Press **NEXT** to scroll through the menu and select **Feature Codes**.
4. Press **OK**.

   The system ID (SID) displays.
5. Press **NEXT**.
6. Enter your sequence ID.
7. Press **NEXT** to scroll through the list and perform one or both of the following tasks:

   a. To activate features, select **Feature List**.

   - Press **SHOW** to view the available features.
   - Use the soft keys to activate features for your system.

b To enter a new keycode, select **Entitlement Code**.

- Press **SHOW** to view the current keycode.
- Use the soft keys to modify the keycode for your system.

Restart or shut down the system

You can use the Avaya BCM 6.0 Reset utility to

- perform a warm reset of telephony services
- perform a cold reset of telephony services

You can also perform a Configuration Reset, which restores the configuration settings to factory default, or a Software Reset which restores both the software and configuration settings to factory default. For more information on Configuration and Software resets. Use this procedure to restart the system.

To restart the system

Perform this procedure to restart the system from the Business Element Manager.

1 Select **Administration > Utilities > Reset**.

2 Click the appropriate reset button.

The table Reset functions on page 28 lists the Reset functions.

Table 9 Reset functions

Function	Description	Impact
Warm Reset Telephony Services	Restarts telephony services running on the Avaya BCM450 system	Restarts all telephony services, including LAN CTE, voice mail, and IP telephony. This operation does not affect configuration parameters or programming.
Cold Reset Telephony Services	Resets telephony programming of the Avaya BCM450 system to the factory defaults for that software level	Affects all telephony services, including LAN CTE, voice mail, and IP telephony. Telephony services restart with all telephony programming at default values for the specified region, template, and start DN, for the current software release level. A cold reset erases voice message mailboxes and messages if the DN length is not set to system defaults. For more information about setting the DN length, see *Avaya Business Communications Manager 6.0 Configuration—Devices* (NN40170-500).

Table 10 Avaya BCM50 hardware reset functions

Reset Level	Description	Impact
Level 1	This reset erases all the customer-specific data and restores the default configuration for all components. The LED illuminates yellow to denote Level 1 reset.	Only the system and user configuration data is erased and replaced with default values. The software components are not altered, that is, the system will have the latest release and patch level of the software installed. There will be no Ethernet connectivity during this operation.
Level 2	This reset erases all the customer-specific data and software releases and patches. This also resets the router firmware to the original configuration settings. The LED illuminates red to denote Level 1 reset.	The system re-installs the original factory configuration settings. There will be no Ethernet connectivity during this operation.

Reboot

You can use the Reboot utility to:

- reboot the Avaya BCM450 system
- shut down the system
- reboot the integrated router (BCM50a/e only)
- create a scheduled reboot to take place at a specified time. This can be configured to occur once, daily, weekly or monthly.

The table Reboot functions on page 29 lists the Reboot functions.

Table 11 Reboot functions

Function	Description	Impact
Reboot BCM450 System	Restarts the operating system of the Avaya BCM450 system.	Temporarily stops all services on the system. Restarts all services. This operation does not affect configuration parameters or programming.
System Shutdown	Shuts down the Avaya BCM450.	Stops all services in preparation for removing power from the system.
Add (Scheduled Reboot tab)	Allows you to create a new Scheduled Reboot.	

Table 12 LED Status

LED Status	Description
Blinking power LED	Indicates a user input window; the Avaya BCM50 system is waiting for user input.
Solid power LED	Indicates caution for extreme action.
Red/Green	Level of reset
Blinking status LED	Indicates an interim state, the system is trying to establish user input.
Solid status LED	Indicates confirmation of user selection
Note: Power LED has priority over Status LED.	

Power on self test (Avaya BCM450 only)

The information in this section applies to the Avaya BCM450 platform only.

The power on self test (POST) feature tests basic hardware functionality when the BCM450 system powers up, and stores the results in a log file. You can view the log file for hardware failures.

Viewing the POST log file

1. Use Business Element Manager to transfer the log files to your PC. For more information about how to transfer log files, see *Avaya Business Communications Manager 6.0 Administration and Security* (NN40170-603).
2. View the bootloader.log file.
3. Check the log file for errors. The figure Example: Bootloader.log file with no errors on page 31 shows a bootloader.log file with no errors.

Figure 10 Example: Bootloader.log file with no errors

```
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:09 2008-07-16
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:09 Interface initialized
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:10 RAM detected
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:10 Flash detected
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:14 Reboot Reason: Software Reboot
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:14 Ethernet MAC Address found
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:14 PCI Bus initialized
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:14 Network initialized
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:14 Hard Drive tested
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:22 System initialized
2008-07-16T13:24:45.456 [INFO ] {BootLoader} (18000) - 13:23:27 usb reset;run bcmboot
2008-07-16T13:24:46.653 [INFO ] {BootLoader} (18000) - Finished processing boot loader log
```

The figure Example: Boot file with errors on page 31 shows a file with errors.

Figure 11 Example: Boot file with errors

```
2008-07-16T13:10:45.089 [INFO ] {BootLoader} (18000) - Start processing boot loader log
2008-07-16T13:10:45.188 [WARN ] {BootLoader} (18001) - Self test was unable to provide results. Flash memory
may be malfunctioning
2008-07-16T13:10:45.188 [INFO ] {BootLoader} (18000) - Finished processing boot loader log
```

Testing basic hardware functionality

This section describes how to test the components of the Avaya BCM system, and how to troubleshoot them if they fail the test.

The table Procedures to test and troubleshoot Avaya BCM platform components on page 31 lists the procedures to use to help isolate and identify problems with your BCM hardware:

Table 13 Procedures to test and troubleshoot Avaya BCM platform components

Procedure	Supported on BCM450	Supported on BCM50
To test the main unit on page 32	yes	yes
To troubleshoot the main unit on page 32	yes	yes
To test the expansion unit on page 33	yes	yes
To troubleshoot the expansion unit on page 33	yes	yes
Testing an MBM on page 34	yes	yes
Determining why an Avaya BCM450 MBM does not appear in Business Element Manager on page 34	yes	no
Determining why an Avaya BCM50 MBM does not appear in Business Element Manager on page 35	no	yes
Troubleshooting the FEM on the Avaya BCM450 on page 35	yes	no

Table 13 Procedures to test and troubleshoot Avaya BCM platform components

Procedure	Supported on BCM450	Supported on BCM50
To determine why the ATA 2 does not function on page 35	yes	yes
To determine why there is no dial tone at the ATA2 on page 36	yes	yes
To check the ATA2 wiring on page 36	yes	yes
Reset to factory settings on page 36	yes	yes
To perform a Level 1 reset (configuration reset) on page 40	yes	yes
To perform a Level 2 reset (software reset) on page 40	yes	yes

To test the main unit

If you have the digital station feature included in your installed keycode, use the following test to ensure the main unit is operating properly:

1. Go to an extension that is connected to the RJ-21 telephony connector on the main unit.
2. Check for a dial tone.
3. Use this extension to make a call to another extension on the system.
4. If this system has an expansion unit with a media bay module (MBM) that supports extensions, repeat steps 3 and 4 for an extension connected to the expansion unit.
5. Go to an extension that has access to one of the lines on the main unit.
6. Select the line or line pool to which the line belongs.
7. Check for a dial tone.
8. Make a call using the line or line pool.
9. If this system has an expansion unit with an MBM that supports lines, repeat steps 6 to 8 with an extension that can access one of the lines connected to the expansion unit.

To troubleshoot the main unit

If a test fails, perform the following procedure:

1. Verify that any nonfunctional feature is included in your installed keycode.
2. Check the wiring to the main unit and to the MBMs. Make sure that the cables are properly seated and are connected to the correct ports.
3. Restart the BCM system.
4. Check LEDs.
5. Use Business Element Manager or the Telset Administration feature to check the programming for the lines or extensions that failed the call test.

6 If the programming is incorrect, use the Backup and Restore Utility to load a recent backup of system programming. If a recent backup is not available, correct the programming using Business Element Manager or the Telephone Administration feature.

To test the expansion unit

Use the following test to ensure the expansion unit is operating properly:

1 Make sure that the Avaya BCM450 system is fully booted.

2 Check the power and status LEDs on the MBM that is inserted in the expansion unit. Both LEDs must be solid green. If either LED is not solid green, a problem exists with the MBM or the expansion unit.

3 If the expansion unit has an MBM that supports extensions, go to an extension that is connected to the MBM.

4 Check for a dial tone.

5 Use this extension to make a call to another extension on the system.

6 If the expansion unit has an MBM that supports lines, go to an extension that has access to one of the lines on the MBM.

7 Select the line or line pool to which the line belongs.

8 Check for a dial tone.

9 Make a call using the line or line pool.

To troubleshoot the expansion unit

1 Check that the correct feature for the expansion unit is included in your installed keycode.

2 Check that the expansion port is connected to the proper connector.

3 Check the wiring to the MBM. Make sure that the cables are properly seated and are connected to the correct ports with proper LED indications.

4 Check that the switches on the MBM are all set to on.
If the MBM is a GASM or GATM, all the switches on the right are not on.

To check the MBM switches, you must remove the MBM from the expansion unit.

5 Perform a firmware download to ensure that the correct version is loaded on the ASM/GASM or GATM unit.

6 Use Business Element Manager or Telset Admin to check the programming for the lines or extensions connected to the MBM.

7 Restart the system to ensure that the Avaya BCM450 main unit functions correctly.

8 If the programming is incorrect, use the Backup and Restore Utility to load a recent backup of system programming. If a recent backup is not available, correct the programming using Business Element Manager or the Telephone Administration feature.

Testing an MBM

Perform the following procedure to test an MBM installed in the main unit or expansion cabinet.

For Avaya BCM450, if you are experiencing an issue with an FEM, ensure all DIP switches are set to the On position. The FEM is not supported on the BCM50 platform.

1. Check the Power and Status LEDs on the MBM. Both LEDs must be solid green. If either LED is not solid green, a problem exists with the MBM.
2. Go to an extension on the MBM if it is a station MBM.
   OR
   Go to an extension that has access to one of the lines on the MBM if it is a trunk MBM. Select the line or line pool to which the line belongs.
3. Check for a dial tone.
4. Use this extension to make a call to another extension on the system if it is a station MBM.
   OR
   Make a call using the line or line pool if it is a trunk MBM.
5. Use this extension to make a call to an external telephone number if you are testing a station MBM.

Determining why an Avaya BCM450 MBM does not appear in Business Element Manager

Use the following procedure if an installed MBM does not appear in Business Element Manager.

1. Check that the correct feature is included in your installed keycode.
2. Check that both the Power and Status LEDs on the MBM are solid green.
3. If the Power LED is off, and the MBM is installed in the expansion cabinet, check that the power supply cable is properly seated in the expansion cabinet and the power supply is connected to a working power outlet.
4. Ensure that the MBM is properly seated in the MBM bay.
5. If the Status LED is not solid green, and the MBM is installed in the expansion cabinet, check that the Expansion cable is properly seated in the Expansion port on the expansion cabinet and on the main unit.
6. Ensure that the MBM is enabled using either Business Element Manager or Telset Administration. If the MBM is enabled, disable and re-enable it.
7. Ensure that all DIP switches are set correctly.

Determining why an Avaya BCM50 MBM does not appear in Business Element Manager

1. Check that the correct feature for the expansion unit is included in your installed keycode.
2. Check that both the Power and Status LEDs on the MBM are solid green.
   - If the Power LED is off, check that the power supply cable is properly seated in the expansion unit, and the power supply is connected to a working power outlet. Also check that the MBM is properly seated in the expansion unit.
   - If the Status LED is not solid green, check that the expansion cable is properly seated in the expansion port on the expansion unit and on the main unit.
3. Check that the MBM and expansion unit are enabled using either Business Element Manager or Telset Administration. If the units are enabled, disable them, and then reenable them.
4. Check that all the switches on the MBM are on. If the MBM is a GASM or GATM, all the switches on the right are not set to on. To check the MBM switches, you must remove the MBM from the expansion unit. For more information, see the *BCM50 Installation and Maintenance Guide*.

Troubleshooting the FEM on the Avaya BCM450

This procedure applies to the Avaya BCM450 only.

Perform the following procedure to troubleshoot an installed fibre expansion module (FEM).

1. Ensure that all six connector LEDs are lit.
2. If all six LEDs are not lit, ensure that all six DIP switches are set to the On (up) position.

To determine why the ATA 2 does not function

1. Check for a dial tone using an analog device.
2. Check that AC power is connected to the ATA 2 unit.
3. Check that the correct feature for digital sets is included in your installed keycode.
4. Verify that the ATA2 is connected to a digital station port.
5. Allow sufficient startup time (30–60 sec).
6. Plug an analog device into the phone port of the ATA2 and check for a dial-tone.
7. In Business Element Manager, verify that the ATA 2 is correctly configured:
   a. Select **Configuration, Telephony, Sets, All DNs**.
   b. Select the appropriate DN from the list and click the ATA settings tab. The options for the Device Type are Modem or Telephone.

To determine why there is no dial tone at the ATA2

1. If you hear no dial tone, replace a single-line telephone for the data communication device.
2. If you hear no dial tone at the ATA2 unit:
   a. Disconnect the line side of the ATA2. Connect a digital telephone to the ATA2 port.
   b. Check that the connection from the ATA2 to the hardware works correctly.

To check the ATA2 wiring

1. Use an analog phone to test the ATA2.
2. Check the following connections:
   a. ATA 2 to the terminal
   The resistance must be 200 ohms or less for data applications and 1300 ohms or less for voice applications.
   b. Avaya BCM450 hardware to the ATA2
   The wiring must be equivalent to 800 m of 0.5 mm wire (2600 ft. of 24-AWG) or less. Do not use bridge taps and loading coils between the hardware and ATA2.

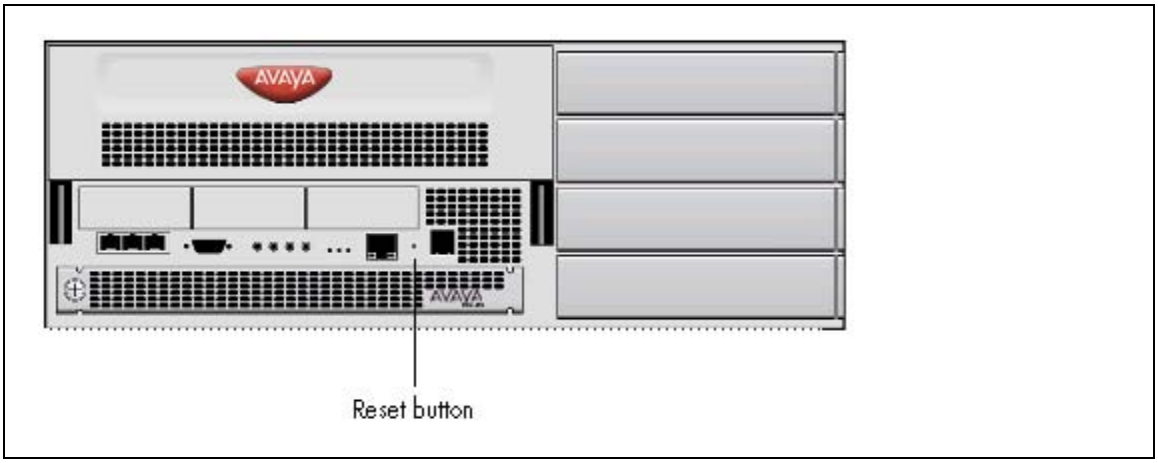
Reset to factory settings

This section describes how to reset the Avaya BCM system to the factory settings or a stable working condition using the reset switch. When the BCM450 is in this condition, you can make further modifications.

You can perform a Configuration Reset (previously known as a Level 1 reset), which restores configuration settings to the factory default, or a Software Reset (previously known as a Level 2 reset), which resets the software and configuration to the factory default. Configuration and Software resets are performed through the Command Line Interface (CLI) (see).

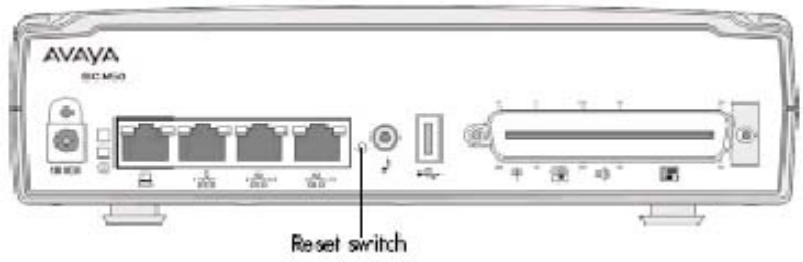
The figure Reset switch location on BCM450 on page 37 shows the location of the reset switch on the BCM450.

Figure 12 Reset switch location on BCM450



The figure Reset switch location on BCM50 on page 37 shows the location of the reset switch on the BCM50.

Figure 13 Reset switch location on BCM50



Some possible situations in which you use the reset feature are:

- If the system is configured incorrectly to an extent that it is no longer functional. The customer must use a Configuration reset to return to the default system programming and restore a previous configuration or reconfigure the system.
- If distributors want to reuse systems, they must first erase all customer-specific data using a Configuration or Software reset.

Reset levels

Reset to factory settings is a stand-alone feature that has the following levels of reset:

- **Configuration Reset (previously known as Level 1**) reset erases all customer-specific data and restores the default configuration for all components. This reset leaves the software components untouched. That is, the system has the latest release and patch level of the software installed. Only the system and user configuration data is erased and replaced with default values. For the Avaya BCM50, no Ethernet connectivity to the system occurs during this operation.
- **Software Reset (previously known as Level 2)** reset erases all customer and system configuration data and all software releases and patches. This reset reinstalls the original factory configuration settings. For Avaya BCM50, a Software reset also resets the router firmware to what was shipped from the factory. No Ethernet connectivity to the system occurs during this operation.

Warning: If you perform a software reset to solve an undetermined problem and still have access to Business Element Manager, you must retrieve all the log files for technical support before performing the software reset. A software reset erases all log files from the system.

Command Line Interface

You can use the Command Line Interface (CLI) to configure basic settings, as well as shut down, reboot, or perform a Configuration or Software Reset on your Avaya BCM450 or Avaya BCM50 system. Two CLI modes are available: Maintenance CLI, and Configuration CLI.

Your user account must be assigned the System-CLI privilege in order to access the CLI.

Before performing a Configuration or Software reset, review all the effects of the levels of reset. See Reset levels on page 38.

This section contains information about the following topics:

Configuration CLI

The Configuration CLI displays when the system is in Main OS mode. The options available on the Configuration CLI are

- 0—Exit. The system exits the CLI to the login prompt.
- 1—Reboot. The system reboots to the Main OS.
- 2—Shutdown. The system shuts down. You need physical access to the BCM hardware to restart the system.

- 3—Safe OS. The system reboots to the Safe OS and waits 1 minute for you to login. When you login within 1 minute, the Maintenance CLI displays. If you do not login within 1 minute, the system changes to the Main OS.
- 4—Configuration Reset. A Level 1 reset occurs. The system resets all configuration data to the factory defaults.
- 5—Software Reset. A Level 2 reset occurs. The system resets all configuration data and software to the factory defaults.
- 6—IP Configuration. You can configure the following basic IP settings:
  - 0—Return to Previous Menu. The system returns to the main menu.
  - 1—Hostname. Provision the hostname of the system.
  - 2—IP Address. Provision the IP address of the system.
  - 3—Subnet Mask. Provision the subnet mask for the IP address.
  - 4—Default Gateway. Provision the default gateway for the system.
  - 5—DHCP Client Mode. Enable or disable the DHCP client.
  - 6—Commit Changes. Save changes to the IP settings.
  - 7—Reload Settings. Reload the existing IP settings.

Maintenance CLI

The Maintenance CLI displays when the system is in Safe OS mode. The Safe OS is a diagnostic mode that you can use if the Main OS is experiencing problems. No applications or telephony services run when the Avaya BCM 6.0 is in Safe OS mode. The options available on the Maintenance CLI are

- 0—Exit. The system exits to the Safe OS login prompt.
- 1—Reboot into Main OS. The system reboots to the Main OS.
- 2—Shutdown. The system shuts down. You need physical access to the Avaya BCM450 hardware to restart the system.
- 3—Reboot into Safe OS. The system reboots to the Safe OS and waits 1 minute for you to login. If you do not login within 1 minute, the system changes to the Main OS.
- 4—Transition to Main OS. The system changes from the Safe OS to the Main OS without restarting.
- 5—Configuration Reset. A Level 1 reset occurs. The system resets all configuration data to the factory defaults.
- 6—Software Reset. A Level 2 reset occurs. The system resets all configuration data and software to the factory defaults.

To perform a Level 1 reset (configuration reset)

1. Access the CLI. For more information about how to access the CLI, see Command Line Interface on page 90.
2. From the Configuration CLI, select option 4—Configuration Reset. If you are using the Maintenance CLI, select option 5—Configuration Reset.
3. The LEDs progress through the start-up and shut down sequence. This process can take more than 2 minutes.
4. A Status LED that is flashing yellow, and a Power LED that is solid red, indicates that a configuration reset is in progress. This process can take more than 2 minutes.
5. The system restarts to the Main OS. This process can take more than 2 minutes.

To perform a Level 2 reset (software reset)

1. Access the CLI. For more information about how to access the CLI, refer to Command Line Interface on page 90.
2. From the Configuration CLI, select option 5—Software Reset. If you are using the Maintenance CLI, select option 6—Software Reset.
3. The LEDs will progress through the start-up and shut down sequence. This process can take more than 2 minutes.
4. A Status LED that is flashing yellow, and a Power LED that is solid red, indicates that a software reset is in progress. This process can take more than 5 minutes.
5. The system restarts to the Main OS. This process can take more than 2 minutes.

Monitoring the boot process (Avaya BCM450 only)

1. Connect a serial cable with a 9-pin female connector from the serial port on a PC to the serial port on the Avaya BCM450.
2. Ensure that you use the following settings:

- bits per second: 115200
- data bits: 8
- parity: N
- stop bits: 1
- no flow control

3. Use a terminal emulation program, such as Hyperterminal or Avaya CLI Manager, to establish a connection to the BCM450.
4. Restart the system and observe the boot process. Figure 14 shows an example of a boot process when there is failed or missing memory; Figure 15 shows an example of a boot process when there is a failed or missing hard drive.
5. If the system starts normally, the CLI login prompt displays when the boot cycle is complete.

Figure 14 Boot process with failed or missing memory

```
BCM U-Boot 1.2.0 (Jul  8 2008 - 18:51:26)
CPU:   8568_E, Version: 1.1, (0x807d0011)
Core:  E500, Version: 2.2, (0x80210022)
Clock Configuration:
      CPU:1333 MHz, CCB: 533 MHz,
      DDR: 266 MHz, LBC:  33 MHz
       QE: 533 MHz
L1:    D-cache 32 kB enabled
      I-cache 32 kB enabled
Board: BMB450 R1.0
I2C:   ready
DRAM:  Initializing
Unable to locate DDR I or DDR II module.
   Fundamental memory type is 0x0
   DDR: *** failed ***
### ERROR ### Please RESET the board ###
```

Figure 15 Boot process with failed or missing hard drive

```
BCM U-Boot 1.2.0 (Jul  8 2008 - 18:51:26)
CPU:   8568_E, Version: 1.1, (0x807d0011)
Core:  E500, Version: 2.2, (0x80210022)
Clock Configuration:
      CPU:1333 MHz, CCB: 533 MHz,
      DDR: 266 MHz, LBC:  33 MHz
       QE: 533 MHz
L1:    D-cache 32 kB enabled
      I-cache 32 kB enabled
Board: BMB450 R1.0
I2C:   ready
DRAM:  Initializing
   DDR: 512 MB
POST: running... POST memory PASSED
L2 cache 512KB: enabled
FLASH:  8 MB
Reboot Reason: Power Recycle
Configuring Mac address from NsSecSi PROM
PCI:  first=0 last=0
PCIe: LTTSM=0x16
PCIe: first=1 last=1
In:    serial
Out:   serial
Err:   serial
Net:   FSL UEC1, FSL UEC0, FSL UEC2, FSL UEC3, FSL UEC4, FSL UEC5, FSL UEC6, FSL UEC7
IDE:   Bus 0: not available
Fatal Error Occurred
```

Chapter 4
Initial Troubleshooting

The information in this chapter applies to both the Avaya BCM50 and the Avaya BCM450 platforms running Avaya Business Communications Manager (Avaya BCM) 6.0.

You can better troubleshoot the problems on your network and reduce their impact by preparing for such events in advance. To do this, you must know the following:

- that your system is properly installed and routinely maintained
- the configuration of your network
- the normal behavior of your network

Navigation

Proper installation and routine maintenance

For more information about detailed installation information, see *Avaya Business Communications Manager 6.0 Installation—System* (NN40170-303).This document also outlines the routine tasks required for operating the BCM50 and BCM450.

Network configuration

To keep track of your network's configuration, gather the information described in the following sections. This information, when kept up-to-date, is extremely helpful when you experience network or device problems.

Site network map

A site network map identifies where each device is physically located on your site, which helps locate the users and applications that are affected by a problem. You can use the site network map to systematically search each part of your network for problems.

Logical connections

With virtual LANs (VLANs), you must know how your devices are connected logically as well as physically.

Device configuration information

You should maintain online and paper copies of your device configuration information. Ensure that all online data is stored with your site's regular data backup. If your site does not have a backup system, copy the information onto a backup disk (such as a CD or zip disk) and store the backup disk at an offsite location.

Other important data about your network

For a complete picture of your network, have the following information available:

- **All passwords**—Store passwords in a safe place. It is a good practice to keep records of your previous passwords in case you must restore a device to a previous software version and need to use the old password that was valid for that version.
- **Device inventory**—It is a good practice to maintain a device inventory, which list all devices and relevant information for your network. The inventory allows you to easily see the device type, IP address, ports, MAC addresses, and attached devices.
- **MAC address-to-port number list**—If your hubs or switches are not managed, you must keep a list of the MAC addresses that correlate to the ports on your hubs and switches.
- **Change control**—Maintain a change control system for all critical systems. Permanently store change control records.
- **Contact details**—It is a good practice to store the details of all support contracts, support numbers, engineer details, and telephone and fax numbers. Having this information available when troubleshooting can save a lot to time.

Normal behavior on your network

When you are familiar with the performance of your network when it is fully operational, you can be more effective at troubleshooting problems that arise. To understand the normal behavior of your network, monitor your network over a long period of time. During this time you can see a pattern in the traffic flow, such as which devices are typically accessed or when peak usage times occur.

To identify problems, you can use a baseline analysis, which is an important indicator of overall network health. A baseline serves as a useful reference of network traffic during normal operation, which you can then compare to captured network traffic while you troubleshoot network problems. A baseline analysis speeds the process of isolating network problems. By running tests on a healthy network, you compile normal data for your network. This normal data can then be used to compare against the results that you get when your network is experiencing trouble. For example, ping each node to discover how long it typically takes to receive a response from devices on your network. Capture and save each device's response time and when you are troubleshooting you can use these baseline response times to help you troubleshoot.

Chapter 5
Software Troubleshooting

The information in this chapter applies to both the Avaya BCM 50 and the Avaya BCM450 platforms running Avaya Business Communications Manager (BCM) 6.0.

Use the information in this chapter to troubleshoot problems related to the BCM software components.

Navigation

Complete the following tasks, in the order shown below, to troubleshoot some of the common problems that you can encounter with the Avaya BCM software:

- Verify the software version on page 45
- Verify the keycodes on page 45
- Check the programming of lines and phones on page 45
- Restoring system data on page 54
- Verify the software inventory on page 55

Verify the software version

In the Business Element Manager, select **Help, About**. A panel displays and provides information about the Business Element Manager, such as the Release level.

Verify the keycodes

If a specific feature is not functioning, verify that the feature is included in your installed keycodes. For information about how to verify the installed keycodes, see Verify the keycodes on page 27.

Check the programming of lines and phones

You can use the Business Element Manager to view the programming of lines and phones. When you view the lines, the information on the panels may vary, depending on the type of line.

The Business Element Manager displays line information in two sections:

- The main section, Trunk/Line data, is located at the top of the screen and provides a table of lines and the current or default settings.
- The bottom section contains three tabs. The contents of the tabs may vary, depending on the line selected in the top table.

— The Properties tabbed panel provides the settings for individual line characteristics.
— The Preferences tab shows information that may vary from trunk to trunk
— The Restrictions tabbed panel allows you to define which restrictions will be active for individual lines. Note that lines that are assigned to the same line pool will automatically assign the same restrictions.
— The Assigned DNs tabbed panel provides a quick way to assign lines to telephones. You must use the DN records panels to assign line pools to telephones.

Check line programming

Use the following procedure to check line programming in your Avaya BCM system.

To check line programming

1. In the **Task Navigation Panel**, select the **Configuration** tab.
2. Select **Telephony > Lines.**
3. Verify that the programming for all lines is correct; see Trunk/Line data on page 46 for an explanation of the fields on the panel.
4. Select a line, and then select a tab:
   a. Select the **Properties** tab and verify that the settings are correct; see Properties on page 48 for an explanation of the fields on the tab.
   b. Select the **Preferences** tab and verify that the settings are correct; see Preferences on page 49 for an explanation of the fields on the tab.
   c. Select the **Restrictions** tab and verify that the settings are correct; see Restrictions on page 52 for an explanation of the fields on the tab.
   d. Select the **Assigned DNs** tab and verify that the settings are correct; see Assigned DNs on page 53 for an explanation of the fields on the tab.
5. Repeat step 4 for the remaining lines.
6. Correct any programming problems, or restore the system data; for more information, see Restoring system data on page 54.

Trunk/Line data

The top-level Table View panel shows line records for all lines active on the system, and the common assigned parameters.

The table Trunk/Line Data main panel on page 47 describes the fields found on the Trunk/Line Data main panel.

Table 14 Trunk/Line Data main panel (Sheet 1 of 2)

Attribute	Value	Description
Line	This list contains all the possible line numbers for the system, including target lines.	Configure only those lines that are active on the system. (Click the Active check box and ensure that the Inactive check box is empty).
Trunk Type	PSTN-based lines, VoIP, Target	There are three main categories of lines: PSTN-based lines: (analog, T1, PRI, BRI) Voice over IP (VoIP) trunks, which connect through the LAN or WAN. Target lines, which are internal channels that provide direct dial capability.
Name	<maximum of seven alphanumeric characters>	Identify the line in a way that is meaningful to your system, such as by the type of line and line pool or the DN it is attached to in the case of target lines.
Control Set	DN <control telephone DN> Default: 221 (default Start DN)	Enter a telephone DN for a telephone that you want to use to turn service off or on for other telephones using this line. The control telephone must have the line assigned, or must be assigned to the line pool the line is in.
	**Tips:** External lines and telephones must be programmed to use one of the Scheduled Services: Ringing, Restriction, and Routing Services. For maximum flexibility, Avaya recommends that you create two different control telephones, one for the lines and one for the telephones. You can turn on a service manually or automatically for all external lines from an assigned control telephone. However, you cannot combine schedules. A service can only be active as normal service or one of the six schedules at any one time. Several schedules can be active at one time, but they must use different services.	
Line Type	Public Private to: <telephone DN> Pool A to O, BlocA to BlocF	Define how the line is used in relation to other lines in the system. • Public line: can be accessed by more than one telephone. • Private line: can be assigned only to one telephone and the prime telephone for that line. Enter the internal number of the telephone. • Pool A - O (analog and T1 lines) BlocA to BlocF (PRI and VoIP lines): assigns the line to one of the line pools. If a line is assigned to a line pool, but is not assigned to any telephone, that line is available only for outgoing calls. Bloc line pools must be used in conjunction with routes and destination codes. Target line*s* cannot be put into line pools.

Table 14 Trunk/Line Data main panel (Sheet 2 of 2)

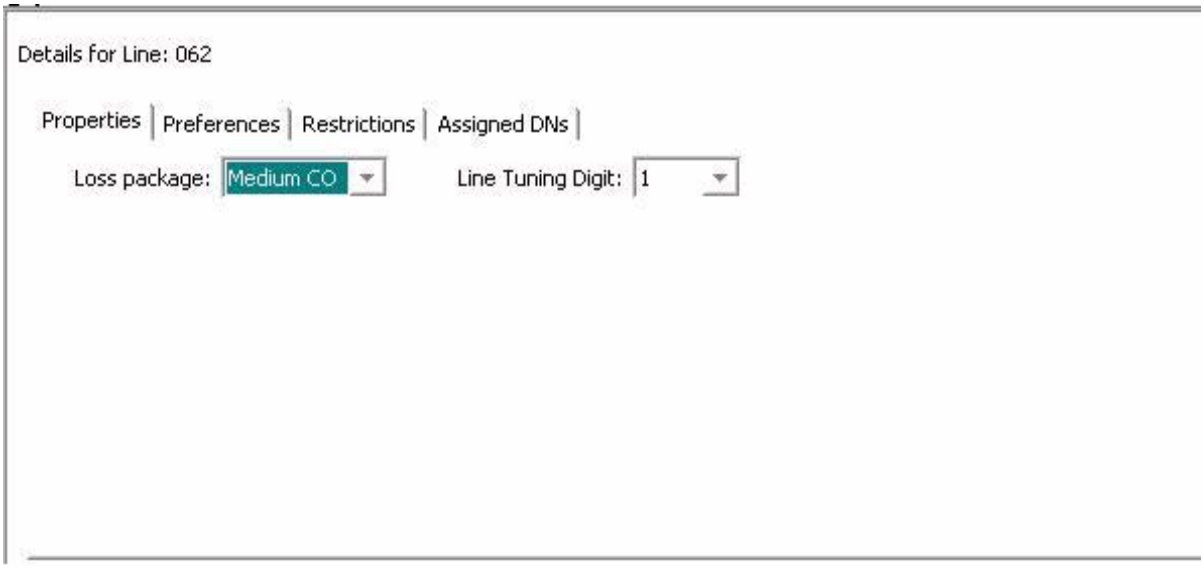
Attribute	Value	Description
Prime set	DN: <telephone DN> None	Assign a telephone to provide backup answering for calls on the line. For an Auto Answer line, calls are redirected if the received number is invalid or the target line is busy, and if the **If busy** parameter is set **To prime**. Each line can be assigned only one prime telephone.
Pub. Received # (Target lines only)	<digits associated with a specific target line>	Specify the digits the system will use to identify a call from the public network to this target line. • A received number cannot be the same as, or be the start digits, of a line pool access code, a destination code, the DISA DN or the Auto DN. • If you are configuring auto-answer BRI trunks to map to target lines, the received number should be the same as the Network DN supplied by your service provider. The call will be directed to the prime telephone for the incoming line if the Network DN is not used.
Priv. Received # (Target lines only)	<digits associated with a specific target line>	Specify the digits the system will use to identify a call from the private network to this target line. • A received number cannot be the same as, or be the start digits, of a line pool access code, a destination code, the DISA DN or the Auto DN. • If you are configuring auto-answer BRI trunks to map to target lines, the received number should be the same as the Network DN supplied by your service provider. The call will be directed to the prime telephone for the incoming line if the Network DN is not used.
Distinct ring	None Pattern 2 Pattern 3 Pattern 4	Choose the distinctive ring pattern that you want to assign to the line. This allows you to provide selective service to calls with differing answer priorities. When more than one line with the distinct ring settings rings at a telephone, the line with the highest priority rings first. • Pattern 4 has the highest ring priority • Pattern 3 has second highest ring priority • Pattern 2 has third highest ring priority • None has the lowest ring priority. By default, all telephones and lines are set to None.

Properties

The Properties tab shows basic line properties. Not all fields apply to all types of lines.

The Properties tab is shown in the figure Properties details panel on page 49.

Figure 16 Properties details panel



The table Properties line settings on page 49 defines the fields on this panel and indicates the lines.

Table 15 Properties line settings

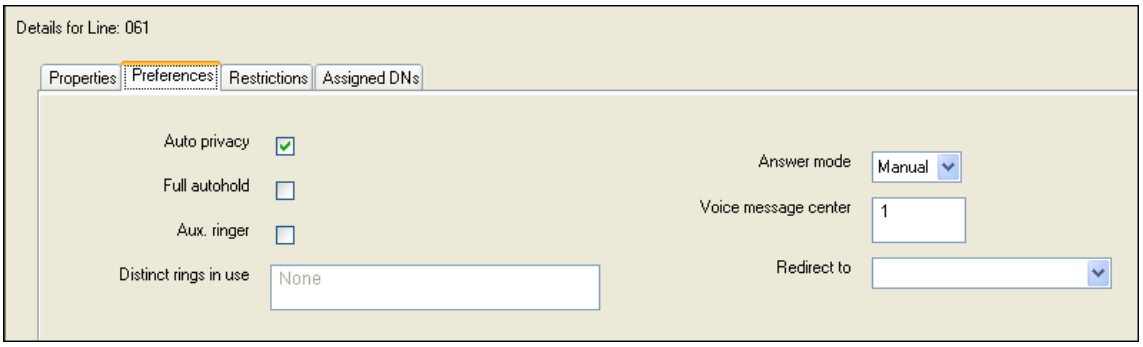
Attribute	Value	Description
Legend: Loop = analog/digital loop; GS = ground start; DID = DID; E&M = E&M; BRI = BRI; DPNSS = DPNSS; VoIP = VoIP; TL = Target. Note: PRI fields are all included under the main table.		
Loss package	**Loop (analog only)**	
	Short CO Medium CO Long CO Short PBX Long PBX	Select the appropriate loss/gain and impedance settings for each line.
Line Tuning Digit	drop-down menu	Select the line tuning digit to use. When a trunk is connected, the Avaya BCM 6.0 starts a call and sends this digit to the CO to turn off the dial tone signal, and then tests the line to optimize the trunk levels. The default digit is 1. You may need to change the default digit if your CO uses the digit 1 to route the call to a special service or to a second dial tone or busy/re-order tone. Select the digit that will result in silence on the trunk.

Preferences

The Preferences tab shows information that may vary from trunk to trunk. Most of this information needs to coordinate with the line service provider equipment.

The figure Preferences details panel on page 50 shows the Preferences tab.

Figure 17 Preferences details panel



The table Preferences details fields for lines on page 50 defines the fields on this panel and indicates the lines.

Table 16 Preferences details fields for lines (Sheet 1 of 3)

Attribute	Value	Description
Legend: Loop = analog/digital loop; GS = ground start; DID = DID; E&M = E&M; BRI = BRI; DPNSS = DPNSS; VoIP = VoIP; TL = Target and DASS2. Note: PRI fields are all included under the main panel.		
Auto privacy	**Loop** **GS** **DID** **E&M** **BRI** **VoIP**	
	<check box>	Define whether one Avaya BCM450 user can select a line in use at another telephone to join an existing call.
Full autohold	**Loop** **BRI** **DPNSS** **VoIP**	
	<check box>	Enables or disables Full autohold. When enabled, if a caller selects an idle line but does not dial any digits, that line is automatically placed on hold if you then select another line. Full autohold is always in place for T1 E&M trunks because it has no meaning for incoming-only T1 DID trunks. The default setting should be changed only if Full autohold is required for a specific application.
Aux. ringer	**Loop** **GS** **DID** **E&M** **BRI** **DPNSS** **VoIP** **TL**	
	<check box>	Turn the auxiliary ringer on or off for all telephones using this line. When programmed on a line, the auxiliary ringer will ring every time a call is received.
	Note: When programmed only on a telephone, no ring occurs for a transferred call. An auxiliary ringer can also be programmed in Services to ring for a line placed into a scheduled Ringing service.	

Table 16 Preferences details fields for lines (Sheet 2 of 3)

Attribute	Value	Description
Legend: Loop = analog/digital loop; GS = ground start; DID = DID; E&M = E&M; BRI = BRI; DPNSS = DPNSS; VoIP = VoIP; TL = Target and DASS2. Note: PRI fields are all included under the main panel.		
ANI Number	**DID**	**E&M**
	<check box>	Define whether the telephone number of the caller will be shown for this line. For T1 E&M and T1 DID trunks connected to a DTM, this setting only appears if Signaling is set to WinkStart. The central office must deliver ANI/DNIS in DTMF mode. No additional equipment is required.
DNIS Number	**E&M**	
	<check box>	Defines whether the digits dialed by an external caller on this line will be shown.For T1 E&M trunks connected to a DTM, this setting only appears if Signaling is set to WinkStart and Answer mode is set to Manual.
Distinct Rings in use	<read-only>	Indicates if a special ring has been assigned. See Distinct Ring on the main table.
Answer mode	**Loop** **GS** **E&M** **BRI** **DPNSS**	
	Manual Auto	Define whether a trunk is manual or automatic answer. Auto answer mode allows the trunk to be a shared resource by the system telephones. This shared resource is created through routing to target lines or using DISA. For auto answer trunks being used to allow remote call-in from system users, the trunk can be configured to answer with a straight dial tone, if DISA has not been enabled. It can also be configured to answer with a stuttered dial tone if DISA is enabled and the caller is expected to enter a CoS password. The CoS password defines which system features the caller is permitted to access. Manual answer trunks are assigned to one or more telephones. The assigned telephones exclusively own the line.
	Note: You require Disconnect supervision on the line if loop start trunks are to operate in auto-answer mode.	
Answer with DISA	**Loop** **GS** **E&M** **BRI**	
	<check box>	Define whether the system prompts a caller for a six-digit class of service (CoS) password. This setting appears for T1 loop start, T1 E&M lines that have auto-answer mode, and analog trunks. Set this option to No for T1 E&M lines on a private network that have auto-answer mode.
If busy	**TL**	
	To Prime Busy Tone	Define whether a caller receives a busy tone or the call forwards to the prime telephone when the target line is busy. Busy tone only works for PRI trunks.
	Tips: The duration of an open switch interval (OSI) before BCM450 disconnects a call is programmed by the Disconnect timer setting.	

Table 16 Preferences details fields for lines (Sheet 3 of 3)

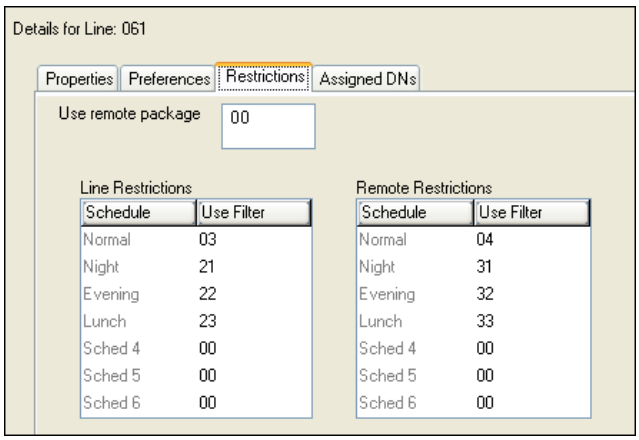
<table>
<tr><th>Attribute</th><th colspan="2">Value</th><th colspan="5">Description</th></tr>
<tr><td colspan="8">Legend: Loop = analog/digital loop; GS = ground start; DID = DID; E&M = E&M; BRI = BRI; DPNSS = DPNSS; VoIP = VoIP; TL = Target and DASS2. Note: PRI fields are all included under the main panel.</td></tr>
<tr><td rowspan="2">Voice Message Center</td><td>Loop</td><td>GS</td><td>DID</td><td>E&M</td><td>BRI</td><td>DPNSS</td><td>VoIP</td><td>TL</td></tr>
<tr><td colspan="2">Center 1 - Center 5</td><td colspan="6">If this line connects t o a remote voice mail, either through the private network or at the Central Office, indicate which Center number has been configured with the contact number.The system calls that number to check voice mail messages when a message indicator is presented to a telephone.</td></tr>
<tr><td rowspan="2">Redirect to</td><td>Loop</td><td>GS</td><td>DID</td><td>E&M</td><td></td><td></td><td></td><td>TL</td></tr>
<tr><td colspan="2"><dial string></td><td colspan="6">Enter a dial string (including destination code) to redirect the line to an external telephone, such as a call attendant on another system.
If you want to stop redirection, you need to delete the dial string and allow the record to update.
Warning: If the dialstring is set up, the line will immediately be redirected out of the system not ringing any telephone.</td></tr>
<tr><td colspan="8">Warning: Enable modules
If you disabled any trunk media bay modules prior to performing programming, enable them now to ensure your system will function properly.</td></tr>
</table>

Restrictions

Assigning Line restrictions and Remote Access Package restrictions are part of the configuration for controlling calls out of the system (line restrictions) and into the system from a private network node or from a remote user calling in over the PSTN lines (Remote Access Packages).

The figure Restrictions tab on page 53 shows the restrictions for a line.

Figure 18 Restrictions tab



The table Restrictions on page 53 describes the fields on this panel.

Table 17 Restrictions

Attribute	Values	Description
Use remote package	<remote package #>	If the line is being used to receive external calls or calls from other nodes on the private network, ensure that you indicate a remote package that provides only the availability that you want external callers to have. This attribute is typically used for tandeming calls.
Schedule	Default: Normal, Night, Evening, Lunch, Sched 4, Sched 5, Sched 6	
Line Restrictions - Use Filter	<00-99>	Enter the restriction filter number that applies to each schedule. (controls outgoing calls)
Remote Restrictions - Use Filter	<00-99>	Enter the restriction filter that applies to each schedule. This setting provides call controls for incoming calls over a private network or from remote user dialing in over PSTN)

Assigned DNs

The Assigned DNs tabbed panel displays the DN properties for lines that are assigned to telephones.

This information can also be configured on the DN record. Any information added, deleted or modified in this table reflects in the DN record.

Note: Lines that do not allow single-line assignment, such as PRI lines and VoIP lines, will not display this tabbed panel.

Restoring system data

If the programming of lines and extensions is incorrect, you can restore from an archive file, or you can restore the system to factory defaults. This section provides the procedures to follow to restore system data from an archive file, and to restore factory defaults. For information about the effects of performing a restore operation, or about optional components, see *Avaya Business Communications Manager 6.0 Administration and Security* (NN40170-603).

Restoring data from an archive

Caution: A backup operation can interrupt services running on the Avaya BCM. A warning displays whenever the backup will cause a service interruption. If you want to perform a backup that does not affect the system, you can exclude services that would be affected. Alternatively, you can include these services and perform a backup at a time when the system is typically not in use.

To restore data from an archive

1. In the task panel, click the **Administration** tab.
2. Open the **Backup and Restore** folder, and then click **Restore**.
   The **Restore** panel opens. The **Restore From** selection field has Avaya **BCM** as a default value.
3. In the **Restore From** selection field, select the location of the archive file to restore:
   - BCM
   - My Computer
   - Network folder
   - FTP server
   - SFTP server
   - USB storage device
   - Factory Default
4. Click the **Restore** button.
   The **Select Components to Restore** window opens.
5. Select the optional components that you want to include from the backup file.
6. Click the **OK** button.
   A warning window opens and displays information about components that will be affected by the restore operation. Read the warning carefully before proceeding.
7. Click the **Yes** button to proceed.
   A progress window opens. When the operation is complete, the **Restore Complete** window opens.
8. Click the **OK** button.

Restoring the factory configuration

Caution: A restore operation is a service-affecting operation. A number of services running on the Avaya BCM system are stopped and then restarted using the restored configuration or application data. A reboot is required if you choose Keycodes as a restore option. It will take several minutes before Voicemail is working again.

To restore the factory configuration

Your Avaya BCM is delivered with a backup file that was created at the factory. This file can be a helpful starting point if you decide to completely reconfigure your BCM and you want to erase the settings programmed on your device. Although you can select individual components to restore, Avaya recommends that you restore all components when using this option.

1. In the task panel, click the **Administration** tab.
2. Open the **Backup and Restore** folder, and then click **Restore**.
   The **Restore** panel opens.
3. In the **Restore From** selection field, select **Factory Default**.
   A warning dialog box displays.
4. Click the **Restore** button.
   The **Select Components to Restore** panel opens.
5. Select the optional components that you want to include from the backup archive.
6. Click the **OK** button.
   A warning window opens and displays information about components that will be affected by the restore operation. Read the warning carefully before proceeding.
7. Click the **Yes** button to proceed.
   A progress window opens. When the operation is complete, the **Restore Complete** window opens.
8. Click the **OK** button.

Verify the software inventory

This section provides information about how to verify the level of software components and obtain updates to your software inventory. For information about applying software updates, see *Avaya Business Communications Manager 6.0 Administration and Security* (NN40170-603).

Viewing the inventory of Avaya BCM software

Avaya BCM software is organized into software components that you can individually update as required. The version of each software component is tracked so that you can determine the exact software release level of a BCM to the component level.

You can view the complete inventory of software installed on the BCM. The Software Inventory table displays all the software components installed on the system, the functional group and the software version of each component.

The table Information displayed in the Software Component Version Information table on page 56 lists the information displayed in the Software Component Version Information table.

Table 18 Information displayed in the Software Component Version Information table

Column	Description
Component	The name of the software component installed on the BCM450. For example, backup-recovery.
Group	The functional group to which the software component belongs. For example, Operating System.
Version	The version of the software component.

You can change the order of the information displayed in the table by clicking a column heading and dragging it to a new place in the table. You can also sort the information in a column by descending or ascending order, by clicking the column heading.

To view the Avaya BCM software inventory

1. In the task panel, click the **Administration** tab.
2. Open the **Software Management** folder, and then click the **Software Inventory** task. The **Software Inventory** panel opens.
3. View the details in the **Software Component Version Information** table.

Obtaining software updates

Before you can apply a software update to your Avaya BCM, you must obtain the software update and unzip the file. Authorized Avaya partners can download BCM software updates from the Avaya Technical Support web page. For more information about obtaining updates from the Avaya Technical Support web page, see www.avaya.com/support.

Chapter 6
Advanced Troubleshooting

The information in this chapter applies to both the Avaya BCM50 and Avaya BCM450 platforms running Avaya Business Communications Manager (BCM) 6.0.

This chapter contains examples of advanced troubleshooting procedures. You must be a system administrator to perform these procedures.

Navigation

Example 1: Cannot dial out from an analog trunk

When you cannot dial out from an analog trunk, you may experience the following problems in your network:

- you are unable to reach a destination number when you dial it
- there is no dial tone
- instead of a dial tone, you hear a re-order or fast-busy tone
- you hear a “wrong number” message from the central office
- if you are attempting to make a Find Me/Follow Me call, your external destinations do not ring, or stop before you pick up the call

Use the following procedure when you cannot dial out from an analog trunk.

Troubleshooting example 1a

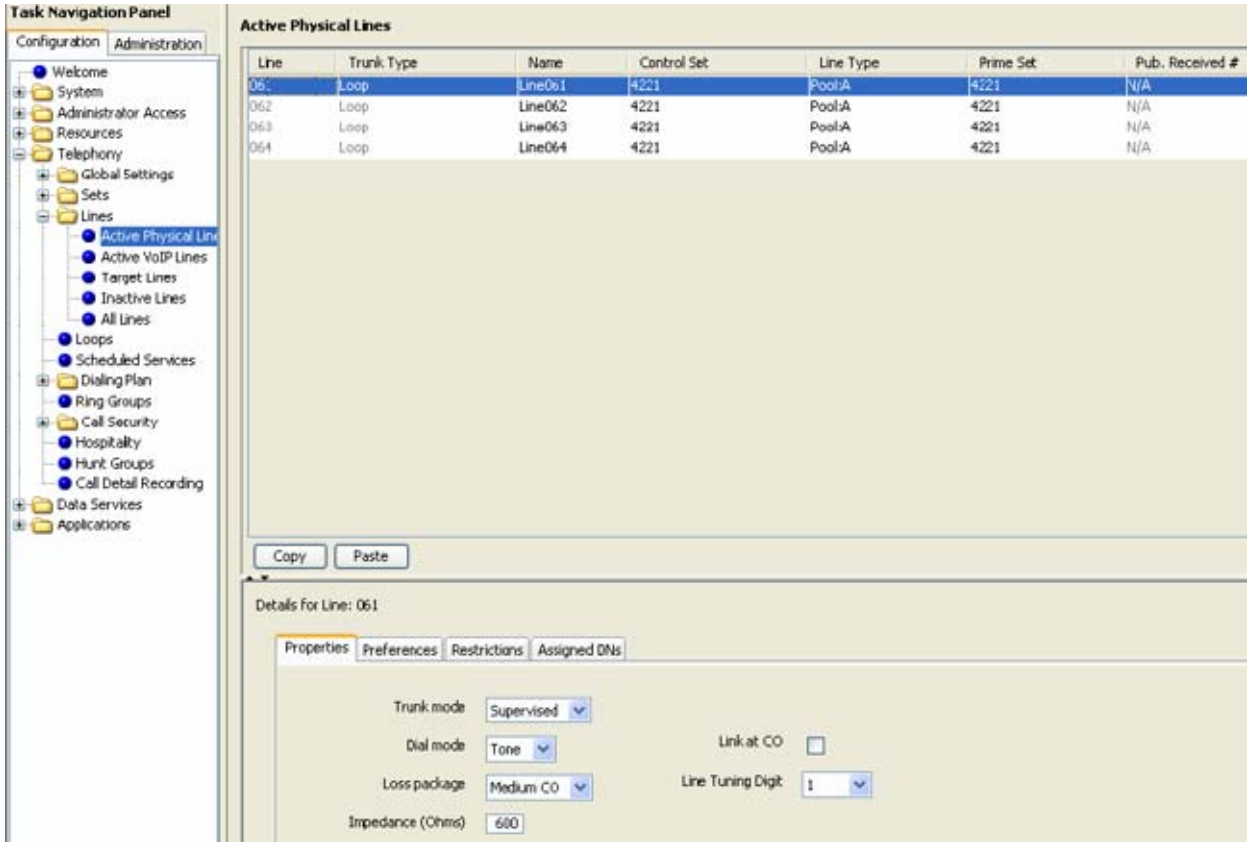
1. Check that the LED indicators on the Avaya BCM Chassis and the MBM are solid green.
2. Using an analog test set, verify that a dial tone is present at the MBM termination point.

3 From the Business Element Manager, select **Configuration > System > Keycodes** to view the list of installed features.

4 Verify that the appropriate keycode is active. For analog trunk modules, the keycode is **Exp Port**, and for BCM50 built-in trunks (main chassis), the keycode is Int Analog Trunk.

5 Select **Configuration, Resources > Telephony Resources** and select the appropriate trunk. Verify that the trunk is active.

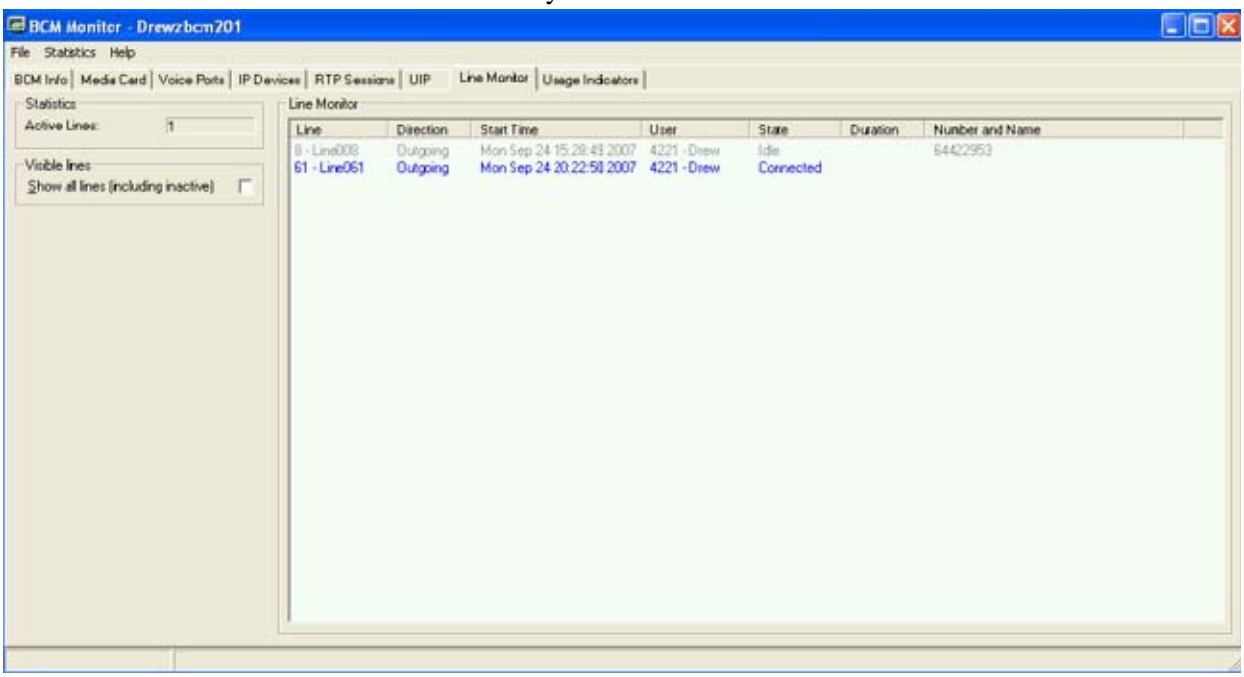
6 Select **Configuration, Telephony > Lines > Active Physical Lines.** Select the appropriate line and verify that it is provisioned correctly. The Line Type should be Pool A, the Trunk Mode should be Supervised, and the Dial Mode should be Tone.



7 Select **Configuration, Telephony > Sets > Active Sets.** Select the appropriate set and verify that it is provisioned correctly. On the **Line Assignment** tab, verify that the **Appearance Type** is one of the following: appear only, appear and ring, or ring only.

8 Select **Administration > Utilities > BCM Monitor,** and then click **Launch BCM Monitor**.

9 Select the **BCM Info** tab and verify the status of the line.



Troubleshooting example 1b

1 If you are attempting to use Find Me/Follow Me over an analog trunk, log on to Set Based Admin. For more information about Set Based Admin, see *Avaya Business Communications Manager 6.0 Telset Administration Guide* (NN40170-604).

2 To ensure that Voice Activity Detection is enabled, navigate to **System prgrming> AnlgTrks VAD > VAD Enabled**. If **VAD Disabled** appears as a parameter instead, then Voice Activity Detection is disabled.

3 If VAD is enabled and Find Me/Follow Me calls are still being dropped, adjust the VAD parameters to account for line noise. Table 19 on page 60 details the available VAD parameters available under System prgrming> AnlgTrks VAD > VAD Parameters.

Table 19 VAD Parameters

Parameter	Description
SpchSlow	The system uses this value when the DSP VAD algorithm detects a "possible tone" or "unwanted spike" and delays speech detection for this value times 10 milliseconds (default = 10, or 100 milliseconds). You must adjust this value for each analog trunk. This value can be increased to prevent a VAD misdetection. Range = 10 - 32767.
SpchFast	The system uses this value to delay speech detection by 10 milliseconds for every increment of one. The default value is 6 meaning that it takes at least 60 milliseconds to detect speech. In normal circumstances this value should not change. In some situations where the call progress tones are received with fluctuations in energy level, increasing this value may prevent false VAD detection at the cost of delaying actual speech detection. Range = 1 - 10.
NoiseFloor	This value is the average noise level in the channel. The speech detection algorithm considers a signal as valid speech if its short term average energy in the past 50 milliseconds is greater than this value, otherwise it will consider this as noise. The value can be converted to dB using this formula: Noise floor in dB = Log10(NOISE_FLOOR/ 2^20)*10; The default value is 10 so the noise level is between -50dB to -15dB. Range = 0 - 65535

Parameter	**Description**
EdgeThrsh	This value is the minimum energy level before sound can be considered an "edge of a tone" energy or "unwanted spike". The value can be converted to dB using this formula: Edge Threshold in dB = Log10(EDGE_THRESHOLD/ 2^20)*10; The default value is 900, so all spikes in the channel with more than -30dB and have been jumped in energy level by a factor of PeakRatio will be delayed for speech detection by the SpchSlow value. Increasing this value will improve speech detection time at the cost of possible misdetection when there is any unwanted spike in the channel. You must adjust this value for each analog trunk. The minimum value of this parameter is the minimum energy of an "unwanted spike" for all analog trunks in the system. Range = 0 - 65535
PeakRatio	The DSP VAD algorithm uses this value to detect the start of a "possible tone" or an "unwanted spike". The default value of this parameter is 10 meaning that the average energy in the last 20 milliseconds must be 10 times bigger or smaller than the current energy to be considered as a "possible rising/falling edge" of tone energy or a possible spike. You can decrease this value for channels with weak progress tones and VAD misdetection. You can increase this value if there is a delay in speech detection. Lowering the number causes more delay in speech detection. Higher numbers increase the possibility of VAD misdetection for low amplitude call progress tones. Range = 1 - 4095

Parameter	Description
FixFrmNum	This value indicates the minimum number of speech frames in the past 10 frames. Each speech frame is 10 milliseconds. The system uses this value to detect the rising and falling edges of a tone. You can decrease this value for tones with significant fluctuation during the tone ON period. You can increase this value to increase the speech detection time at the cost of possible misdetection during a call progress tone. Range = 1 - 10
VarFrmNum	This value indicates the minimum number of frames in the past 10 frames that violate the steady state condition after a possible tone edge detection. Each speech frame is 10 milliseconds. This value detects the rising and falling edges of a tone. You can increase this value to increase the speech detection time at the cost of possible misdetection during a call progress tone. Range = 1 - 10

Example 2: Cannot dial out from a SIP or H323 VoIP trunk

When you cannot dial out from a SIP or H323 VoIP trunk, you may experience the following problems in your network:

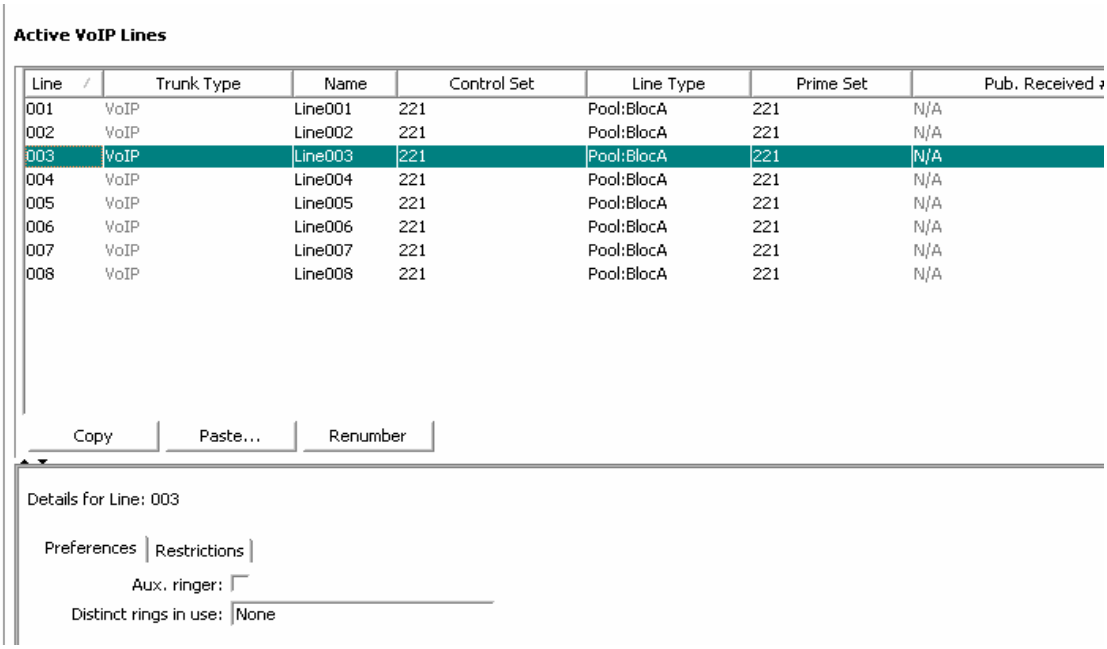
- you are unable to reach a destination number when you dial it
- there is no route to the destination

Use the following procedure when you cannot dial out from a SIP or H323 trunk.

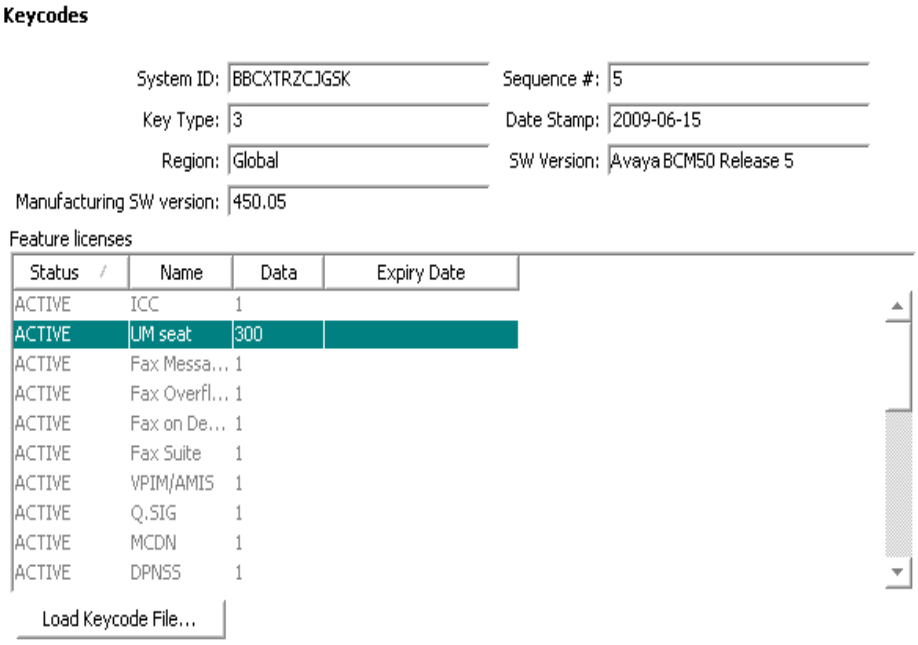
Troubleshooting example 2

1. Check that the LED indicators on the Avaya BCM Chassis are solid green.
2. From the Business Element Manager, select **Configuration > System > Keycodes** to view the list of installed features.

3 Verify that the appropriate keycode is active. For H323 trunks, the keycode is **VoIP GW Trunk**, and for SIP trunks, the keycode is **SIP GW Trunk**.

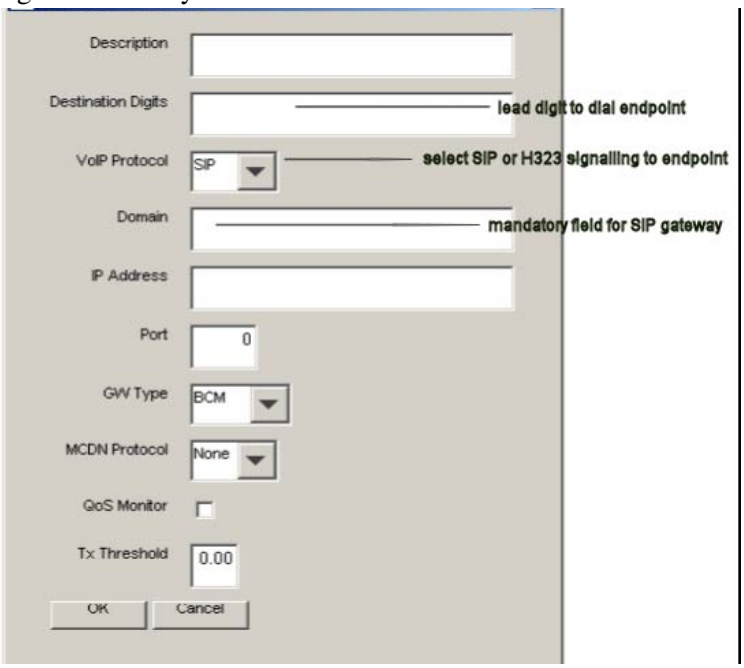


4 Select **Configuration > Telephony > Line > Active VoIP Lines.** Select the appropriate line and verify that the Control Set and Prime Set are provisioned correctly.

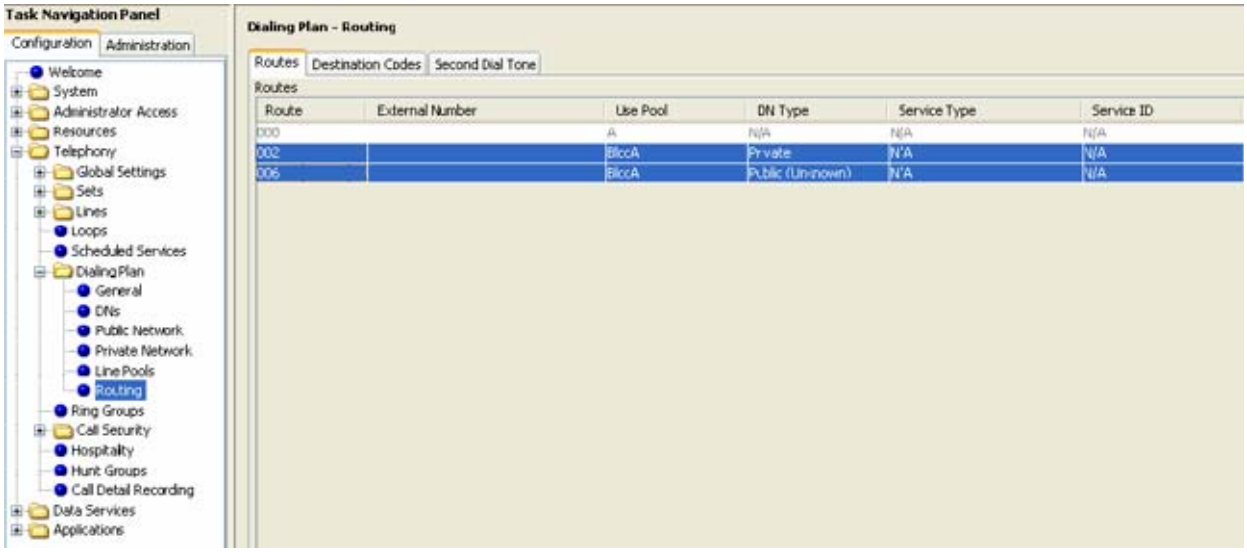


5 Select **Configuration > Resources > Telephony Resources** and select the appropriate trunk.

6 Click the **Add** button to open the **Add Remote Gateway** dialog box. Verify that the remote gateway is configured correctly.

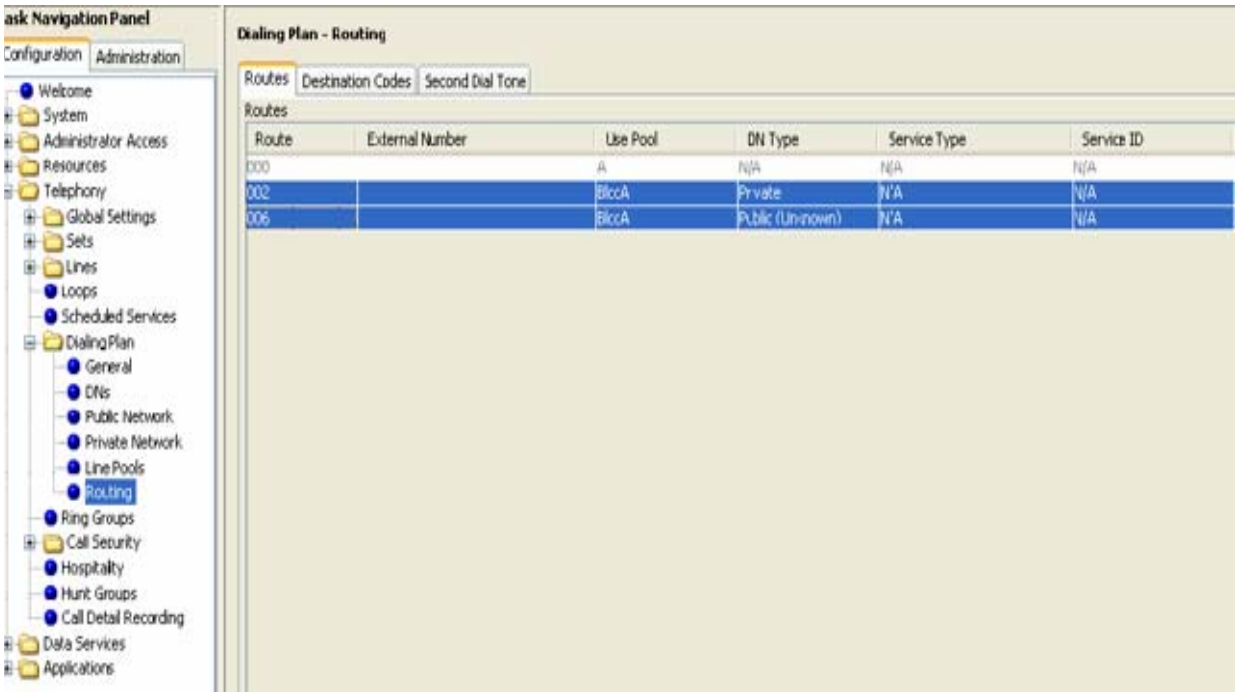


7 Select **Configuration > Telephony > Dialing Plan > Routing** and select the **Routes** tab. Verify that the route is configured correctly.



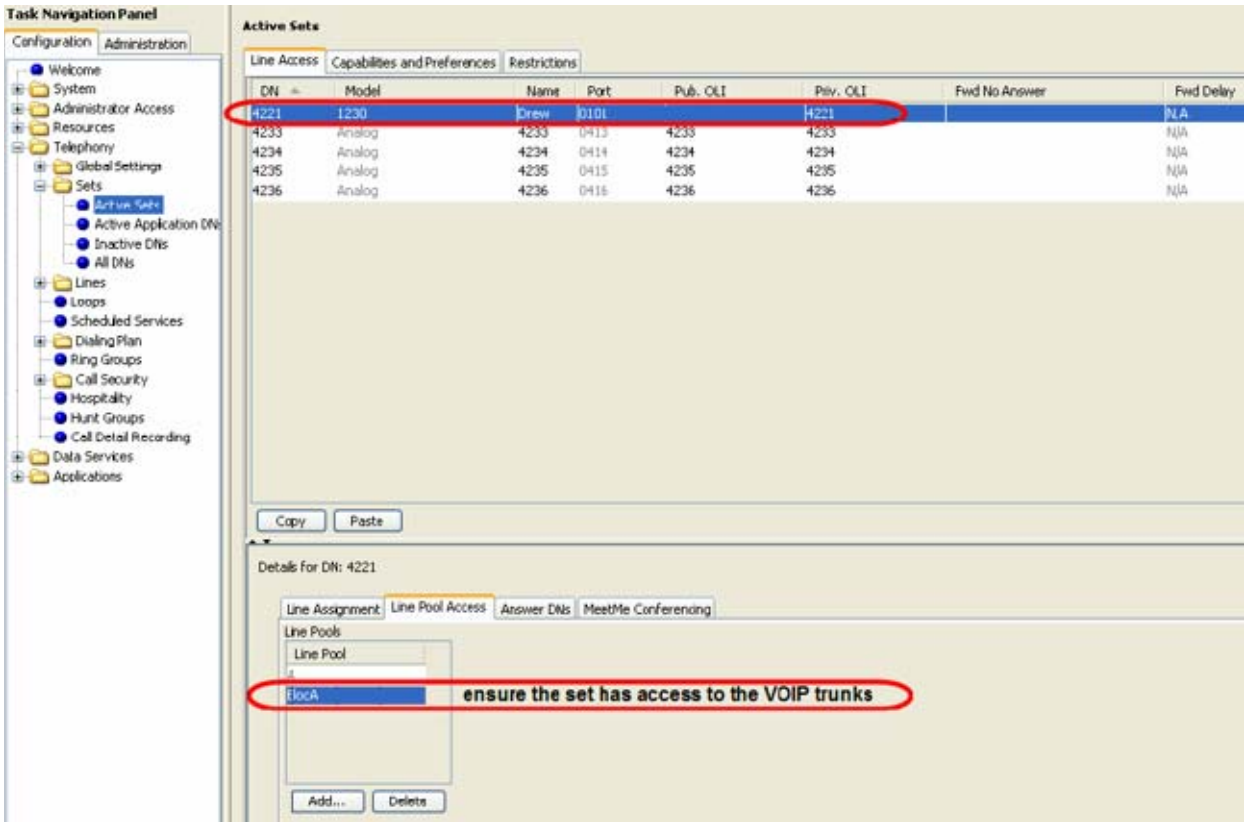
8 Select **Configuration > Telephony > Dialing Plan > Routing** and select the **Destination Codes** tab. Verify that the destination code is configured correctly.

Note: Ensure that the **Absorbed Length** is configured to the expected dialing plan.



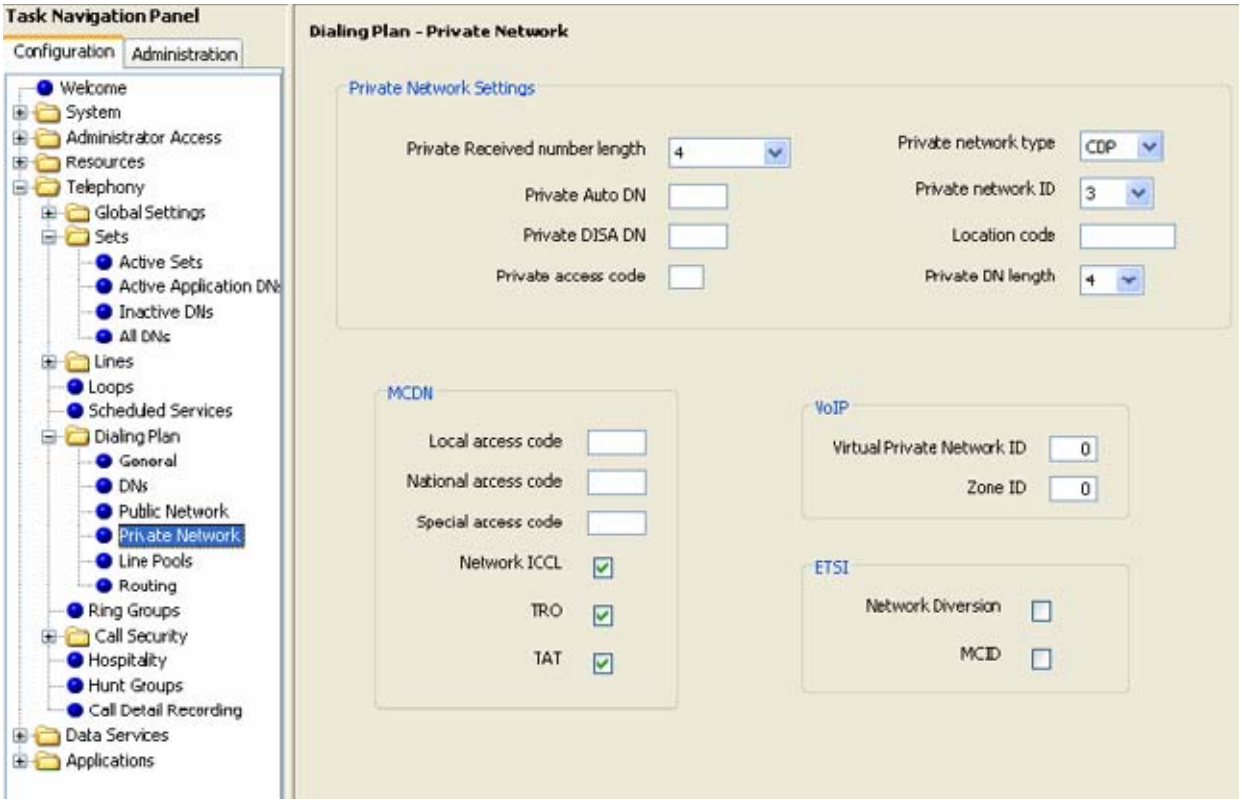
9 Select **Configuration > Telephony > Sets > Active Sets** and select the **Line Access** tab.

10 Highlight the appropriate set and select the **Line Pool Access** tab. Verify that the set has access to VoIP trunks



11 Select **Configuration > Telephony > Dialing Plan > Private Network** and ensure that the **Private Network Type** is set to CDP or UDP.

Note: In this example, the dialing plan is configured for a CDP Network with the recommended minimum 4 digit Private DN length.



Example 3: IP set is not registering with the Avaya BCM

When an IP set cannot register with the Avaya BCM450, you notice the following problem in your network:

- the IP set is not registered and repeatedly tries to connect to the BCM

If an IP phone is not registering with the BCM, there are three possible causes:

- there are not enough licenses for the number of IP phones connected to the system
- the number of IP sets connected exceeds the maximum: the maximum for BCM450 is 300 and the maximum for BCM50 is 32
- the phone is not correctly configured

Verify that the number of phones does not exceed the number of licenses. If there are too many phones for the number of licenses, disconnect unnecessary phones, or increase the number of licenses.

If the number of IP sets connected to the Avaya BCM exceeds the maximum number of IP set licenses or keycodes, it is possible that after a system reboot, not all of the supported IP sets can register. To resolve this problem, refer to the procedure Troubleshooting example 3a on page 69.

If the number of phones connected does not exceed the number of licenses, and does not exceed the maximum number of IP sets supported, use the procedure Troubleshooting example 3b on page 69 to verify the configuration of the IP phone.

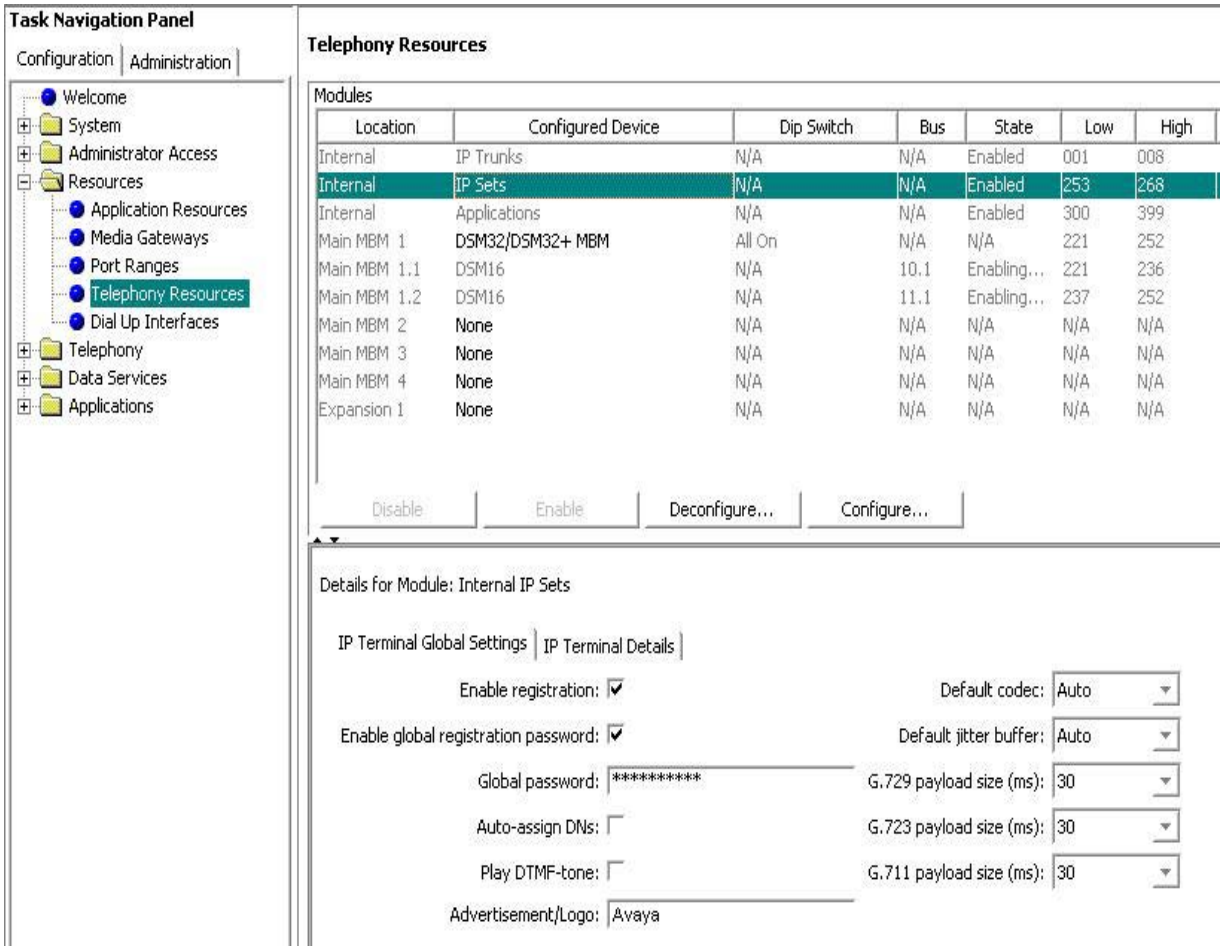
Troubleshooting example 3a

1. Select **Configuration > Telephony Resources** deregister the offline sets.
   OR
2. To connect more than the maximum number of IP sets, configure unused Application DNs for these sets by selecting **Configuration > Telephony Resources > Application Sets**.
3. Decrease the Application DNs and increase the IPSet DN count.

Troubleshooting example 3b

1. Select **Configuration > Resources > Telephony Resources** and select the appropriate IP set from the list.
2. On the **IP Terminal Global Settings** tab, ensure that the **Enable Registration** checkbox is selected.
3. Verify that the Global password on the BCM is the same password that you are using the register the IP set (the default password is 2264). If this field is left blank, no password prompt occurs during phone registration.

4 Verify S1/S2 IP address & Port settings on phone (Port 7000 for Avaya BCM)



Example 4: Cannot install keycode or invalid keycode application

When you cannot install a keycode, or have an invalid keycode application, you will see the following message: “Error Happened. Error detail; Invalid Keycode File.”

Use the following procedure when you cannot install a keycode, or when a keycode application is invalid. For more information about keycodes, see *Keycode Installation Guide*.

Example 5: Cannot dial out from digital trunk

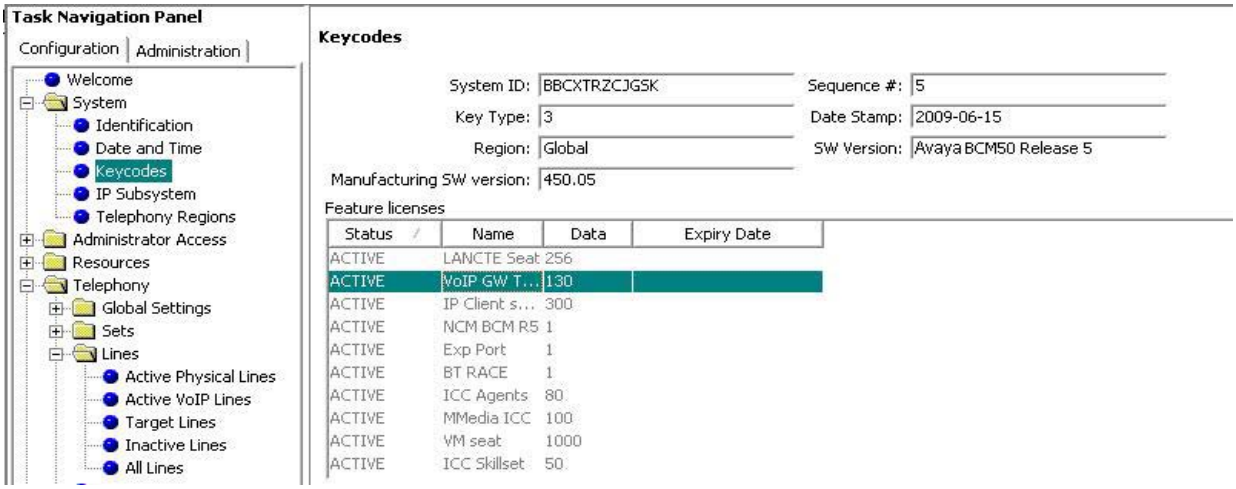
When you cannot dial out from a digital trunk, you may experience the following problems in your network:

- you are unable to reach a destination number when you dial it
- there is no route to the destination

Use the following procedure when you cannot dial out from a digital trunk.

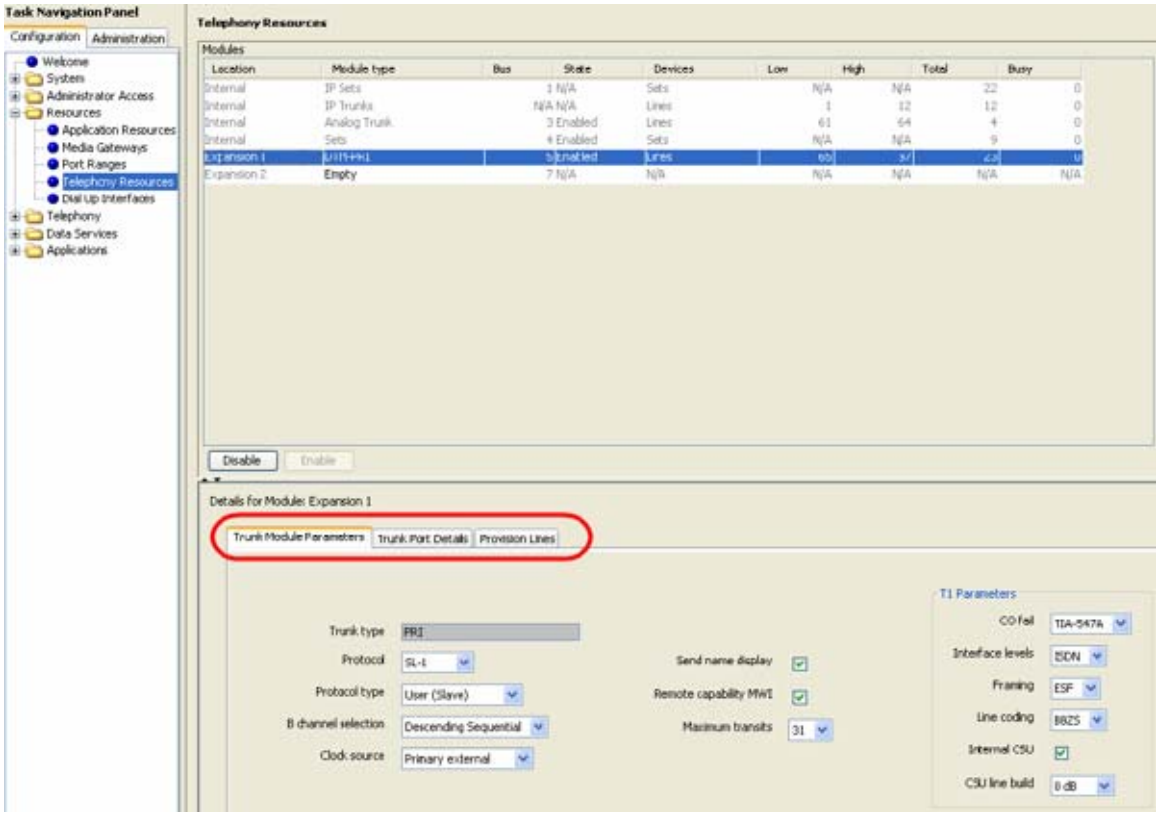
Troubleshooting example 5

1. Check that the LED indicators on the Avaya BCM Chassis are solid green.
2. Verify the physical connection from the carrier demarcation; ensure that the cable is securely connected.
3. Verify the physical connection from the carrier demarcation to the BCM450 equipment; ensure that the cable is securely connected.
4. If you are using SL-1 or ETSI QSIG, verify that the MCDN keycode is active. From the Business Element Manager, select **Configuration > System > Keycodes** to view the list of installed features.

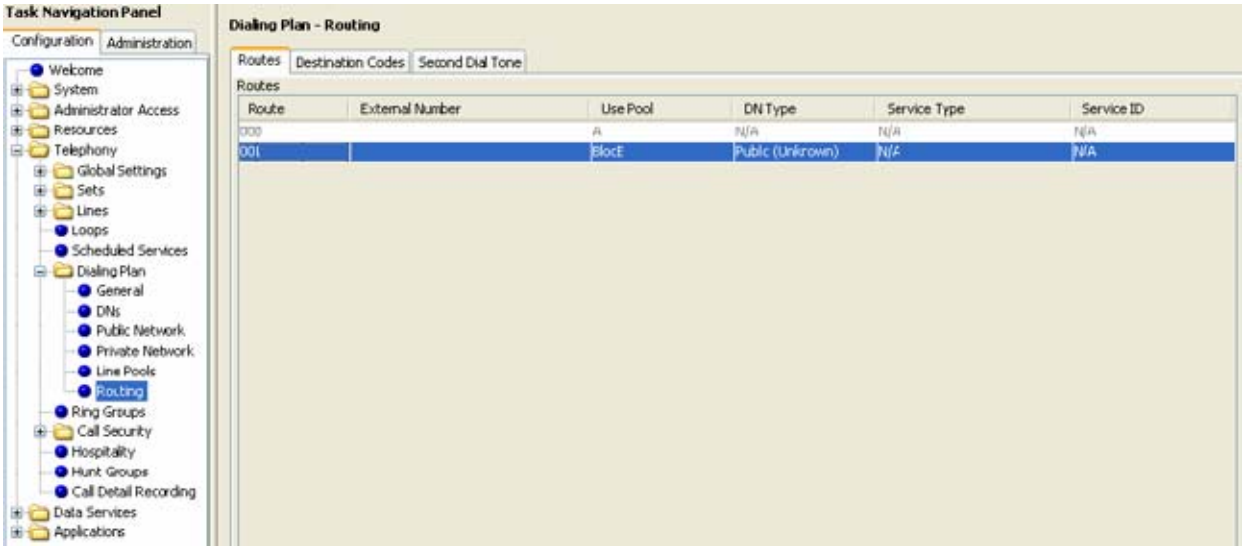


5. Verify that the digital trunk parameters are configured according to the parameters specified by your carrier or central office.
6. Select **Configuration > Resources > Telephony Resources** and click the **Trunk Port Details** tab. Verify that the trunk port details and state are correctly provisioned.

7 Select the **Provision Lines** tab and verify that the lines are correctly provisioned.

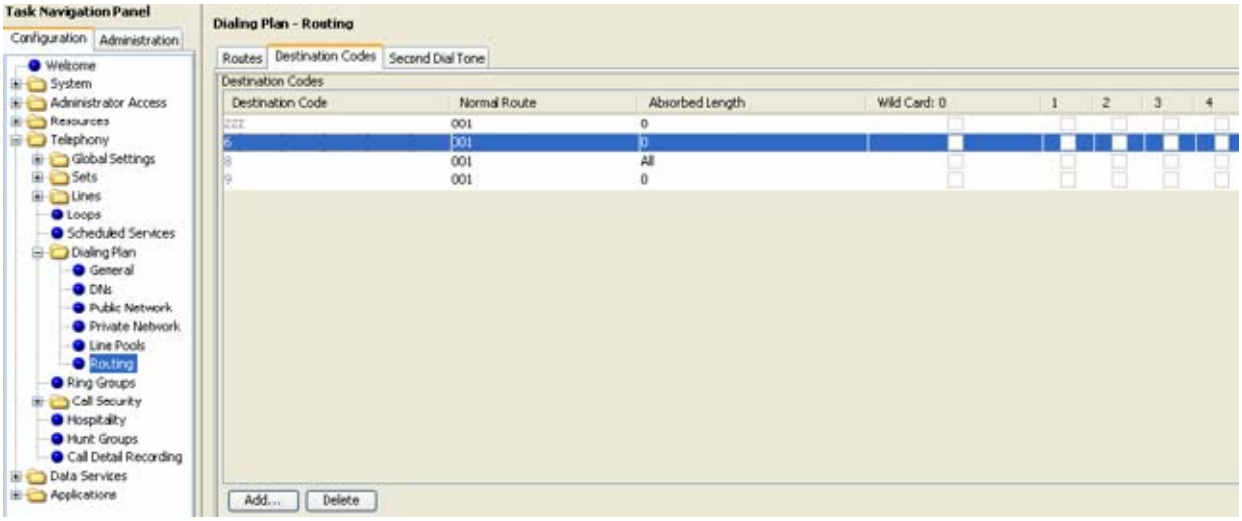


8 Select **Configuration > Telephony > Dialing Plan > Routing** and select the **Routes** tab. Verify that the route is configured correctly



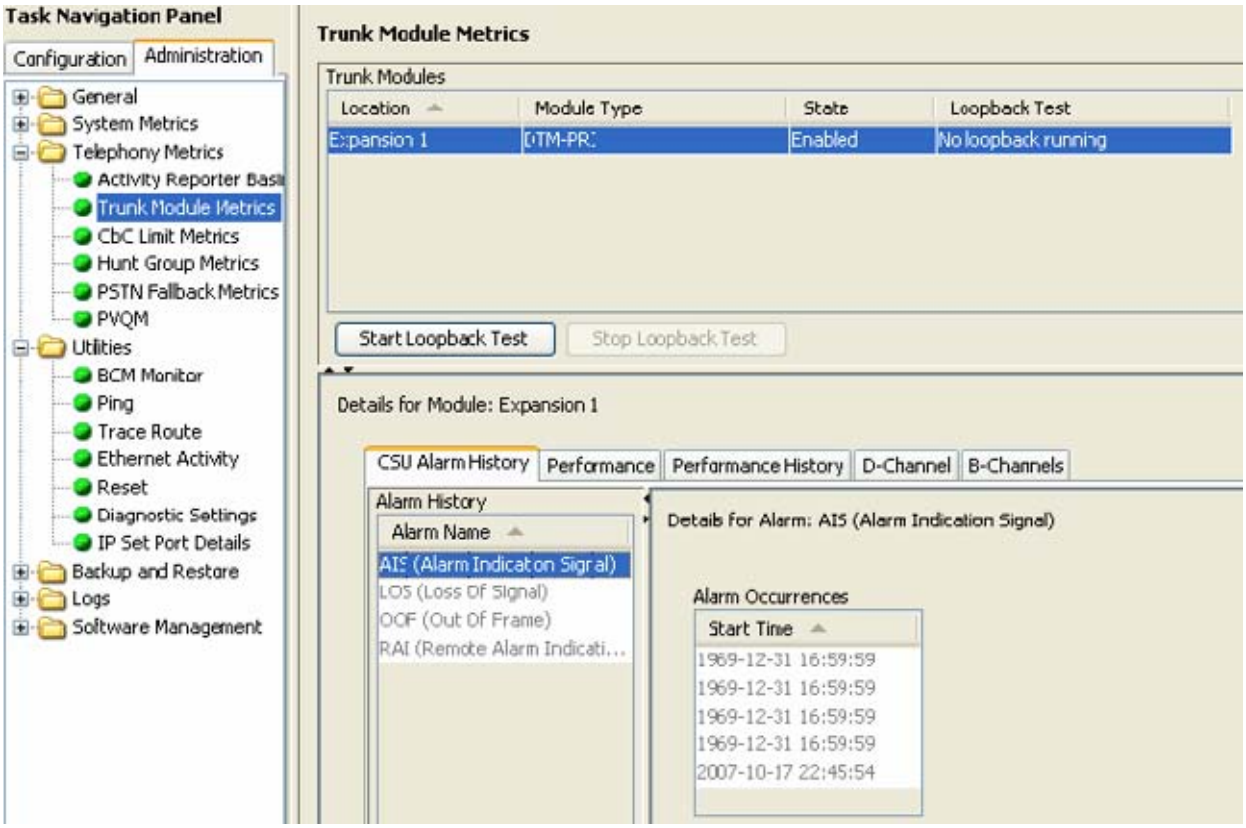
9 Select **Configuration > Telephony > Dialing Plan, > Routing** and select the **Destination Codes** tab. Verify that the destination code is configured correctly.

Note: Ensure that the **Absorbed Length** is configured to the expected dialing plan.

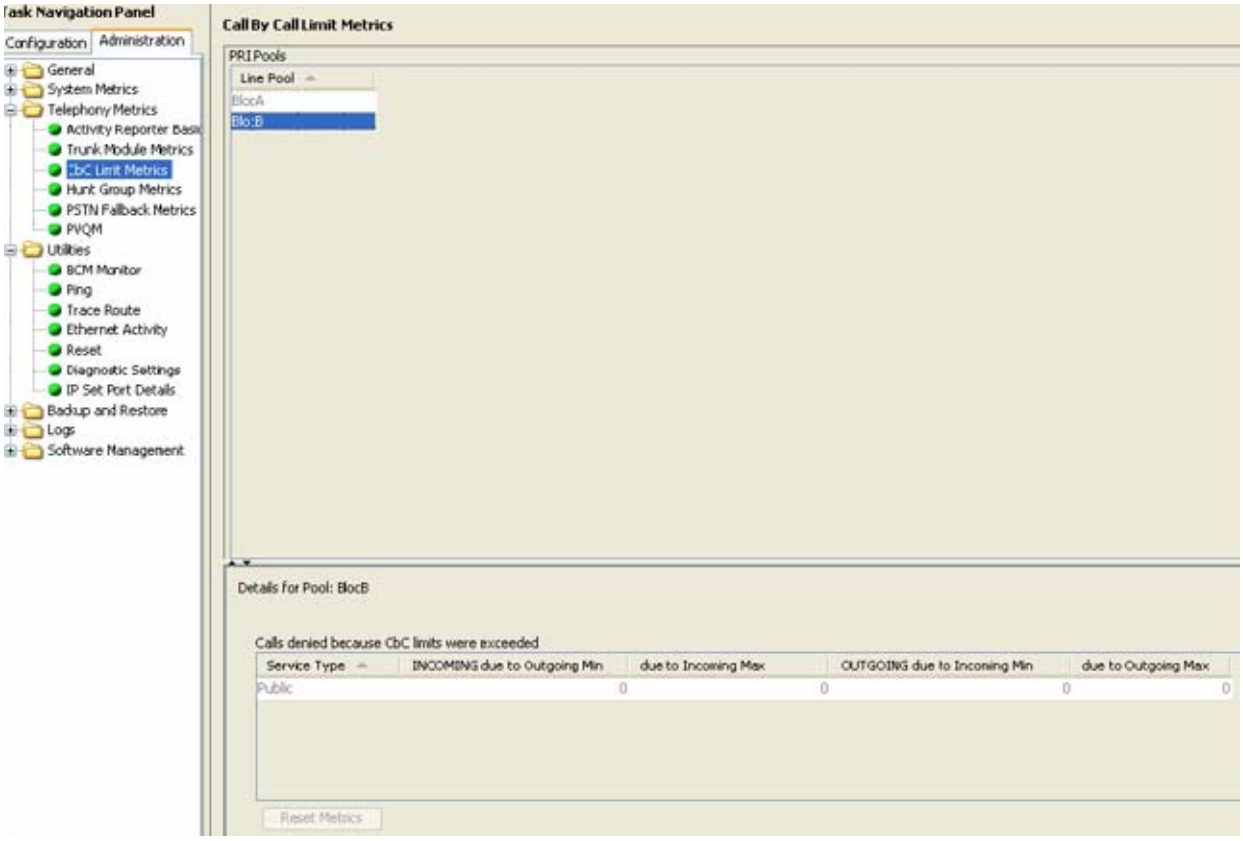


10 Select **Administration > Telephony Metrics > Trunk Module Metrics** and select the DTM module. Verify that the State of the DTM module is Enabled.

11 Select the **CSU Alarm History** tab and check the alarm status of the module.

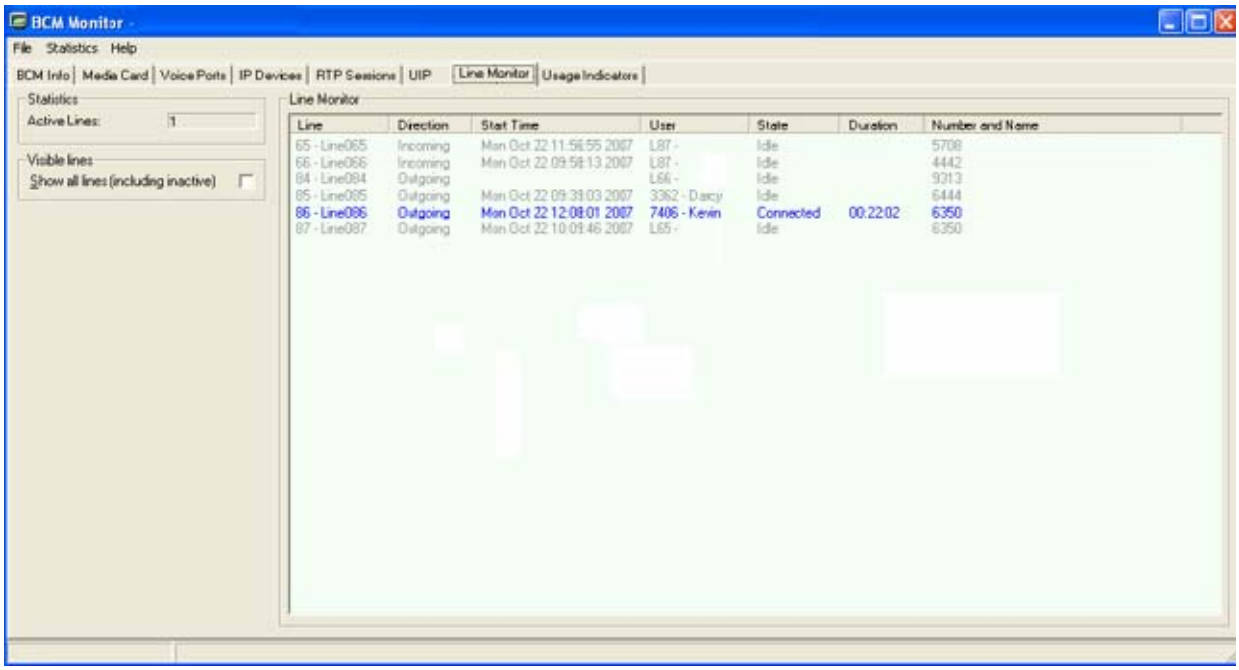


12 Select **Administration > Telephony Metrics > CBC Limit Metrics** and verify calls were not denied due to exceeding CBC limits.



13 Select **Administration > Utilities > BCM Monitor** and click the **Launch BCM Monitor** button.

14 Select the **Line Monitor** tab and verify the status of the line; select the **UIP** tab and verify the call set up.



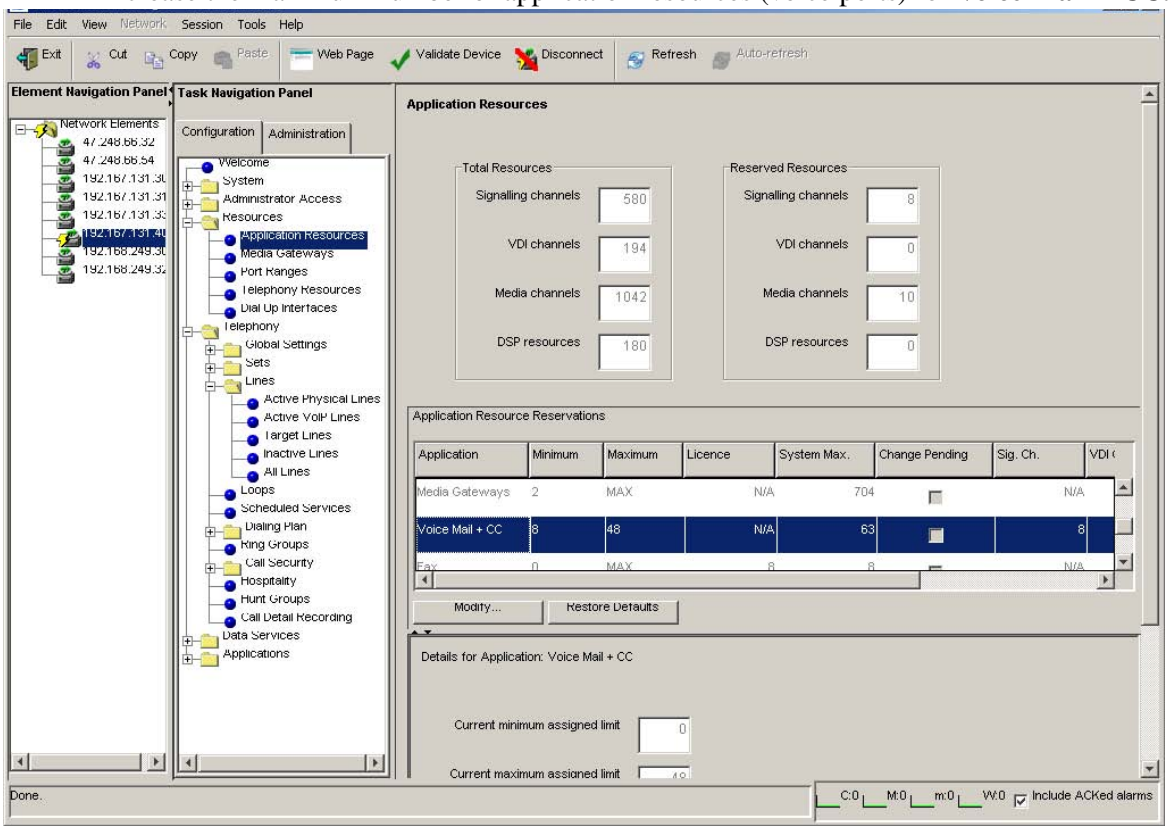
Example 6: MeetMe Conferencing commands do not work, or conferencing is busy

Use the following procedure to troubleshoot problems with MeetMe Conferencing.

Troubleshooting example 6

1 Select **Configuration > Resources > Application Resources** and then select the **VoiceMail + CC** application.

2 Increase the maximum number of application resources (voice ports) for **Voice Mail + CC.**



Example 7: Unable to apply a software update from a USB storage device

Use the following procedure when a software update from a USB storage device fails. When the update fails, the Avaya BCM generates alarm 1003.

Troubleshooting example 7

1 Verify that only one USB storage device is attached to the BCM in the bottom USB port.

2 If a second USB storage device is attached, remove it.

3 Verify that there is only one partition on the USB storage device, and that the software update is on the first partition. The BCM will recognizes only the first partition.

Example 8: Business Element Manager incorrectly shows expansion cabinet as empty

Use the following procedure when a module is installed in the expansion cabinet, but the Business Element Manager shows the expansion cabinet as empty, and the MBM is not active.

1. Select **Configuration > Resources > Telephony Resources**.
2. Double-click the **Module Type** field for the expansion cabinet.
3. Select the module from the list.
4. Configure the module and select **Enable**.

Example 9: HDD-2 LED is Off after installing second hard disk

When you apply a RAID upgrade kit to an existing Avaya BCM450 6.0 software system, the LED indicator of HDD-2 remains off after installing the second hard disk.

Perform the following actions when this occurs:

1. Verify if the version of the running software is Avaya BCM450 6.0 or greater. BCM450 1.0 systems are incompatible with RAID upgrade kit.
2. Verify if the hard disk is seated properly.
   If not, shut down the system, remove the second hard disk, and reset it, ensuring the hard disk tray is firmly locked to the rear SATA connection. When the hard disk clips into the correct position as the hard disk tray locks itself firmly into position, the front of the second hard disk tray must be flush with the first hard disk tray.

Example 10: VLAN interfaces cannot communicate with external devices

When VLAN interfaces cannot communicate with external devices, you can notice the following problems in your network:

- The network is not connected to the appropriate Avaya BCM LAN port.
- The remote VLAN endpoint is not configured with the same VLAN ID as on the BCM.
- The remote VLAN endpoint is configured on the same VLAN ID as on the BCM but their subnet IP address differ.

Use the following procedure when VLAN interfaces cannot communicate with external devices:

1. Select the **Ethernet Activity** option from the Business Element Manager.
2. Verify the BCM LAN port connectivity and traffic forwarding statistics.

Note: The statistics of the Layer 2 switch ports do not differentiate between normal LAN traffic and VLAN traffic.

Chapter 7
Recovery trees

The information in this chapter applies to the Avaya Business Communications Manager 450 (Avaya BCM450) platform only.

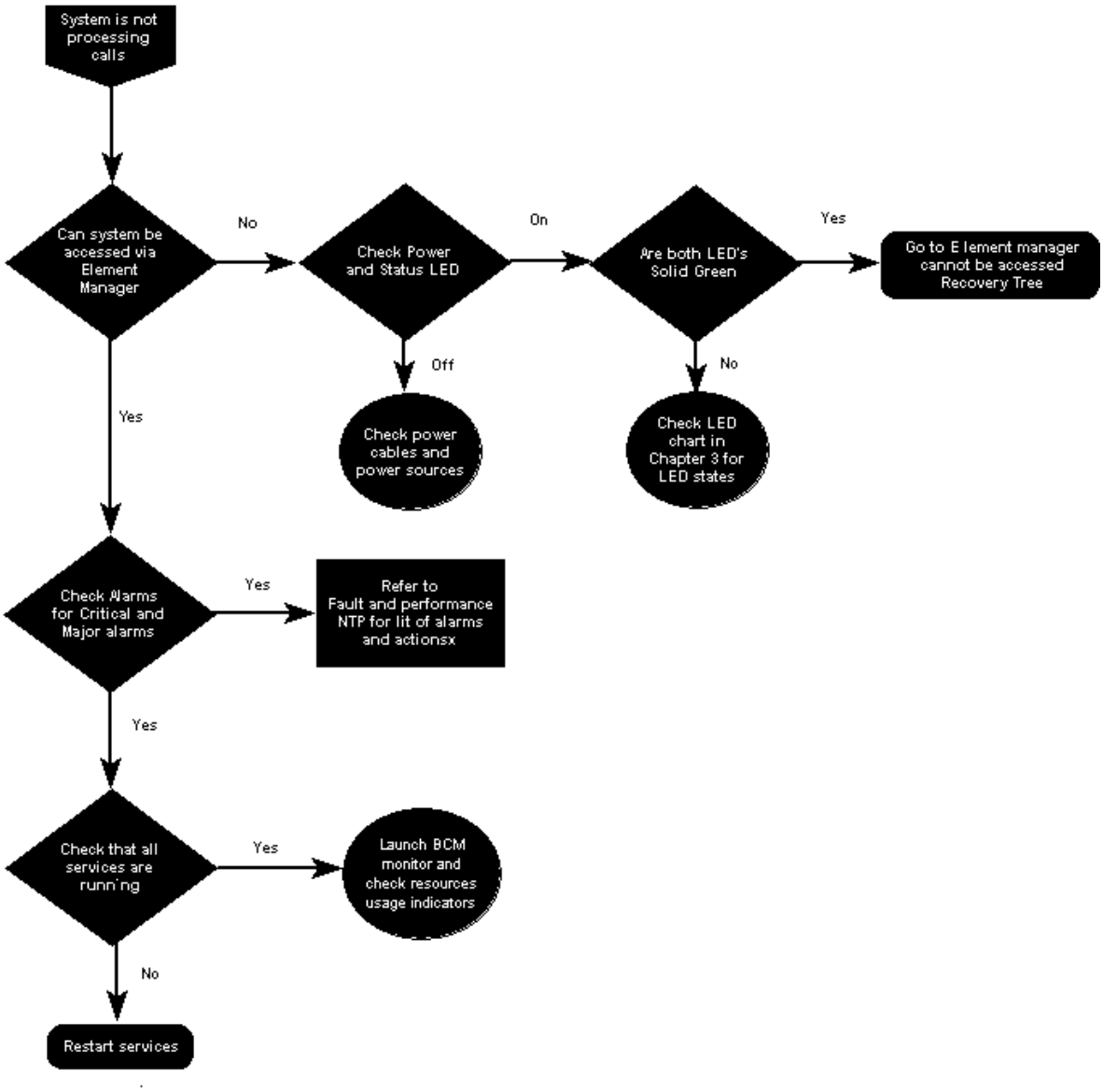
This chapter provides recovery trees for common troubleshooting scenarios.

Navigation

System is not processing calls

Use the following flowchart when the Avaya BCM450 is not processing calls.

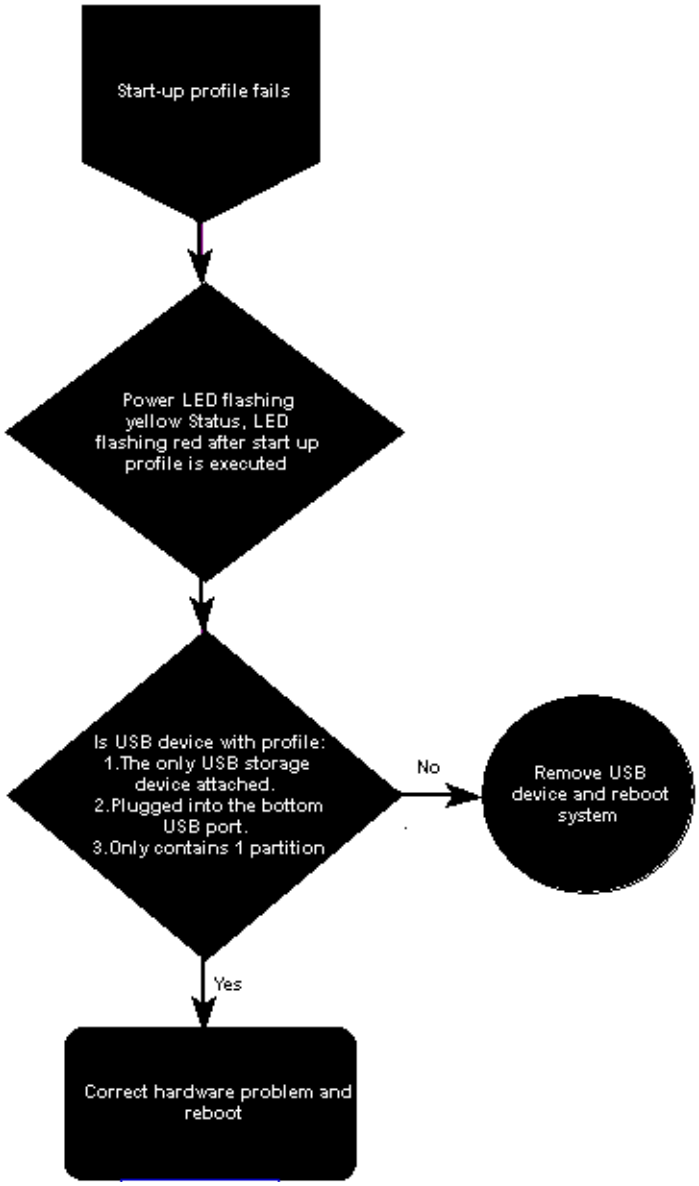
Figure 19 System is not processing calls



Start-up profile fails

Use the following flowchart when the start-up profile of the Avaya BCM450 fails.

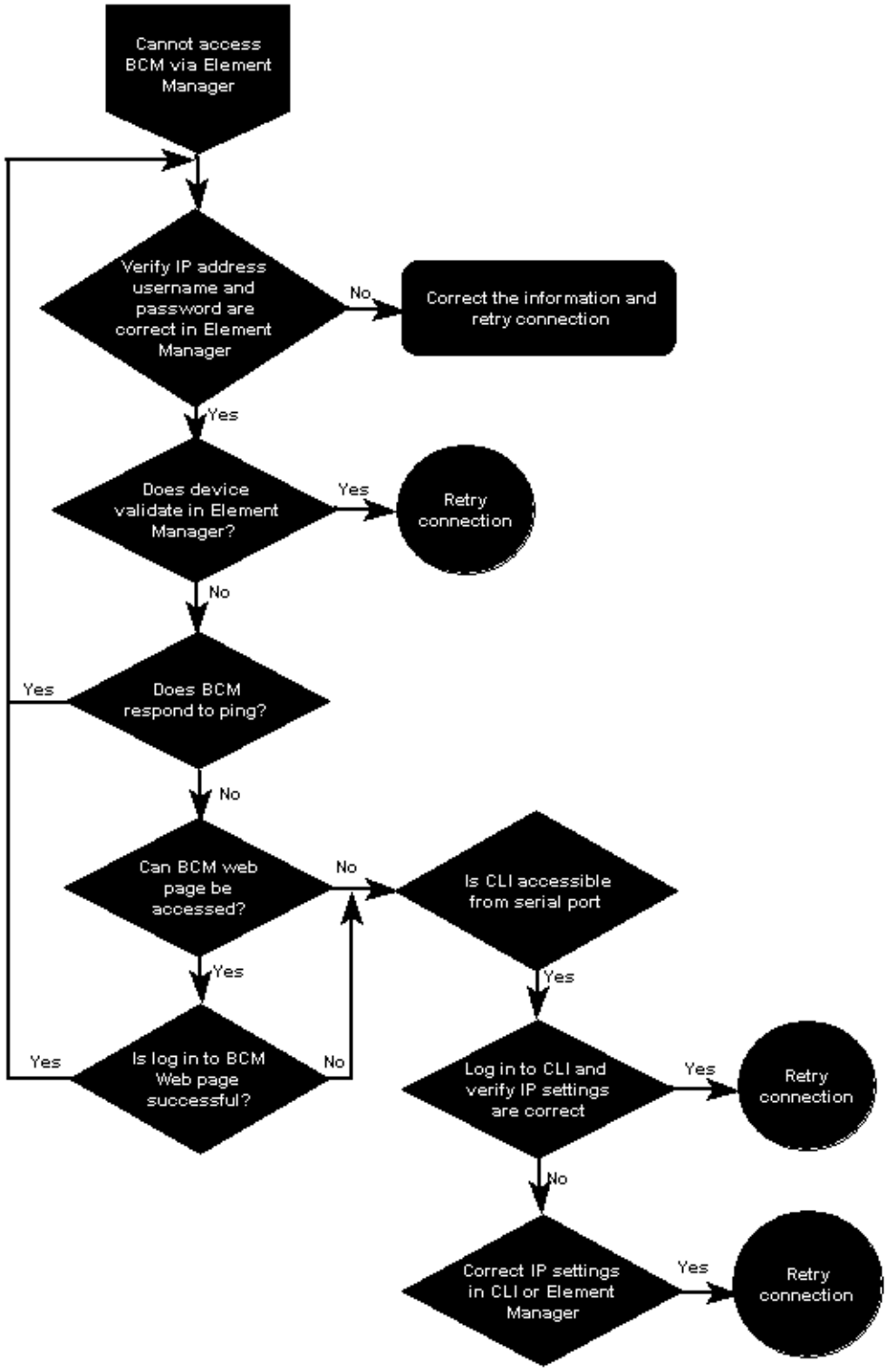
Figure 20 Start-up profile fails



Cannot access Avaya BCM450 through Business Element Manager

Use the following flowchart when you cannot access the BCM450 through Business Element Manager.

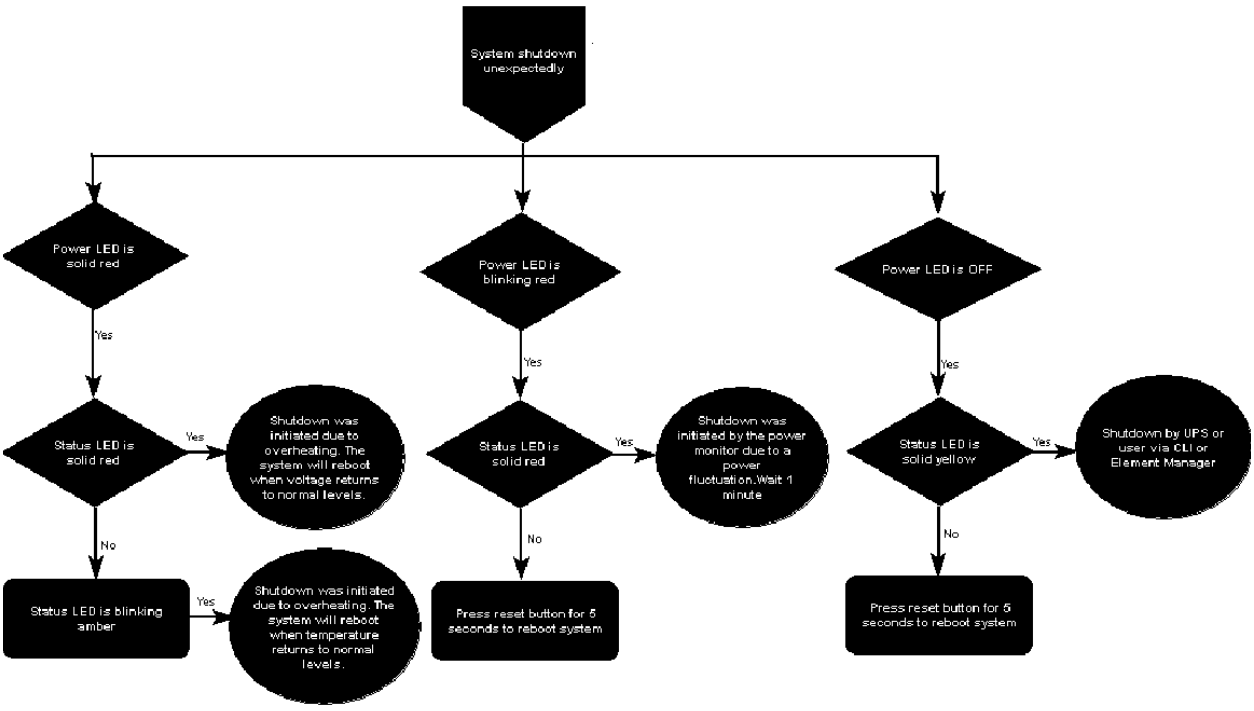
Figure 21 Cannot access BCM450 through Business Element Manager



Avaya BCM450 shuts down unexpectedly

Use the following flowchart when the BCM450 shuts down unexpectedly.

Figure 22 Unexpected shutdown



Chapter 8
Downloading Software

The information in this chapter applies to both the Avaya BCM50 and Avaya BCM450 platforms running Avaya Business Communications Manager (Avaya BCM) 6.0.

Use the information in this chapter to download Avaya BCM software.

Navigation

Downloading software from the Avaya BCM system webpage

The Avaya BCM system web page facilitates the download of applications, documentation, and other information necessary for running the BCM platform and its services. You connect to the BCM system web page by typing the IP address of your BCM system device into your browser. A valid user name and password are required in order to access the web page.

The BCM system web page contains the following links:

- Quick Link - Provides links to frequently used applications, including Mailbox Manager, Activity Reporter Basic, and CallPilot Manager.
- User Applications - Applications listed in Table 20 that are available to the end users of the BCM platform.
- Business Applications - Applications listed in Table 20 that are available to business users of the BCM platform.
- Administrator Applications - Applications listed in Table 20 that are available to BCM platform administrators.
- Documentation - Documentation for the BCM450 end users to explain the end-user applications and BCM platform-specific tasks.

Table 20 Applications available on Avaya BCM system Web page

Application	User	Administrator
User Applications		
Mailbox Manager	Y	Y
Desktop Assistant Pro	Y	Y
CallPilot Unified Messaging	Y	Y
Personal Call Manager	Y	Y
LAN CTE Client	Y	Y

Table 20 Applications available on Avaya BCM system Web page

Application	User	Administrator
IP Software Phone 2050	Y	Y
Mobile Voice Client 2050	Y	Y
Business Applications		
Reporter Applications		
Activity Reporter Basic	N	Y
Activity Reporter	N	Y
Contact Center Applications		
Reporting for Contact Center	N	Y
Contact Center Reporting Server	N	Y
Multimedia Contact Center	N	Y
IP View Softboard	N	Y
Administrator Applications		
Administrator Management Tools		
CallPilot Manager	N	Y
Business Element Manager	N	Y
Desktop Assistant Pro AE	N	Y
NCM for BCM	N	Y
BCM Monitor	N	Y
CDR Clients	N	Y
BCM MIBs	N	Y
RADIUS Dictionary		
SSH Client (PuTTY)	N	Y
BCM Logs	N	Y
Digital Mobility Tools		
Digital Mobility Controller	N	Y
Digital Mobility Service Tool	N	Y
Templates		
Startup Profile Template	N	Y
Factory Default Programming Record	N	Y

Table 21 Applications available on BCM50 Web page

Application	User	Administrator
User Applications		
Mailbox Manager	Y	Y
Desktop Assistant Pro	Y	Y

Table 21 Applications available on BCM50 Web page

Application	User	Administrator
CallPilot Unified Messaging	Y	Y
Personal Call Manager	Y	Y
LAN CTE Client	Y	Y
IP Software Phone 2050	Y	Y
Mobile Voice Client 2050	Y	Y
Avaya VPN Client	N	Y
Business Applications		
Reporter Applications		
Activity Reporter Basic	N	Y
Activity Reporter	N	Y
Contact Center Applications		
Reporting for Contact Center	N	Y
Contact Center Reporting Server	N	Y
Multimedia Contact Center	N	Y
IP View Softboard	N	Y
Administrator Applications		
Administrator Management Tools		
CallPilot Manager	N	Y
Business Element Manager	N	Y
Desktop Assistant Pro AE	N	Y
NCM for BCM	N	Y
BCM Monitor	N	Y
CDR Clients	N	Y
BCM MIBs	N	Y
RADIUS Dictionary		
SSH Client (PuTTY)	N	Y
BCM Logs	N	Y
Digital Mobility Tools		
Digital Mobility Controller	N	Y
Digital Mobility Service Tool	N	Y
Templates		
Startup Profile Template	N	Y
Factory Default Programming Record	N	Y

To download software from the Avaya BCM Web page

1 Connect to the BCM Web page

— If the BCM is installed on the network use a browser and type in the BCM IP address as the URL in the following format:

http://xxx.xxx.xxx.xxx

— If the BCM is installed but not yet configured, connect directly to the BCM through the OAM port and, using a browser, type the following:

http://10.10.11.1/

2 Enter the user name and password to be authenticated on the BCM Web page.

3 Select the link for the type of application that you want to download.

4 Select the link for the specific application or tool that you want to download and select the download link.

Downloading software from the Avaya web site

To download software from the Avaya Web site, see the following web site:

http://www.avaya.com/support

Chapter 9
Troubleshooting Tools

The information in this chapter applies to both the Avaya BCM50 and the Avaya BCM450 platforms running Avaya Business Communications Manager (Avaya BCM) 6.0.

The Avaya BCM system provides several tools that you can use to diagnose problems.

Navigation

Service Management

You can use the Business Element Manager to view a list of the services that are running on your BCM system.

For more information about service management on Avaya BCM 6.0, see *Avaya Business Communications Manager 6.0 Administration and Security Guide* (NN40170-603).

Status and Metrics

You can use the Business Element Manager to view detailed information about the performance of the BCM and about the performance of system resources.

You monitor system status using the following tools:

- QoS Monitor—QoS Monitor monitors the quality of service (QoS) of IP trunk services.
- UPS Status—The Uninterruptible Power Supply (UPS) feature provides monitoring of the power source and the battery backup.
- NTP Metrics—The Network Time Protocol (NTP Metrics) feature provides an overview of the integrity of the NTP time source

For information about monitoring the system status, see the *Avaya Business Communications Manager 6.0 Administration and Security Guide* (NN40170-603).

You can monitor system performance using the following tools:

- Activity Reporter Basic—Generate reports about call activity and voice mail receive statistics.
- Trunk Module Metrics— View the status of digital trunk modules as well as identify any device or lines connected to the system.

- CbC Limit Metrics—Use the CbC Limit metrics panel to monitor denied call activity for each service on each line pool.
- Hunt Group Metrics—Access the Hunt Group metrics to evaluate total call processing by hunt group member.
- PSTN Fallback Metrics—View how many fallback attempts and fallback failures occur within a specific period using the PSTN Fallback Metrics panel.
- Proactive Voice Quality Management—Proactive Voice Quality Management (PVQM) metrics allow you to monitor the quality of VoIP calls. You can also use the PVQM metrics to diagnose infrastructure problems in your network.

For more information about monitoring system performance, see *Avaya Business Communications Manager 6.0 Administration and Security* (NN40170-603).

Utilities

Avaya BCM provides the following utilities:

- BCM Monitor—BCM Monitor is a stand-alone diagnostic application that the system administrator can use to view real-time system and IP telephony information about BCM systems.
- Ping—Ping (Packet InterNet Groper) is a utility that you can use to verify that a route exists between the BCM and another device.
- Route trace—You can use Trace Route to measure round-trip times to all hops along a route. This helps you to identify bottlenecks in the network.
- Ethernet activity—The Ethernet Activity panel is a utility that you can use to view ethernet activity in the BCM system.

For more information about utilities, see *Avaya Business Communications Manager 6.0 Administration and Security* (NN40170-603).

Command Line Interface

The information in this section applies to the BCM50 and the BCM450 platforms running Avaya BCM 6.0.

You can use the Command Line Interface (CLI) to configure basic settings, as well as shut down, reboot, or reset the BCM450 system. Two CLI modes are available: Maintenance CLI, and Configuration CLI.

This section contains information about the following topics:

- Accessing the CLI on page 91
- Using the Configuration CLI on page 92
- Using the Maintenance CLI on page 92

Accessing the CLI

There are two methods of accessing the CLI:

- through a serial connection
- through the OAM port

For either method, your user account must be assigned the System-CLI privilege before you can access the CLI.

Accessing the CLI through a serial connection

Caution: The CLI is intended for use by experienced technicians, or as directed by Avaya Technical Support. Improper use of the CLI may result in data loss.

1. Connect a serial cable with a 9-pin female connector from the serial port on a PC to the serial port on the Avaya BCM450.
2. Ensure that you use the following settings:

- bits per second: 115200
- data bits: 8
- parity: N
- stop bits: 1
- no flow control

3. Use a terminal emulation program, such as Hyperterminal or Avaya CLI Manager, to establish a connection to the BCM450.
4. Log into the BCM450 by entering your username and password. Your user account must be assigned the System-CLI privilege in order to access the CLI.

Accessing the CLI through the OAM port

Caution: The CLI is intended for use by experienced technicians, or as directed by Avaya Technical Support. Improper use of the CLI may result in data loss.

1. Connect an Ethernet cable from the Ethernet port on a PC to the OAM Ethernet port on the Avaya BCM450.
2. Set the IP address of the PC to 10.10.11.2.
3. Use putty to establish an SSH connection to the default IP address of the OAM port: 10.10.11.1.
4. Log into the BCM450 by entering your username and password. Your user account must be assigned the System-CLI privilege in order to access the CLI.

Using the Configuration CLI

The Configuration CLI displays when the system is in Main OS mode. The options available on the Configuration CLI are:

- **0—Exit.** The system exits the CLI to the login prompt.
- **1—Reboot.** The system reboots to the Main OS.
- **2—Shutdown.** The system shuts down. You need physical access to the Avaya BCM450 hardware to restart the system.
- **3—Safe OS.** The system reboots to the Safe OS and waits 1 minute for you to login. When you login within 1 minute, the Maintenance CLI displays. If you do not login within 1 minute, the system changes to the Main OS. For more information about the Safe OS, see Using the Maintenance CLI on page 92.
- **4—Configuration Reset.** A Level 1 reset occurs. The system resets all configuration data to the factory defaults.
- **5—Software Reset.** A Level 2 reset occurs. The system resets all configuration data and software to the factory defaults.
- **6—IP Configuration.** You can configure the following basic IP settings:
  - 0—Return to Previous Menu. The system returns to the main menu.
  - 1—Hostname. Provision the hostname of the system.
  - 2—IP Address. Provision the IP address of the system.
  - 3—Subnet Mask. Provision the subnet mask for the IP address.
  - 4—Default Gateway. Provision the default gateway for the system.
  - 5—DHCP Client Mode. Enable or disable the DHCP client.
  - 6—Commit Changes. Save changes to the IP settings.
  - 7—Reload Settings. Reload the existing IP settings.

Using the Maintenance CLI

The Maintenance CLI displays when the system is in Safe OS mode. The Safe OS is a diagnostic mode that you can use if the Main OS is experiencing problems. No applications or telephony services are running when the Avaya BCM450 is in Safe OS mode. The options available on the Maintenance CLI are:

- **0—Exit.** The system exits to the Safe OS login prompt.
- **1—Reboot into Main OS.** The system reboots to the Main OS.
- **2—Shutdown.** The system shuts down. You need physical access to the BCM450 hardware to restart the system.
- **3—Reboot into Safe OS.** The system reboots to the Safe OS and waits 1 minute for you to login. If you do not login within 1 minute, the system changes to the Main OS.
- **4—Transition to Main OS.** The system changes from the Safe OS to the Main OS without restarting.

- **5—Configuration Reset.** A Level 1 reset occurs. The system resets all configuration data to the factory defaults.
- **6—Software Reset.** A Level 2 reset occurs. The system resets all configuration data and software to the factory defaults.

Chapter 10
Understanding System Messages

The information in this chapter applies to both the BCM50 and the BCM450 platforms running Avaya Business Communications Manager (Avaya BCM) 6.0.

The Avaya BCM450 generates alarms, logs, traps, and other system messages that you can use to troubleshoot problems.

Alarms, logs, and traps

For information about system messages, alarms, logs, and SNMP traps, see *Avaya Business Manager 6.0 Fault and Performance* (NN40170-701). For more information about specific alarms, see *Avaya Business Communications Manager 6.0 Alarms Reference* (NN40170-702).

Reporting for dropped calls

You can specify the level of system reporting that you require for released ISDN or VoIP calls. You can choose to have no text, a simple explanation, or a detailed explanation in the dropped call notification.

Use this procedure to set the level of reporting for dropped calls.

To set Release Reasons

To set Release reasons, follow these steps:

1. Click **Administration > Utilities > Diagnostic settings**.
2. Click the **Telephony** tab.

   The **Release Reasons** panel appears.
3. From the Release Reason drop-down menu, select the level of reporting that you require. Table 22 lists the possible values for Release reasons.

Table 22 Release reasons

Attributes	Values	Description
None	Default Value	No text will accompany a dropped call notification.
Simple	Cause Code: Off On	 Off: no text is provided On: the code only is provided Note: if you select Simple text, you must turn off the Cause code. This is for diagnostic purposes only.

Table 22 Release reasons

Attributes	Values	Description
Detailed	No setting	A detailed explanation of the Cause code is provided.
Cause Code	check box	This check box appears when you select Simple in the Release Reason Text drop-down menu. When you select the check box, only the cause code accompanies a dropped call notification.

Chapter 11
Useful Troubleshooting Links

The information in this chapter applies to both the BCM50 and the BCM450 platforms running Avaya Business Communications Manager (Avaya BCM) 6.0.

Use the information in this chapter to find additional reference information when you are troubleshooting a problem with the Avaya BCM450. As part of your initial troubleshooting, Avaya recommends that you check these resources for information about known issues and for solutions related to the problem you are experiencing.

Navigation

Partner Bulletins

For more information about Partner Bulletins, see www.avaya.com/support.

Knowledge and Solution Engine

The Knowledge and Solution Engine allows you to search an entire database of Avaya technical documents, troubleshooting solutions, software, and technical bulletins. For more information, see www.avaya.com/support.

Chapter 12
Frequently Asked Questions

The information in this chapter applies to both the BCM50 and the BCM450 platforms running Avaya Business Communications Manager (BCM) 6.0.

This chapter provides answers to frequently asked questions.

Navigation

Backup, restore, and reset operations

This section contains answers to the following questions:

How do I back up the database?

Use the following procedure to back up the Avaya BCM450 database.

To perform a backup

1. In the task panel, click the **Administration** tab.
2. Open the **Backup and Restore** folder, and then click **Backup**.
   The **Backup** panel opens and displays the **Immediate Backup** tab. In the **Backup To** selection field, choose a destination for the backup archive.
3. Click the **Backup** button.
   The **Backup** window opens.In the **Optional Components** table, select or clear the check box for each component to include or exclude these components from the backup operation.
4. Click the **OK** button.

5 A warning window opens. Read the warning carefully before proceeding.

6 Click the **Yes** button to proceed.
A progress window opens. When the backup is complete, the **Backup Complete** message appears.

7 Click the **OK** button.

How do I restore the Avaya BCM from a previous backup?

Use the following procedure to restore the BCM database.

To restore data from the Avaya BCM

1 In the task panel, click the **Administration** tab.

2 Open the **Backup and Restore** folder, and then click **Restore**.
The **Restore** panel opens. In the **Restore From** field, select the location of the backup archive to use.

3 Click the **Restore** button.
The **Select Components to Restore** window opens.

4 Select the optional components that you want to include from the backup file.

5 Click the **OK** button.
A warning window opens and displays information about components that will be affected by the restore operation. Read the warning carefully before proceeding.

6 Click the **Yes** button to proceed.
A progress window opens. When the operation is complete, the **Restore Complete** window opens.

7 Click the **OK** button.

How do I complete a Warm Reset or Cold Reset? Is it safe and will I lose customer data?

You can use the Reset utility in Business Element Manager to:

- reboot the Avaya BCM system
- perform a warm reset of telephony services
- perform a cold reset of telephony services
- for the BCM450, shut down the system
- for the BCM50, perform a cold reset of the router

For a description of the impact on the system of each of these resets, see Reset functions on page 28.

Use this procedure to perform a warm or cold reset.

Completing a warm or cold reset

1 Select **Administration, Utilities, Reset**, and click one of the following buttons:

   a **Reboot BCM450 System** will restart the operating system of the Avaya BCM450

   b **Warm Reset Telephony Services** will restart telephony services. Customer data will be retained.

   c **Cold Reset Telephony Services** will reset telephony programming to factory defaults. Customer data will be lost.

   d **Shutdown System** will stop all services and shut down the system. Restarting the system requires physical access to the BCM450.

   e **Cold Reset Router** resets the router programming to the factory defaults. This applies to BCM50 only.

Password protection

This section answers the following frequently asked question:

• How do I recover a lost password for the Avaya BCM? on page 101

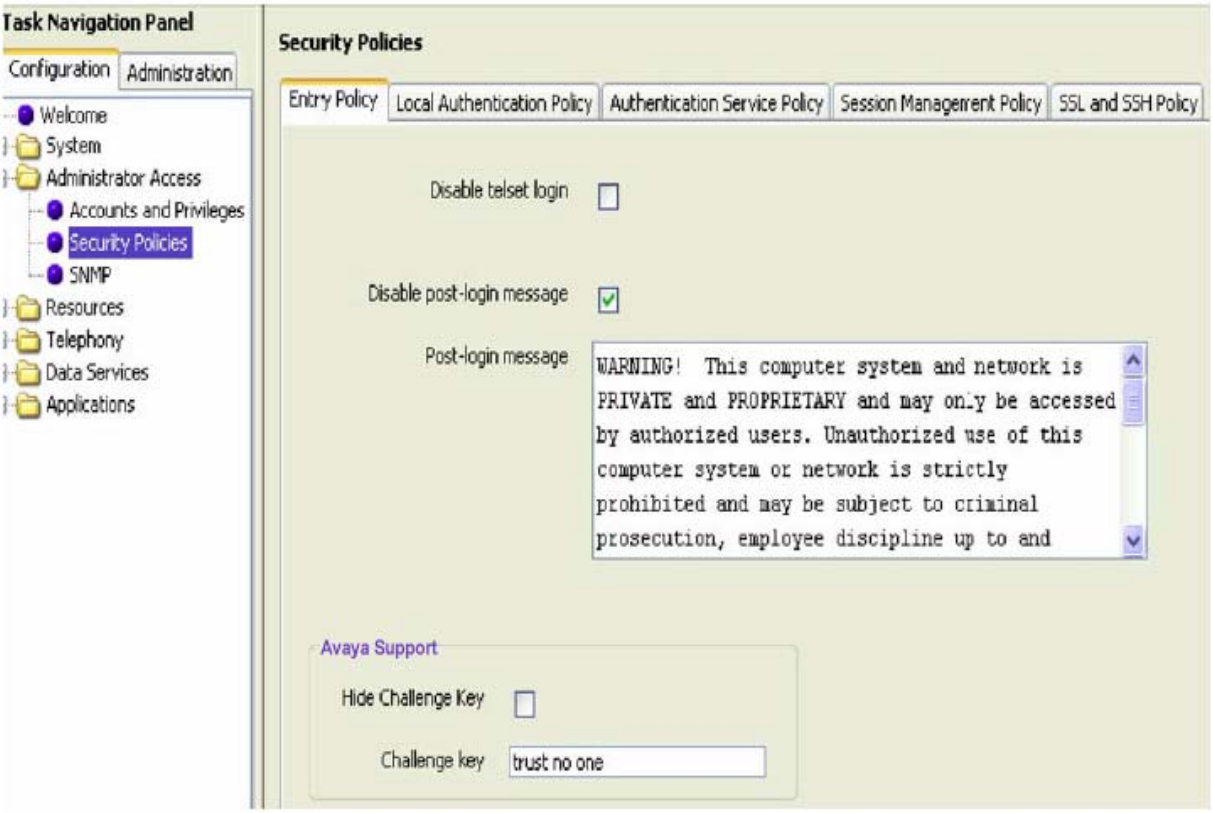
How do I recover a lost password for the Avaya BCM?

There is a Avaya support default user which cannot be deleted or modified. This account is set up to allow Avaya troubleshooting technicians to access areas of the system that are not available to other users. You can change the default challenge key, but be sure to retain a record of the change so that Avaya support technicians can access your system.

Recovering a lost password

1 Select **Configuration, Administrator Access, Security Policies**, and select the **Entry Policy** tab.

2 With the **Challenge Key** available, contact Avaya Technical Support and request help to recover the lost password.



Fault management

This section answers the following frequently asked question:

- How do I view Alarms? Can I acknowledge and clear them? on page 102

How do I view Alarms? Can I acknowledge and clear them?

When you view an alarm on the alarms panel, you can change the order of the columns in the table and you can sort alarms. For example, you may want to sort alarms by Component ID and Alarm ID.

Use the following procedures to view alarms and to acknowledge alarms.

To view an alarm

1. Click the **Administration** tab.
2. Open the **General** folder, and then click the **Alarms** task.

   The **Alarms** page opens.

3 In the Alarms Panel table, select an alarm.

The **Alarm Details** panel displays below the Alarms table.

4 To change the order of columns in the Alarm table, select a column and drag it left or right to the desired location, and release it.

5 To view a column by ascending or descending order, click the column heading.

To acknowledge an alarm

1 Click the **Administration** tab.

2 Open the **General** folder, and then click the **Alarms** task.

The **Alarms** panel opens.

3 In the Alarms table, select the alarm you want to acknowledge.

The **Alarm Details** panel is displayed below the Alarms table.

4 On the **Alarms Details** panel, click the **Acknowledge Alarm** button.

A check box appears in the **Alarm ACKed** column in the Alarms table for this alarm.

Acknowledging the alarm does not clear the alarm; it indicates only that the alarm has been noted.

System and status information

This section answers to the following frequently asked questions:

How do I capture the logs from the Avaya BCM?

You can capture or transfer logs from the Avaya BCM using Business Element Manager, or from the BCM Web page.

When you use the BCM Web page to transfer log files, you cannot choose the log file categories that you will transfer; all the log files in all the categories will be transferred.

Use the following procedures to transfer log files.

Using the Business Element Manager to transfer log files

1. Click the **Administration** tab, and then open the **Logs** folder.
2. Click the **Log Management** task.
   The **Log Management** panel opens.
3. Click the **Immediate Log Transfer** tab.
4. In the **Transfer To** selection field, select a storage location**.**Click the **Transfer** button.
   The **Transfer To** window opens.
5. Select the log file categories that you want to include in the log file transfer. All the log files associated with the selected categories will be transferred.
6. Click the **OK** button.
   A transfer window opens and displays applicable warnings.
7. Click the **Yes** button to initiate the transfer.
   A **Save** dialog box displays.
8. Specify a filename and location for the log file and click **Save**.
   The **Progress Update** window opens. When the log files are transferred, the **Transfer Complete** window opens.
9. Click the **OK** button.
   The log archive is saved in the location you specified.

Using the Avaya BCM Web Page to transfer log files

1. In your Web browser, type the IP address of the Avaya BCM, and then click **Go**.
   The login screen opens.
2. Log on to the BCM using the same user name and password that you use to log on to an Avaya BCM using the Business Element Manager.
   The BCM Web pages appear.
3. Click the **Administrators Applications** link.
4. Click **BCM Logs**.
5. Click the **Retrieve Log Files** link.

   The Retrieve Log Files panel appears.
6. Click one of the three options for file transfer: **Transfer to My Computer**, **Store on USB Memory**, or **Send to**.
7. If you select the **Send to** radio button, select a destination from the drop-down list, otherwise, go to the next step.
8. Click Submit. The web page shows the status as **Working**; when complete, it shows **Success**.
9. Click the **Click Here to Download Logs** link.
   The **File Download** screen opens.
10. Click the **Save** button.
    The **Save As** screen opens.

11 Specify the location where you want to save the log file transfer, and enter a name for the file in the **File Name** field.

12 Click the **Save** button.
The file is saved.

How do I capture the current Avaya BCM configuration?

You can create a programming file that contains the current settings of all or part of your Business Element Manager data. These files can be saved in either HTML or Excel spreadsheet format. You can access the programming record in the same way you access any other HTML file or by using Excel, version 2002 or later, for the spreadsheet format.

A programming record that contains the factory default settings is available in Excel format from the Avaya BCM web page.

Note: It may take several hours to save programming records, depending on the size of the system. Avaya recommends that you saving programming records during periods of low system use.

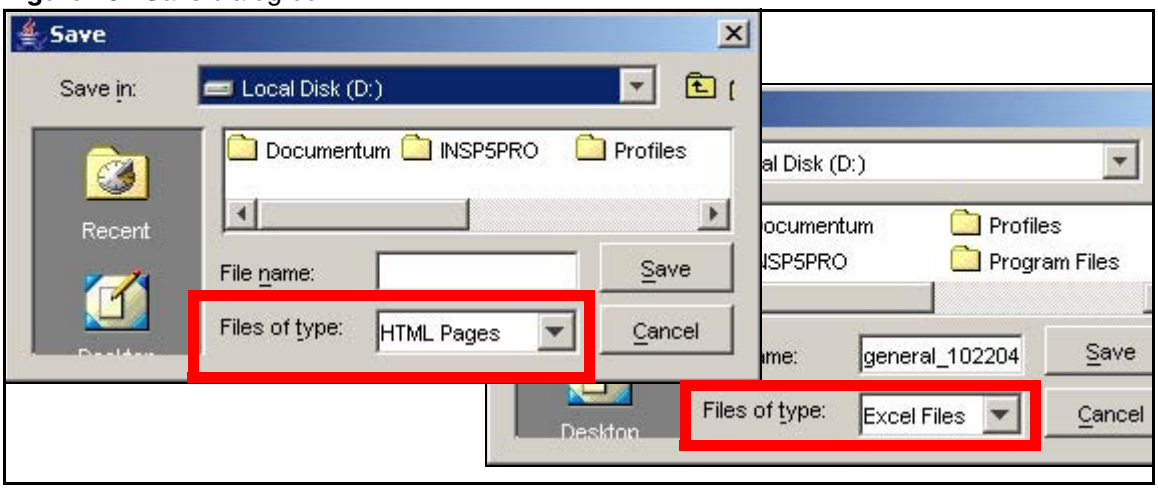
Use the following procedure to capture the current programming record.

Capturing the current configuration

1 Select the item on the task navigation panel for which you want to save the data into an HTML report or Excel workbook. An item can be a task item, task bullet, or a folder.

2 Click on **Session, device IP address, Save Programming Record, Save Selected Data.**
A warning dialog box appears; review the warning and click **Yes**. A **Save** dialog box appears.

Figure 23 Save dialog box



3 In the **Save**: field choose the path where you want the file stored.

4 In the **Files of type**: field, choose the format in which you want to save the data (HTML or Microsoft Excel spreadsheet).

5 Enter a File name. Avaya recommends that you make the current date and system name part of the file name.

6 Click on **Save**.

Note: The **Save All Data** selection can take up to 45 minutes to complete. Your computer must stay connected to the element during this time, as the **Save All Data** function is actively writing into the file specified until the function is complete.

How do I find the Avaya BCM system health?

You can use the Avaya BCM Monitor to view information about system health.

The Usage Indicators tab on the BCM Monitor displays real time information about the BCM450 system, including:

- BCM system data, including CPU and memory use
- resources used on the Media Card, including signaling channels, media channels, voice bus channels, and DSP resources
- active telephony devices, such as IP trunks, IP sets. voice ports, and media gateways

The information is displayed as an absolute figure and as a percentage of the resource used. Use this procedure to access system health information.

Viewing the system health

1 Select **Administration, Utilities, BCM Monitor** and click the **Launch BCM Monitor** button.

1 Select the **Usage Indicators** tab.

How do I show specific process states?

Use the following procedure to view specific process states.

Viewing specific process states

1 Select **Administration, General**, **Service Manager**.

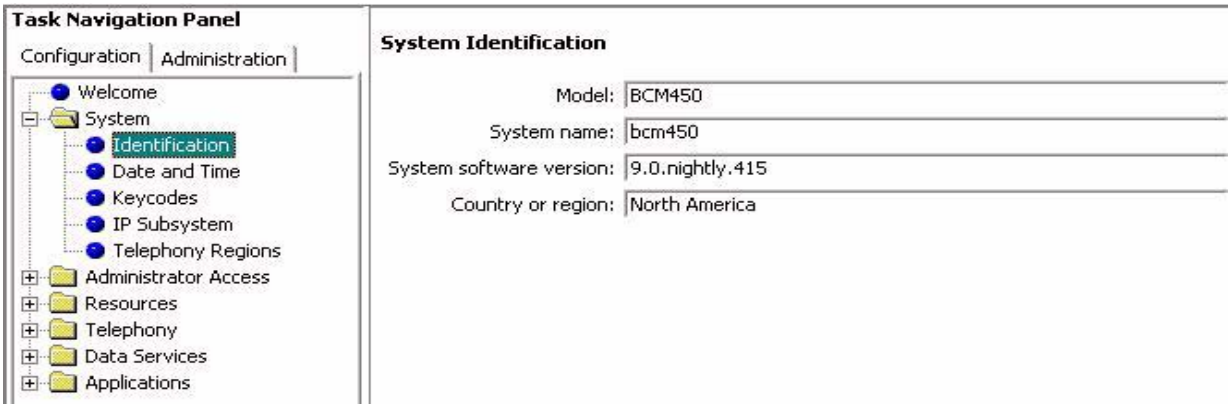
The **Service Manager** page opens. Services are displayed in the Services table.

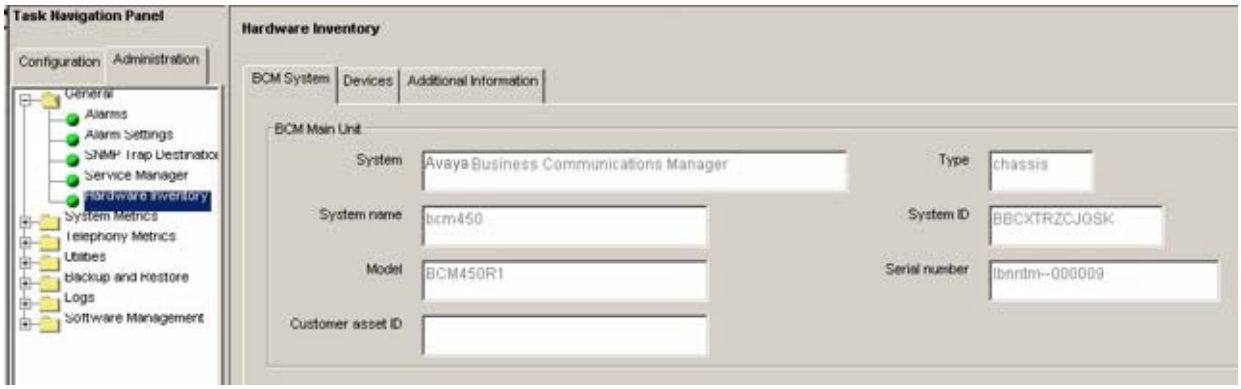
How do I verify current software revision?

Use the following procedure to view the current software revision.

Verify the current software revision

1 Select **Configuration, System, Identification**.





How do I find the Avaya BCM450 System ID and Serial Number?

Use the following procedure to view the system ID and serial number.

Viewing the system ID and serial number

1 Select **Administration, General, Hardware Inventory**.

2 Click the **BCM450 System** tab.

Connectivity problems

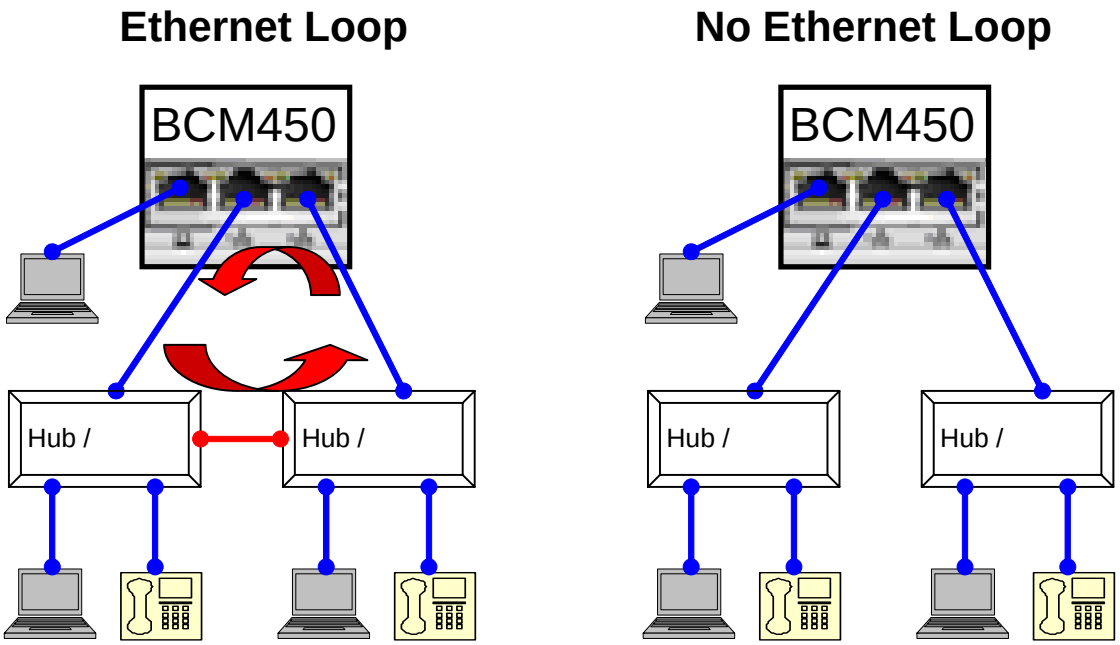
This section answers the following question:

What is an Ethernet loop, and how do I avoid creating one?

The Avaya BCM450 does not support the Bridging Protocol Data Unit (BPDU), and therefore, you must be careful not to create Ethernet lops in the network while connected to these two ports.

Figure 24 shows and Ethernet loop and how to avoid it.

Figure 24 Ethernet loops



IP addresses

This section answers the following questions:

- Can I modify the IP address of the OAM port? on page 109
- What are the default IP addresses of the Avaya BCM ports? on page 110

Can I modify the IP address of the OAM port?

You cannot change the IP address of the OAM port. You can use Business Element Manager to view the OAM port parameters.

What are the default IP addresses of the Avaya BCM ports?

The default addresses of the OAM LAN port are:

- IP address: 10.10.11.1
- Subnet mask: 255.255.255.0

The default addresses of the customer LAN port are:

- IP address: 192.168.2.2
- Subnet mask: 255.255.254.0

Chapter 13
Contacting Technical Support

The information in this chapter applies to both the BCM50 and the BCM450 platforms running Avaya Business Communications Manager (BCM) 6.0.

If you cannot resolve an issue using the information and steps provided in this guide, use the information in this chapter to contact Avaya Technical Support. This chapter identifies all of the critical information that you must gather before contacting Avaya Technical Support.

Navigation

Getting technical documentation

To download and print selected technical publications and release notes directly from the Internet, go to http://www.avaya.com/support.

Getting product training

Ongoing product training is available. For more information or to register, you can access the Web site at http://www.avaya.com/support. From this Web site, you can locate the Training contacts link on the left-hand navigation pane.

Getting help from a distributor or reseller

If you purchased a service contract for your Avaya product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

Getting technical support from the Avaya Web site

The easiest and most effective way to get technical support for Avaya products is from the Avaya Technical Support Web site at http://www.avaya.com/support.