Troubleshooting Guide for Distributors
Avaya Communication Server 1000

7.5
NN43001-730, Standard 04.08
April 2012

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Contents

Chapter 1: New in this release

The following sections detail what is new in Avaya Troubleshooting Guide for Distributors NN43001-730 for Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5.

Navigation

- Feature changes on page 17
- Other changes on page 17

Feature changes

There are no updates to the feature descriptions in this document.

Other changes

There are no other changes.

Revision History

April 2012	Standard 04.08. This document is up-issued to support the removal of Gryphon tool content.
January 2012	Standard 04.07. This document is up-issued for the addition of the chapter IP Media Gateway.
November 2011	Standard 04.06. This document is up-issued to support the removal of content for outdated features, hardware, and system types.
September 2011	Standard 04.05. This document is up-issued to reflect changes in technical content for corrupted report log files.

February 2011	Standard 04.04. This document is up-issued to support Avaya Communication Server 1000 Release 7.5. TCP ports on page 51 contains revised TCP port information.
January 2011	Standard 04.03. This document is up-issued to support Avaya Communication Server 1000 Release 7.5.
November 2010	Standard 04.02. This document is up-issued to support Avaya Communication Server 1000 Release 7.5.
November 2010	Standard 04.01. This document was issued to support Avaya Communication Server 1000 Release 7.5.
February 2010	Standard 03.03. This document is up-issued to support Communication Server 1000 Release 7.0.
December 2010	Standard 03.02. This document is up-issued to support Communication Server 1000 Release 7.0.
June 2010	Standard 03.01. This document is up-issued to support Avaya Communication Server 1000 Release 7.0.
June 2009	Standard 02.01. This document is up-issued to support Communication Server 1000 Release 6.0.

Chapter 2: Customer service

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Navigation

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Chapter 3: About this document

This document contains commands and techniques you can use to troubleshoot problems with Avaya Communication Server 1000 and VoIP components. The information is for administrators and installers who are familiar with the information in the relevant technical publications. This document is intended to take you to the next debug level and provide additional information for those skilled in working directly with the Call Server or the Wind River VxWorks Shell on various platforms.

The command descriptions in this guide include syntax, examples, and tips to use and interpret results. Avaya recommends that you proceed carefully when you use the commands outlined in this guide.

You require a clear understanding of the architectural differences between Avaya CS 1000 and VoIP systems and the features supported for a system.

Reference documents

- *Avaya Security Management Fundamentals, NN43001-604*
- *Avaya Telephony Services Access Control Management, NN43001-602*
- *Avaya Unified Communications Management Common Services Fundamentals, NN43001-116*
- *Avaya Element Manager System Reference — Administration, NN43001-632*
- *Avaya IP Deskphones Fundamentals, NN43001-368*

Chapter 4: Introduction

The Avaya Communication Server 1000 (CS 1000) and VoIP applications run on a variety of platforms and offer various features depending on the platform:

- Secure Multimedia Controller (SMC), Media Card 32 Secure (MC32S), Signaling Servers, and Gateway Controllers are the platforms on which the Voice Gateway Media Card (VGMC) application can run. The Gateway Controller can be a Media Gateway Controller (MGC) card, Common Processor Media Gateway (CP MG) card, or Media Gateway Extended Peripheral Equipment Controller (MG XPEC) card. A different binary file exists for each card because each card has a different CPU. The same source code files are used to build all the binary files; therefore, application functionality is the same on all platforms unless system issues prevent it.
- The SMC card has 8 or 32 gateway ports. The MC32S has 32 gateway ports. Throughout the document, whenever the channel number is a CLI command parameter, the value range is 0 to 7 or 0 to 31 for the SMC, and 0 to 31 for the MC32S and MGC. The DSP software generates TCID in some printouts; TCID and the channel number are numerically equivalent.
- The term VGMC describes the functionality of the SMC and MC32S cards. In general, these cards are typically gateway cards and the system uses DSP resources as gateways between the TDM and packet domains. Using VGMC means the card can be an SMC, or an MC32S card. If a feature is specific to one card, only the name of the affected card is used. In this document, the term MGC applies to all Gateway Controller hardware platforms.

Network sniffer

Note:

There is a sniffer tool resident on Linux Targets. This tool is called the Packet Capture Tool (PCAP). See PCAP tools for Linux on page 395 for more details on this tool.

For network-related problems, a network sniffer helps to see which packets are sent and received by the VGMC/Signaling Server on the TLAN and ELAN interfaces. In many cases, using a sniffer is the only way to determine the cause of an IP Phone registration, voice QoS, or other network messaging problem. Employees who support the IP Line product need access to a sniffer and must understand its use.

Stand-alone sniffers exist but the most cost-effective are those that are a PC application. These applications monitor the subnet to which the PC is connected and display information about the network traffic. The applications can usually monitor only specific port numbers or protocols and display and decode most packet contents.

Avaya recommends the following programs:

- Wireshark (freeware). Go to http://www.wireshark.org and search for your required platform. Wireshark is a sniffer and protocol analyzer that supports encryption. A decoder for the UNIStim protocol is available for Wireshark. You can obtain the decoder from the FS or GNTS group. Avaya strongly recommends that you install this decoder to help you debug signaling problems.

- Sniffer Pro. You must purchase a separate VoIP decode option with this version. (http://www.sniffer.com) You must have a licence key to run Sniffer Pro. An add-on UNIStim/RUDP message decode package is available for Sniffer Pro. When the decode package installed, the proprietary UNIStim/RUDP messaging is decoded. Avaya strongly recommends that you install this add-on.

Connect a sniffer to the ELAN when you debug VGMC/MGC/Signaling Server to Call Server or VGMC/MGC/Signaling Server to EM problems. Connect the sniffer to the TLAN or the LAN with the IP Phone to debug TPS to IP Phone problems and voice Gateway-related issues. For more information about using a sniffer, see Network sniffer on page 31.

VGMC VxWorks shell access

The following commands control aspects of the VGMC shell access. While some commands in this document are accepted at the VGMC> shell prompt, all are accepted at the VxWorks shell prompt (->). Use the command **`vxWorksShell`** to access that shell interface on the VGMC. Use **`vxshell`** to access the shell interface on the Signaling Server.

Note:

Avaya recommends that you use a TTY logon to the VGMC through an ELAN Telnet session instead of a direct serial port connection if you log large amounts of data or copy large SYSLOG or OMREPORT files to the console.

VGMC or MGC maintenance port connections

Connect to the VGMC or MGC maintenance port using the following methods.

VGMC or MGC card connection

Connect a serial cable to the backplane adaptor or to the faceplate connector of the MC32S, or SMC card. The card hardware cannot support two devices connected at once; device damage can occur.

Connect to the cards as follows:

- SMC: for the backplane L adaptor, connect to the RS-232 9-pin connector
- MC32S: for the backplane L adaptor, connect to the RS-232 9-pin connector
- MGC: install in slot 0 (where the SSC was installed in previous releases); the standard SDI cable breaks out the ports; connect to SDI0

Modem connection

If a modem directly connects to the VGMC or MC32S, you require a null modem adaptor between the card faceplate or the backplane connector and the modem.

The MGC can support a modem connection on SDI0 only; SDI1 and SD2 do not have hardware flow control. A null modem is not required to connect to SDI0.

A null modem is not required to connect to the Signaling Server.

Terminal configuration

For the VGMC and MC32S, set the terminal device to 9600,8,N,1. Set flow control to None (Hyperterm terminology) or a similar setting. If hardware flow control is enabled, you can see information from the VGMC but the card does not respond to keystrokes; the condition eventually deteriorates to no printing and no response. If this happens, change the flow control setting back to None, close the session, and reopen it. The VGMC should respond.

The default configuration for the MGC card is 9600,8 N,1 with no flow control. Change this configuration in LD 17.

On the Signaling Server, set the terminal device to 19200,8,N,1. Change this configuration by using the **`stty`** command after you log on.

Shell access

When you log into a card, a shell prompt appears to indicate the active shell. The shell prompt is different between the VGMC and Signaling Servers. Many commands in this document are available only from the lowest level shell, which requires a full logon sequence to access them. The command section indicates at which shell level the command can run.

VGMC

These cards have two levels: the VGMC application CLI (VGMC>) and the VxWorks shell (->). The following example shows how to go to and from the VGMC shell on the VGMCs.

```
IPL> vxshell
login: pdt2
password:
Welcome to the VxWorks Shell
WARNING: Data entry errors in this shell can cause loss of service. Use itgShell to
return to the ITG shell.
value = 52688160 = 0x323f520
-> -> exit
IPL>
```

MC32S card

The MC32S card is similar to the Signaling Server; no VGMC> prompt exists, and the pdt shell functions as the vxshell. The PDT shell passes commands to the vxWorks shell so most commands run from the PDT shell level (pdt>). Upon connection to the card, you are prompted with the

```
―login:‖
```

string after pressing the Enter key. You can enter a valid user name and password to enter the OAM shell, or type **^PDT** to enter either PDT shell. Go to PDT from the OAM shell at any time, but once in the PDT shell, you must exit before going to the OAM shell. Because all OAM-level commands are in PDT, this should work correctly. Logging on through ssh takes you directly to PDT with no OAM access. In any shell, if no keyboard activity occurs for a period of time (20 minutes by default) the shell terminates and you return to the ―login prompt from a serial connection or disconnects from a remote logon session. The VxWorks shell and the ssh sessions do not timeout.

The following example shows a PDT shell logon on the MC32S card.

```
oam>
<< enter ‘ctrl pdt‘ to get to the pdt> shell >>

PDT login on /pty/pty00.S
Username: pdt2
Password:

The software and data stored on this system are the property of, or licensed to,
Avaya Inc. and are lawfully available only to authorized users for approved
purposes. Unauthorized access to any software or data on this system is strictly
prohibited and punishable under appropriate laws. If you are not an authorized user
then logout immediately. This system may be monitored for operational purposes at
any time.
SEC0029 Security Warning: This system contains insecure passwords, notify your
system administrator
```

```
Welcome to the MC32S command line.
Software Version: no label found
Management IP: 47.11.214.85
Primary CS IP Address: 0.0.0.0
OS Created on: Date [Apr 19 2007] Time [12:32:21]

pdt>
```

MGC card

Because the MGC card can be accessed through the Call Server, the MGC card does not support a PDT shell. Instead, use a Local Diagnostic Shell 1 (LDB1), which has functionality similar to the PDT1 shell on the Call Server. The MGC card also supports an advanced LDB2 shell, similar in functionality to the PDT2 shell on the Call Server.

You can access the LDB shells locally through one of the MGC serial ports or remotely through rlogin, Telnet, secure shell, or PPP. When accessing the MGC, you are prompted to provide a user name and password. If you enter the Call Server PDT1 user name and password, enter the LDB1 shell. If you enter the Call Server PDT2 user name and password, you enter the LDB2 shell. If you enter the LDB1 or LDB2 shell, the command prompt is ldb>. The VxWorks shell can be entered only from the LDB2 shell, by entering **su**.

The following example shows an LDB shell logon on the MGC card.

```
oam>
<< enter ‘ctrl ldb‘ to get to the ldb> shell >>

LDB login on /pty/pty00.S
Username: pdt2
Password:


The software and data stored on this system are the property of, or licensed to,
Avaya Inc. and are lawfully available only to authorized users for approved
purposes. Unauthorized access to any software or data on this system is strictly
prohibited and punishable under appropriate laws. If you are not an authorized user
then logout immediately. This system may be monitored for operational purposes at
any time.
SEC0029 Security Warning: This system contains insecure passwords, notify your
system administrator

Welcome to the Media Gateway Controller command line.
Firmware Version: MGCCAD15
Management IP: 47.11.214.83

IPMG: 20 0
Primary CS IP Address: 47.11.214.87
Installed Daughterboards: 1
OS Created on: Date [Apr 13 2007] Time [15:24:46]

ldb> su
->
-> exit
ldb>
```

The appropriate Avaya development and Global Customer Care Service staff have the logon information; it is not included here for security reasons.

Cannot access VGMC through Telnet

When you use a Telnet session to access a card, you may receive no response to your input. Try entering Ctrl+Q from a TTY session though a serial port. If this does not fix the problem, then the card may be locked. For more information, see VGMC or Signaling Server locks up on page 38.

VGMC corrupted password

If the NVRAM becomes corrupt or another problem prevents you from logging onto the VGMC shell, you can reset the password. Enter the BIOS as the card boots (enter jkl when prompted). Then enter the command **`shellTi`**, which resets the password to the factory default. You can then log on and change the password.

VGMC directory structure

The remainder of this document refers to directories that store various files used by the VGMC application and the LTPS. The directories and locations of directories vary between the VGMCs and the Signaling Server. The following sections describe the directory locations for each card type.

VGMC

The VGMC application uses a number of directories on the VGMC /C: flash drive to store configuration, data and log files:

- LOG: contains the SYSLOG.n files
- OM: contains the OMREPORT.nnn files
- CONFIG: contains the CONFIG.INI, BOOTP.TAB, SECURITY.INI, and TPS.INI configuration files
- FW: contains the IP Phone downloadable firmware files
- DATA: contains the tone, cadence, and IP Phone gain tables

- LOCALE: contains the LANGUAGE.INI file for IP Phone country-specific information
- ETC: exists only if created to store a startup script

Reformatted root directories

If a VGMC has the C: drive erased, then the VGMC application rebuilds the necessary directories. The following is the top level directory structure, with only the directories built by the VGMC application.

```
-> ll size date time name
-------- ------ ------ --------
512 JUN-06-2000 08:28:44 LOG <DIR>
512 JUN-06-2000 08:28:46 OM <DIR>
512 JUN-06-2000 08:28:50 CONFIG <DIR>
512 JUN-06-2000 08:33:34 FW <DIR>
512 JUL-01-2000 12:00:22 DATA <DIR>
512 JUL-01-2000 12:00:22 LOCALE <DIR>
value = 0 = 0x0
->
```

The directories are built as part of the VGMC application boot sequence. However, the /FW directory is built by the UMS task. This task (and many others) does not start until after communication is established with the Call Server. Communication with the Call Server requires the CONFIG.INI file and BOOTP data to be on the card. This means you cannot download the IP Deskphone firmware file (C:/FW/fwfile.1) to the card until you download the CONFIG.INI file and BOOTP data and reboot the card. The firmware download fails if you try before completing the other steps. The correct order of installation is as follows:

1. Download node and card properties and new VGMC application if needed.
2. Reboot card and verify Call Server link is established.
3. Download IP Deskphone firmware file.

Chapter 5: Troubleshooting

This section contains tips and suggested commands to troubleshoot problems for Avaya Communication Server 1000 (Avaya CS 1000).

Network sniffer

A network sniffer is an excellent tool for troubleshooting network devices. By capturing exactly that information that is sent on the wire and providing decoders for the various protocol levels, capture traces often provide solid answers about why phones do not register, why Voice Media Gateway Cards (VGMC) do not communicate, or the source of voice QoS problems.

Connecting a sniffer

A hub is useful to connect the sniffer at the device being investigated. With a hub, the sniffer sees the same traffic as the VGMC, Signaling Server, or IP Phone because all ports receive the same data. Match the hub speed to the device speed. Although not recommended, you can use a 10BaseT hub on the VGMC or Signaling Server TLAN. However, Avaya does not recommend that you place the TLAN on a 10BaseT hub if many IP Phones register with it or when high concurrent usage exists for gateway ports.

If you use a smart hub, devices connected at 10BaseT cannot detect traffic generated by devices connected at 100BaseT and vice versa. Therefore, you must configure your sniffer to use the same speed as the device you want to sniff to capture packets.

When a Layer 2 switch is used, you must configure port mirroring (or similar product depending on your product) so the switch can send a copy of all packets on a port to the port with the connected sniffer.

If the Layer 2 switch does support port mirroring, or you have no access to the management interface, you can insert a passive hub in line with the desired port and connect the sniffer to it.

It can be useful to connect a sniffer at both ends of an IP Phone to VGMC or Signaling Server connection that has problems. Compare the two capture files to uncover network problems, such as a router discarding signaling messages or old ARP cache addresses in packets.

The MGC and MC32S cards can mirror a port without using an external hub or switch.

Collecting sniffer captures

To facilitate analyzing and cross-referencing sniffer captures, ensure the PC, on which the sniffer runs, has the same date an time on the device being sniffed. Because hundreds of packets can be generated within a few seconds, synchronizing the time to the second is recommended.

Use the capture filters to reduce the amount of captured information (unless capturing everything can provide clues to the root of the problem). For instance, create a filter with the VGMC or Signaling Server TLAN interface and the IP address of the IP Phone being debugged. First, create a new profile. Then modify the address parameters of the profile for the VGMC/ Signaling Server TLAN and the IP Phone address. Finally, select the filter before you start the capture.

Note:

Be sure to select IP for the Address Type. If set to Hardware, the MAC address of the endpoints is expected but the program allows you to enter an IP address; you receive no indication of any problem until you receive an "Invalid Hardware Address" error when you try to capture using the filter.

Use the display filters to filter information from a capture file while you diagnose a problem. A new window appears each time an applied filter changes the contents. You can save only those windows with useful information. The process create the filter and selecting it is the same process you use for the capture.

After you stop the capture, display it. Select the Decode tab on the expert window to see the packet information. If you installed the UNIStim or RUDP packet decode package, the contents of the UNIStim and RUDP messages are decoded as well as all default protocols (IP, TCP, and RTP).

The Matrix tab shows the communication between various devices as detected by the sniffer. On the Matrix tab, you can filter by selecting an IP address and clicking the Filter button. This procedure shows all traffic send and received by the device that uses the selected IP address.

The Host Table lists statistics for each host in the capture, while the Statistics tab shows overall statistics.

Ping and Traceroute are available on the Tools menu.

When no host names are assigned to network devices, you can create names using the Address Book command on the Tools menu. The names then appear in the capture files in place of the IP address so you can read the trace files faster than reading IP addresses. Save this address book under the Address Book command on the Database menu.

To debug problems related to timing, you can select a packet in the Decode tab Summary Section; right-click and select Mark Current Frame. Notice that the selected packet has a

Relative Time of 0 seconds to provide an easy way to determine the amount of time that passed since a particular event. This is helpful to debug IP Phone reset problems.

VoIP problems

This section describes VoIP problems you may encounter.

VGMC IP addresses incorrectly configured

If the VGMC detects a duplicate IP address, the card may print one or more of the following messages:

```
JAN 02 08:06:57 tNetTask: Info arp info overwritten for c0a80195 by 00:60:38:01:
a1:46
JAN 02 08:06:57 tNetTask: Info duplicate IP address c0a80195 sent from Ethernet
address 00:60:38:01:a1:b8
```

The same IP address for two devices can cause unexpected and random behaviours on the IP Phones or the VGMC or Signaling Servers. You must identify the device that is configured to use the displayed IP address, locate the device specified by the MAC address, and resolve the duplicate IP assignment.

VGMC receiving incorrect Bootp information

Problems can occur when VGMCs receive invalid information from a BOOTP or a DHCP server. The result can be a corrupt leader card. The workaround is to turn the BOOTP relay agent off at the router where the ELAN segment is connected.

IP Phone goes offline

Two scenarios can cause the IP Phone to go offline. Each can be identified by logged messages.

Watchdog reset

The TPS periodically sends a watchdog timer reset message to every IP Phone (see Watchdog reset). This message resets a watchdog timer on the IP Phone and causes the IP Phone to send an acknowledgement. If no response is received from the IP Phone, the RUDP transport resends the message up to 10 times, waiting 400 milliseconds between each for a response. After the tenth retransmission, the TPS prints an error message indicating that the RUDP link failed, marks the telephone as offline, and notifies the Call Server core.

When the IP Phone fails to receive the watchdog timer reset message, the watchdog timer times out, reboots, and begins registration. This occurs when a network fails or high traffic through a router causes the messages to be lost or delayed. This can happen when the IP Phone is on a subnet different from the TPS TLAN and one of the network routers drops packets. The RUDP polling message is a plain UDP message and is thus a candidate for being dropped before higher priority packet data. Another possibility is that the IP Phone remains unplugged while the TPS card polls it.

The following is an example of the messages printed on the Maintenance port of the TPS card for this scenario:

```
JAN 23 15:32:59 tRDP: Error ITS2008 Terminal connection status: 192.168.1.141 lost
(20)
JAN 23 15:32:59 tVTM: Notice 192.168.1.141 Unregistered, terminal = 0x3a86e64,
device = 0x3a86ff8
JAN 23 15:32:59 tSET: Info Terminal offline 192.168.1.141 TN 0x6005
```

Then when the telephone reboots and registers, the following prints:

```
JAN 23 15:36:50 tCSV: Info 192.168.1.141 Connecting to node 1, TN: 61.1, 0x6005
JAN 23 15:36:52 tVTM: Info ITS5008 Terminal connection status: 192.168.1.141 ok (20)
JAN 23 15:36:53 tSET: Info 192.168.1.141 TN 61-01 Registered with M1
```

IP Phone reboots or power cycles between pollings

If the IP Phone reboots or has power cycled between pollings, the TPS does not detect the failure but receives an unexpected registration. Because the TPS does not determine that the IP Phone was offline, a different sequence of messages print:

```
JAN 23 15:39:37 tCSV: Info 192.168.1.141 Connecting to node 1, TN: 61.1, 0x6005
JAN 23 15:39:39 tRDP: Warning 192.168.1.141 Connection restarted, cid = 0x33cdb28
JAN 23 15:39:39 tVTM: Notice 192.168.1.141 Unregistered, terminal = 0x33cd74c,
device = 0x33cd4b4 JAN 23 15:39:39 tSET: Info Terminal offline 192.168.1.141 TN
0x6005
JAN 23 15:39:39 tVTM: Info ITS5008 Terminal connection status: 192.168.1.141 ok (20)
JAN 23 15:39:40 tSET: Info 192.168.1.141 TN 61-01 Registered with M1
```

Sniffer captures of IP Phone resets

The following are tips for collecting sniffer captures of IP Phone communications with the TPS:

- On the Avaya Communication Server 1000 and 1000M systems, the Signaling Server has priority over the VGMC TPS. For nodes with Signaling Server as the leader, the Signaling Servers require that all IP Phones on the node be registered. When a primary and secondary Signaling Server are on a node, the telephone registrations are split between them. If you are unsure which Signaling Server a telephone registers to, you can disable the LTPS on the other Signaling Servers by using the disiTPS CLI command (if sufficient registration capacity is available on the remaining LTPS for the displaced phones).

  Note:

  If the TLAN connection to the available Signaling Servers fails, phones can register to the VGMCs. The phones do not automatically switch back. You must enter the **`loadBalance`** CLI command after the Signaling Server returns online to return the phones to the Signaling Server.

- On the Meridian 1, if you have multiple VGMCs in a node with approximately the same number of phones for each card, you cannot be certain which card uses new telephone registrations. However, you can reboot one of the VGMCs so that it has no registered phones. Because the telephones will register with the VGMC that has the least number of phones registered, you know in advance that this card uses new IP Phone registrations. If you have a specific IP Phone (or group of phones) that you want to capture information on, you can register the telephones to that card. If IP Phone reset problems occur, you know that the IP Phone registers to the same card (provided the number of phones registered to the card is not equal to the number on other VGMCs). Consequently, you need not connect a sniffer to every card on the node to capture the problem.
- When you work with IP Phone reset problems, try to register the telephone you are monitoring to the Leader card. This way, you can see the entire registration process (Connect Server messages appear).
- Ensure that the times on the Sniffer PCs are synchronized with the time on the TPS. To determine the date and time on the TPS, through the vxWorksShell, run the following command: **`-> date`** Now analyzing the sniffer capture is easy. Ensure that the buffers on each sniffer are configured to wrap around and write to file.
- When sniffing a LTPS card, try to capture the CLI output at the same time. Use the same sniffer PC (that uses the COM port and plugs into the faceplate). Retrieve log files from the LTPS cards for cross-referencing.
- You can perform port mirroring, using the ethportmirror command, to connect LAN analyzer equipment to the Layer 2 switch and capture LAN traffic on external LAN ports (such as Layer 2 TLAN/ELAN and 100BaseT Media Gateways). You can also use port mirroring to capture the Signaling or proprietary message traffic (Mindspeed Tone and Conf Module, Expansion Boards, and VoIP Daughter Boards) between internal Layer 2

components. For more information about using the ethportmirror command, see "ethportmirror on page 270".

Reset conditions for IP Phones

If an IP Phone resets, it stores the reason for the reset in its nonvolatile memory. The information prints from the maintenance port of the connect Server and in the log file when the IP Phone registers again, as follows.

```
31/10/02 17:39:41 LOG0006 CSV: 192.168.20.11 Connecting to node 7812,

TN: 61-01, 0x6005 [Soft Reset: Watchdog timeout, code: 1]
31/10/02 17:39:50 LOG0006 CSV: 192.168.20.12 Connecting to node 7812,
TN: 61-00, 0x6004 [Soft Reset: Watchdog timeout, code: 1]
```

Use the usiQueryResetReason on page 242 command to retrieve this information. The data is valid only until the next reset occurs, which overwrites the prior value.

Reset conditions for the 2050 IP Softphone

The Avaya 2050 IP Softphone 2050 resets if one of the following conditions occurs:

- The watchdog timer expires.
- The 2050 IP Softphone is instructed to hard or soft reset by the CS 1000.
- 2050 IP Softphone change.
- Firewall applications that intercept or delay packets, cause the 2050 IP Softphone to reset because the Watchdog timer expires. Exercise care when you use firewall applications on the same computer as the 2050 IP Softphone.

Watchdog timers can expire when there is no UNIStim traffic on the 2050 IP Softphone.

2050 IP Softphone not connecting to TPS

If the Avaya IP Softphone 2050 displays the message "Connecting...," "Server unreachable. Reconnecting in ...nn seconds," or "· 802.1 QoS is not supported on your network," the 2050 IP Softphone tries to open a UNIStim connection (socket) with the CS 1000. If the CS 1000 is up, reachable, and the 2050 IP Softphone uses the correct IP address, the message

"Connecting..." appears only briefly and the message "Server unreachable..." does not appear. The latter message indicates a problem reaching the CS 1000:

- Check the connectivity of the PC to the network. Try to ping another station on the network that you know is up. Try to ping the CS 1000. Check if other stations are up.
- Verify the 2050 IP Softphone server address (IP and port) in the 2050 IP Softphone configuration utility. Verify CS 1000 configuration to ensure the 2050 IP Softphone request to connect is permitted (enough ports are programmed, security is operational). In the 2050 IP Softphone configuration utility on the QoS tab, select Off, and restart the 2050 IP Softphone. Use of the trace utility or a sniffer may yield more information about the problem.

A message "Connection Established. Reinitializing..." indicates that the 2050 IP Softphone established a connection (socket) with the CS 1000. The 2050 IP Softphone has sent a request to the CS 1000 to resume connection. The CS 1000 is expected to reply to the this request. During startup, the Call Server passes the 2050 IP Softphone to various subcomponents, causing this message to rapidly appear two or three times during a normal startup. If the message is not a transient startup message, then review the CS 1000 programming. The number of times the 2050 IP Softphone passes to other subcomponents can help you identify the problem. Use the trace utility or a sniffer to debug the problem.

IP Phone not connecting to TPS

If an IP Phone continuously registers but then reboots after the watchdog timer period expires, check for an incorrect VLAN configuration. This can occur when the Enable 802.1Q support check box is selected but the IP Phone is on a Layer 2 switch that does not support VLAN tags or is not configured. The IP Phone initially registers to the Signaling Server or VGMC because it starts with no VLAN tagging; the TPS then enables the VLAN tagging because you enabled VLAN priority. Because the switch does not expect the VLAN tagged packets, which then start to arrive from the telephone, it discards them. The LTPS no longer can communicate with the IP Phone so the IP Phone eventually resets when the watchdog timer expires.

To correct this problem, either deselect the Enable 802.1Q support in EM or configure the network for 802.1Q VLAN tagging.

VGMC or Signaling Server locks up

If a VGMC or Signaling Server card locks up (for example, you cannot communicate with the VGMC through the faceplate or a Telnet session, you cannot use gateway channels, or telephones cannot register to the card), use the following techniques to diagnose the card:

- Note the faceplate display. If an error code appears, check the applicable technical publication and perform the suggested steps.
- Attempt to ping the TLAN of the locked card from another device on the same subnet (for example, another VGMC)
- Attempt to ping the ELAN of the locked card from the Call Server or the PC.
- Check if the VGMC 8051 processor responds. From the Call Server, enter the following commands:
    - LD 32
    - idc <card TN>
- If you receive a response from the command in the previous step, then check if the processor responds. From the Call Server, enter the following commands:
    - LD 32
    - disc <card TN>
    - enic <card TN>
- If you get a response from the command in the previous step, then, if applicable, check if an IP Phone currently registered to the VGMC/Signaling Server is responding:
    - LD 32
    - idu <IP Phone TN>
- If al the preceding steps provide a response, then your card is not locked. Perhaps your shell task is locked. Connect to the serial port (faceplate or octopus cable), if necessary, and press Ctrl+Q to see if you can access the card. Certain tasks may be suspended.
- If all the preceeding steps fail to bring up the card, then you must reboot the card.
- If a reboot fails, then unseat and reseat the card. After you reboot the card, retrieve the log files from the VGMC/Signaling Server, and the history file and report log from the Call Server, and send them to your support personnel for analysis.

VGMC continuously reboots and downloads firmware versions

If you have multiple cards in your node and an IP Phone constantly reboots and downloads firmware, then check that each card has the same firmware version. Use the command umsPolicyShow on page 234 to see which firmware will be downloaded to a telephone. Only one firmware version can be installed on a node; after a telephone downloads new firmware, it reboots and registers again. If it registers to a TPS with a different firmware version, it downloads that new firmware and then reboots. This process can continue indefinitely if all cards on the VGMC node have approximately the same number of registered telephones.

Incorrect IP Phone software version

If IP Phones are not downloaded with the expected version of firmware, the firmware file may be missing from the card or have an incorrect file name. The expected file name is i2002.fw for the IP Phone 2002 and i2004.fw for the IP Phone 2004. Use the command umsPolicyShow on page 234 to see which firmware will be downloaded to a telephone. Check the /FW directory to ensure that a firmware file with the valid file name is present.

```
IPL> umsPolicyShow

Total firmware = 1

FirmWare Retry TermType PolicyName Server FileName Limit When Upgrade Protocol
---------- ---------- ------------- ---------------- ---------------- -----
--------- ---------- --------------- -----
0602B59 -1 i2002 DEFAULT_I2002 192.168.1.140 /ums/i2002.fw 10 ALWAYS ANY TFTP

value = 0 = 0x0
IPL>
-> 11
size date time name
-------- ------ ------ --------
512 JUN-06-2000 08:33:34 . <DIR>
512 JUN-06-2000 08:33:34 .. <DIR>
933763 JUN-06-2003 08:33:38 i2002.fw
950810 JUN-06-2003 08:37:22 FWFILE~1.1

value = 0 = 0x0
```

VGMC link to Call Server fails

If the link to the Call Server fails, the VGMC application prints the following message. An SNMP alarm (ITS1009) occurs and displays on the VGMC faceplate.

If the IP address of the Call Server changes, you must initialize the Call Server to apply the changes. Also make sure that the ELAN Configuration section in the config.ini file of the VGMC is correct.

```
->
192.168.1.10 (192.168.1.10) deleted

JAN 23 15:54:33 tRDP: Alert ITS1009 Call server communication link: 192.168.1.10
down (20)
JAN 23 15:54:33 tpbxReset: Info Attempting to establish PBX link
JAN 23 15:54:33 tTPS: Info ELAN connection down, refuse further registration
JAN 23 15:54:33 tVGW: Info GW OffLine msg received from pbxLib, close all dsp
channels and unregister Gateways after 600 seconds
JAN 23 15:54:33 tSET: Info PBX Link down, reset all registered set after 600 seconds
```

When the link recovers, the following prints.

```
JAN 23 15:55:48 tpbxReset: Info ITS5009 Call server communication link: 192.168.1.10
up (20)
JAN 23 15:55:48 tpbxReset: Info PBX UDP link established
JAN 23 15:55:48 tpbxReset: Info PBX TCP link not used
JAN 23 15:55:48 tTPS: Info ELAN connection up, accept set registration
JAN 23 15:55:48 tVGW: Info GW OnLine msg received from pbxLib
JAN 23 15:55:48 tVGW: Info vgwSyncReqReceive: freq 0, rlsCall 1, callServer 0
JAN 23 15:55:48 tSET: Info dsetSyncReqReceive: freq 0, rlsCall 1, callServer 0
JAN 23 15:55:48 tCSV: Info Callserver type set to Meridian Small system
JAN 23 15:55:48 tVGW: Info Channel 0, already registered with M1 (?)
JAN 23 15:55:48 tVGW: Info Channel 1, already registered with M1 (?)
... (one msg per channel)
JAN 23 15:55:48 tVGW: Info Channel 23, already registered with M1 (?)
JAN 23 15:55:48 tSET: Info 192.168.1.142 TN 61-02 Registered with M1
... (one msg per phone)
JAN 23 15:55:48 tSET: Info 192.168.1.141 TN 61-01 Registered with M1
```

Call connects through VoIP gateway with no speechpath

If a call connects through the gateway but no speechpath exists, check the DSP receives data from the DS-30X backplane.

- If the problem call involves a trunk or far end VGMC or IP Phone, isolate the call down to one system, by conferencing in a local digital telephone. If the one-way speechpath still exists, then you can eliminate the far-end telephone or VGMC as being the source of the failure. Alternatively, if you can duplicate the problem, initiate a call between the IP Phone and a TDM telephone.
- Enter the command tsm_stat_req_tele_levels on page 227 for the channel; the levels are typically in the –300 to –600 range.
- Press and hold a digit key on the TDM telephone to generate DTMF towards the VGMC.
- Enter the command again and, if the levels are in the –10 to –100 range, then PCM passes between the card and the system. Otherwise, a problem likely exists with the card.
- Use the command genToneOn chNum, side, freq, duration on page 109 to generate a tone from the DSP to the TDM or from the DSP to the IP Phone. This can isolate an invalid

network connection from the IP Phone to the DSP or a bad timeslot or timeswitch connection from the TDM network to the DSP.

Calls to IP Phones in other VGMC nodes with separate TLANs

If multiple VGMC nodes belong to separate TLANs, but are configured to the same customer and use the same zones, then the potential exists for a one-way speechpath during IP to TDM calls or IP to IP calls across nodes. This situation occurs because the Call Server has no concept of a VGMC node; all IPTNs that belong to the same Call Server Customer Number are treated as one resource pool, regardless of the node ID. Therefore, the Call Server can choose any channel that belongs to the customer.

The selected channel can belong to a card in a different node. If the TLANs are separate and the IP network cannot route between the two subnets, then the IP Phone cannot access the IP address associated with the channel, which results in no speechpath.

If the IP network can route calls between the two subnets, then make sure that you correctly configure the default gateway. If no routing capabilities exist between the two subnets, you can solve the problem by adding a new zone for each node on a separate TLAN, and then configuring the channels and IP Phones to belong to the new zone.

Cannot make calls with particular zone and codec configurations

A problem can exist where a call connects but the codec does not match your expectation based on the zone configuration. Or, a call can fail to connect, and an error message prints on the Call Server TTY stating "No codec match found". This error occurs if you do not download the card configuration to all cards in the node after modification of the codec list. Then, when an IP Phone registered on one VGMC/Signaling Server calls an IP Phone registered on a different VGMC/Signaling Server or makes a gateway call by using a channel from a different VGMC, a codec mismatch can occur.

The codecs configured in EM are placed in the CONFIG.INI file (see CONFIG.INI on page 335) and downloaded to the VGMC. When the VGMC gateway channels register with the Call Server, the configured codec capabilities are sent to the Call Server CPU. Likewise, when an IP Phone registers with the system, the list codecs reported by the telephone as supported are sent to the Call Server. When a call occurs, the Call Server decides which codec the call uses based on the zones of the two endpoints:

- If the call is within the same zone (that is, both have the same zone value configured), the Intrazone codec is used; otherwise, the Interzone codec is used.
- If a mismatch occurs between the codecs (that is, one endpoint has BB (for example, G.729AB) and the other BQ (for example, G.711)), the Call Server chooses the codec with the lowest bandwidth usage (that is, BB).
- In the case of a gateway call, the zone of the VGMC gateway channel is compared to the IP Phone zone.

A problem can occur when the codecs change and the change is not downloaded to all cards in the node. This can result in the two endpoints registering with different codec lists. If only one codec matches between the two lists, the call may complete but use a codec different from the codec expected. When no codecs match between the two lists, the call fails and an error message prints on the Call Server stating that no codec match can be found.

Check this condition by entering the command rlmShow on page 307 at the Call Server pdt prompt. This prints the codecs configured on all telephones and gateway channels. If a configuration problem occurs, different lists for different phones and gateway channels print; ensure that the list is identical for every device.

In summary, to avoid errors whenever card properties change, you must download the change to all cards in the node. If this is done, this problem won‘t occur.

No dial tone on IP Phones when registered to Call Server with dual CPU

If your phones are registered but you receive no dial tone, check that the VGMC to which your telephone is registered is talking to the active Call Server CPU. On the VMGC, use the **`rudpShow`** and **`pbxLinkShow`** commands (see rudpShow on page 193 and pbxLinkShow on page 183) to verify that the card communicates with the proper CPU. On the Call Server, you can check the network configuration by using the LD 117 **`prt elnk`** command.

Input errors on the switch side or connection failure

If you find that you receive numerous input errors on the switch side or if a connection fails, it may be due to an ELAN/TLAN port misconfiguration between the expected speed and duplex and the actual values.

The Media default settings are as follows:

ELAN: 10M/Half TLAN: Auto-negotiate

Therefore, if the switch ports are Auto-negotiate, which is the recommended setting, then the ports should show

ELAN: 10M/Half TLAN: 100M/Full

However, some cards appear where the ports are configured as follows:

ELAN: 100M/Full TLAN: 10M/Half

To correct the problem, perform the following steps:

1. Issue the following command from the vxWorks shell: nvramTLanSpeedSet 10100 nvramELanSpeedSet 10 nvramELanDuplexSet 1
2. Reboot the card.

Several methods are available to check the connections speed and duplex:

- faceplate LEDs
- itgCardShow
- from vxWorks, linkGetOperation 1 or 0

```
> linkGetOperation 0
value = 100 = 0x64 = ‘d‘

NOV 26 08:42:17 tShell: Info T-LAN in Autonegotiation Mode.

NOV 26 08:42:17 tShell: Info T-LAN Operating in 100Mbps, Full-Duplex mode.

-> linkGetOperation 1
value = 10 = 0xa

->

NOV 26 08:42:40 tShell: Info E-LAN Operating in 10Mbps, Half-Duplex mode.
```

New VGMC software or IP Phone firmware testing

To try a new VGMC version or a new IP Phone firmware version on just a few telephones, or to perform testing at the customer site without affecting all users, you can create a new node. You must add another card (or reconfigure an existing card) to the system but assign a new node number that is different from the existing node number. Configure the card as a Leader because each node must have a leader. You can then reconfigure selected IP Phones to register with the new card (that is, change the S1/S2 address and node number on the IP Phones). When the IP Phone reboots, it registers with the new node. All the unmodified IP Phones continue to use the existing node.

When you complete the testing, remove (or reconfigure) the card, and reconfigure the IP Phones to the original settings.

Configure the gateway channels and IP Phones associated with the new node to use separate zones from the original node, if the two nodes are on separate TLANs with no routing capability in between (see Calls to IP Phones in other VGMC nodes with separate TLANs on page 41).

IP Phone commands

This section describes IP Phone commands.

Maintenance telephone

A digital telephone functions as a maintenance telephone when you define the class of service as MTA (maintenance telephone allowed) in the Multi-line Telephone Administration program (LD 11). You can use a maintenance telephone to send commands to the system, but you can use only a subset of the commands you can enter from a system terminal.

To access the system by using the maintenance telephone, enter a SPRE code (defined in the customer data block) followed by 91. Then enter the overlay commands. To enter commands, press the keys that correspond to the letters and numbers of the command (for example, to enter LD 30 return, key in 53#30##). The following overlays are accessible from an internet telephone operating as a maintenance telephone: 30, 32,33, 34 (except for TDS commands), 35, 36, 37, 38, 41, 42, 43, 45, 46 (except for TONE commands), 60, and 61.

VGMC node TN password functionality

Basic craftsperson node-level TN entry password protection exists on the IP Phones to control registration with a virtual line TN on the Call Server.

When the password is configured and enabled, instead of the IP Phone displaying node ID and TN fields, the screen shows the four-digit node ID and a password prompt. After you enter the node ID and password and press OK, if the password passes the Connect Server authentication, a screen appears with the TN field. If you do not enter the node ID and password are not entered, the registration continues after 5 seconds and the TN never appears.

If you enter an invalid node ID password is entered, the node ID and password screen reappears. This screen reappears a maximum of two times, to provide three opportunities to enter the password. After three attempts, registration continues as if no entry occurred at the IP Phone. You can reboot the IP Phone and try again, if necessary.

If you enter a zero length password, then the node ID, TN and password screens do not appear on the IP Phone during registration. This provides maximum security to prevent any entry of a password or TN from the IP Phone.

In addition, you can enter a temporary password. Two parameters for the temporary password determine whether it expires based on the number of uses or after a period of time. The temporary password is automatically deleted after it is used the defined number of times or when the duration expires, whichever occurs first.

When the craftsperson node-level TN entry password protection is enabled, the Set Info submenu of the Telephone Option menu no longer displays the Set TN, node IP, node ID, and IP address of the TPS to which the telephone is registered. You can retreive the TN of the telephone on the CS 1000 through the LD 20 **`PRT DNB`** command and LD 32 **`IDU`**, or LD 80 **`TRAC`**, or **`PDT> rlmShow`**.

When you install a VGMC node, you define no password or temporary password and the password feature is in the disabled state. If you enable the password before you configure the node password, the password protection is enabled with a null password (so the password and TN prompts never appear on the IP Phones).

The password and password protection status is stored in the SECURITY.INI file in the VGMC / C:/CONFIG or the Signaling Server /u/CONFIG directory. This file is created when you enter the **`nodePwdSet`** or **`nodePwdEnable`** commands the first time. The file remains in the directory until you reformat the C: drive or delete the file. To provide redundancy, the SECURITY.INI file exists on every card in the node. Whenever the password or status changes, it is sent to all cards in the node. Each card then updates its SECURITY.INI file with the new information. If the file does not exist, it is created. When a card that is not the Master boots, it retrieves the password and status from the Master. If the SECURITY.INI files does not exist, the card creates it with the information retrieved from the Master. Only the first card that becomes the master by default retrieves the password and status from the SECURITY.INI file.

The temporary password is not saved to the file. It is retained in memory on all cards in the node. If a card reboots, it retrieves the temporary password from the Master. If all cards on the node do not reboot at the same time, the temporary password is retained. However, if all of the cards reboot at the same time, the temporary password is lost; you can then enter a new temporary password, if required.

IP network troubleshooting

This section describes IP network troubleshooting.

General troubleshooting suggestions

Because the IP Phone depends on the IP network to communicate with other IP Phones, problems on the LAN or WAN can cause a variety of voice quality and usage issues. The following are some suggestions to determine if the network is causing problems:

- Make sure the ELAN, TLAN, and node IP addresses are properly configured on the VGMC or Signaling Server. Every card has unique ELAN and TLAN interface IP addresses. The node IP is shared among the cards and is programmed on the TLAN interface of the current Master.

  Note:

  Use separate subnets for the ELAN and TLAN interfaces.

  - ELAN (Embedded LAN): carries maintenance, administration, and alarm data between EM and the VGMC/Signaling Servers. It also carries RUDP/TCP signaling traffic between the Call Server and the VGMC/Signaling Servers. All ELAN addresses for all nodes must be on the same subnet and must be the same as the Call Server CPU subnet.
  - TLAN (Telephony LAN): carries RUDP and RTP packet data between VGMC/ Signaling Server and IP Phones. The TLAN addresses in all devices in a node must be on the same subnet.
  - CLAN (Customer LAN): regular customer LAN for PCs. Protect the VGMC/Signaling Server TLAN from the broadcast traffic that can regularly occur on the CLAN by isolating it to its own VLAN. Turn off Spanning Tree, or configure ports as fast port enable, fast learning.
  - Node IP (on the TLAN subnet): used by IP Phones to register with the node. This address is shared by the devices; it is assigned to the TLAN interface of the current Master.
- Check the configuration of the switch or router ports connected to the VGMC/Signaling Server and IP Phones (see TLAN packet loss errors on page 47).
- Check the faceplate indicators on the SMC cards as follows:

  -

  - SMC:
    - Is either the 100 or 10 LED on for both the ELAN and TLAN (indicating the respective interface is connected to the switch)? Is the speed as you expect given the configuration?
  - Does the ELAN and TLAN A LED flash when Receive (RX) or Transmit (TX) traffic occurs on the respective interface?

  - Does the ELAN and TLAN Link LED flash when traffic occurs on the respective interface?

- Obtain a network diagram of the VGMC/Signaling Server, IP Phones, and all other data devices on the network. Ask the customer how much traffic is on their network. Do router statistics show dropped packets? Try to understand which devices experience problems: all devices or a specific subnet? Do problems occur all the time or intermittently?
- Replacing a VGMC/Signaling Server means a new MAC address (from the new device) is associated with the IP address of the existing device. For some routers, you must ping the router interface from the VGMC/Signaling Server to speed the update of the router ARP table, during which time packets to the VGMC/Signaling Server IP address do not arrive on the new card.
- Try connecting one or more phones and a VGMC/Signaling Server on an isolated LAN to see if the problems persist. For example, using a 10/100BaseT Ethernet crossover cable, connect a single IP Phone to the VGMC/Signaling Server card TLAN interface. If the single telephone works correctly, then a problem likely exists with the LAN. If the problems persist, a card hardware or software problem is likely.
- Run a ping test between the VGMC/Signaling Server or a PC on the same TLAN subnet and one of the phones experiencing a problem. For instance, ping from the VGMC/Signaling Server subnet to an IP Phone once each second for 1 hour. Log the output. Were any packets lost? Was the delay highly variable? These situations indicate that the network may not be suitable for carrying voice traffic.
- Connect a sniffer to the LAN, close to the VGMC/Signaling Server (preferably on a mirrored switch port or a hub) to capture packets going to or from the card. When a problem occurs, stop the sniffer. If the traces and other information, such as the IP address of the devices involved, are provided to support personnel, they can be examined to determine if a network problem exists or if a problem exists with the VGMC/Signaling Server.

  Note:

  Potential privacy concerns can occur with this approach because the RTP packets can be reassembled into audio files (a necessary step when investigating voice QoS problems); you may want to notify users about packet monitoring.

- If, after you run the tests, there appears to be a LAN (rather than VGMC product) problem, ask the customer if they can enable any QoS mechanisms in their network. If the problem appears to be with a VGMC product, escalate the issue following the normal escalation process.

TLAN packet loss errors

The VGMC/Signaling Server software contains detection mechanisms for RTP packet loss. The impact of packet loss varies, but even single lost packets can cause audible clicks, while high packet loss sounds like choppy speech or periods of silence. Packet loss is usually due to a router discarding the RTP packets when the network is busy.

Two types of messages are printed. The first type prints whenever the software detects missing packets in the incoming RTP packet stream. The following example warns that two incoming packets were lost at one time for the call on channel 0. This type of detection is not available with the SMC microengine architecture.

SEP 22 11:05:49 tRTP: Info SML GAP in RTP seqNo chan 0 (recd: 22802, expect: 22800, sending 1001, gap 2, tick 98400)

The second message type prints a summary at the end of a call showing the percentage of packets lost for that call in each direction (indicated in the message as Receive [RX] or Transmit [TX] from the card perspective). This message also generates an SNMP alarm.

In the following examples, the VGMC determined that 6.4 percent of the incoming (received) packets on channel 0 were lost, while the IP Phone reported 6.6 percent of the outgoing packets from the VGMC were lost. The percentage is of the total RTP packets transferred for the call, so depending on the call duration, the percentage of packet loss can have varying degrees of impact. One to two percent is likely to be noticed and usually 5 percent or more indicates choppy speech at some point in the call.

Example: TLAN packet loss is reported for both IP to IP and IP to TDM calls.

```
SEP 22 11:17:48 tRTP: Warning ITG4028 Voice packet loss: 0 6.4% rx 47.147.75.80 (26)
SEP 22 11:17:50 tVTM: Warning ITG4028 Voice packet loss: 0 6.6% tx 47.147.75.81 (26)
```

In this example, the first parameter (0) is the channel number, if the reported packet loss is in Receive (RX) direction. This parameter is always 0, if the reported packet loss is in the Transmit (TX) direction. The second parameter (6.4 percent) indicates the percentage of total RTP packets transferred that were lost. The third parameter (Receive [RX] or Transmit [TX]) is Receive (RX), if VGMC reports packet loss, or tx, if the IP Phone reports packet loss. If reported packet loss is in the Receive (RX) direction, the fourth parameter (47.147.75.80) is the IP address of the VGMC whose gateway channel is used. If reported packet loss is in the ‘tx‘ direction, the fourth parameter is the IP address of the IP Phone that detected packet loss in the incoming stream.

Perform the following tasks:

- Verify the ports of the router/switch the TLAN and IP Phone are connected to are configured as one of the following (in highest to least desirable order):
    - Autonegotiation: this is the recommended setting. The VGMC/Signaling Server TLAN interface and the IP Phone autosense the speed and autonegotiate the half or full duplex setting. Setting the switch or router port to do the same means the fastest possible connection negotiate without intervention.
    - Manual setting: 100BaseT, half duplex
    - Manual setting: 10BaseT, half duplex

Note:

The SMC card TLAN interface supports 10BaseT and 100BaseT half and full duplex, while the ELAN supports only 10BaseT half duplex. The IP Phones support 10BaseT or 100BaseT half duplex and 10BaseT full duplex.

You cannot manually configure a port on the switch or router to 10BaseT or 100BaseT full duplex and have an error-free connection to the IP Phones or VGMC/Signaling Server.

Manual configuration turns off autonegotiation in nearly every product on the market. By definition of the standards, without autonegotiation, the VGMC, Signaling Server and IP Phones revert to half duplex operation. This means the switch or router will be in a full duplex mode while the VGMC device is in a half duplex mode, a situation guaranteed to cause packet loss. If the switch port is set to half duplex and sees lots of late collisions and duplicate collisions or if it is in full duplex mode and sees lots of CRC Errors or runt frames then odds are there is a mismatch.

- Check the router statistics to see the amount of network traffic on each subnet and the number of discarded packets.
- Check for differences in subnet configurations (that is, full versus half duplex or 10BaseT vs 100BaseT) if the problem occurs only for some IP Phones and not others.
- Check which QoS mechanism is enabled on the router to give priority to the packet traffic from the IP Phones.
- To eliminate packet loss messages, configure the switch or router for 10BaseT half duplex operation and check if that eliminates the packet loss messages. If the messages stop, check the wiring and ensure the site has CAT-5 cable.

Port numbers used by VGMC or Signaling Server application and IP Phones

This section describes the port numbers used by the VGMC or Signaling Server application with IP Phones.

UDP ports

The VGMC uses the following UDP ports on the TLAN and ELAN interfaces.

Table 1: VGMC/Signaling Server UDP Ports

Interface	Platform	Port use	Port number	
	VGMC	Signaling Server		
TLAN	x	x	TFTP	69 (used for firmware download to IP Phone 2004)
TLAN	x	x	Sun RPC	111
TLAN	x	x	Syslog	514
TLAN	x	x	Connection Server signaling	4100
TLAN	x	x	VTM signaling	5100
TLAN	x	–	RTP	5200 + chNum*2: SMC: 5200-5262 (5200 is the default base voice port number, is configurable through EM)
TLAN	x	–	RTCP	5200 + chNum*2 +1: SMC: 5201-5263 (indirectly programmable; based on RTP port)
TLAN	x	x	TPS (Node Manager) signaling (with telephones)	7300
TLAN	x	x	TPS signaling (with other cards)	16543
TLAN	x	x	SNTP Server	20000+node id (for example, node 001 has SNTP server port 20001)
ELAN	x	x	BOOTP Server	67 (on Leader card)
ELAN	x	x	SNMP	161
ELAN	x	x	Call Server RUDP signaling	15000
ELAN	x	x	Call Server RUDP Bcast signaling	15001

The following UDP ports are used by the IP Phone on the TLAN interface.

Interface	Port use	Port number
TLAN	signaling	5000

Interface	Port use	Port number
TLAN	Voice	5200 (configurable - same as base voice port number on VGMCs)

Note:

For the voice ports, Cisco routers compress RTP headers only when UDP ports are numbered 16384 and higher. Other vendors also look at UDP port ranges to compress. If a customer requires compressed RTP header information, they may have to change the voice port value in EM.

TCP ports

The VGMC uses the following TCP ports on the TLAN and ELAN interfaces.

Table 2: VGMC/Signaling Server TCP Ports

Interface	Platform		Port use	Port number
	VGMC	Signaling Server		
TLAN	x	x	Sun RPS	111
TLAN	x	Not supported	FTP	21
ELAN	x	Not supported	Telnet	23
ELAN	x	x	Call Server TCP signaling	15000

SNMP traps

You can use the **`itgAlarmTest`** or **`itsAlarmTest`** commands (see itgAlarmTest on page 149 and itsAlarmTest on page 155) to verify that the SNMP traps are configured correctly and that the receiving device is receiving the alarms. This test sends the alarm with none of the issues of a real alarm (for example, unplugging the TLAN to generate the TLAN loss of carrier alarm also unregisters the gateway channels and affects call processing). Remember to configure all VGMC/Signaling Servers in the Alarm Notification application so the SNMP traps appear when they occur.

DSP and voice quality troubleshooting

DIM error codes

The DIM can print an error message that indicates a problem reported by the DSP. These errors can be channel-dependent (for example, a command to a channel failed), or not (for example, a DSP reset that affects multiple channels). The following two messages can appear depending on the VGMC application version running.

```
JAN 02 11:07:47 tMVX_XSPY: Info
0000753618 - DIM: 0:0 -
MGB_DM_ERROR_INDICATION
(Channel-Dependent): Error Code: 2 TCID 0


0035475106 - DIM: 2:0 -
MGB_DM_ERROR_INDICATION (Channel-Dependent): Error Code:
3 TCID 6
```

The message first shows the DSP and channel in the format dsp:channel. It then indicates whether the error is channel-dependent, and then shows an Error Code and, if channel-dependent, the TCID. The error codes are defined as follows:

Error	Description
0	MGB_ERR_INVLD_HW_CONFIG
1	MGB_ERR_INVD_SIG_MSG (invalid message received)
2	MGB_ERR_INVD_MSG_CHST_CLOSED (invalid message for CLOSED state)
3	MGB_ERR_INVD_MSG_CHST_IDLE (invalid message for IDLE state)
4	MGB_ERR_INVD_MSG_CHST_VOICE (invalid message for VOICE state)
5	MGB_ERR_INVD_MSG_CHST_DTMF (invalid message for DTMF state)
6	MGB_ERR_INVD_MSG_CHST_FAX (invalid msgmessage for FAX state)
7	MGB_ERR_INVD_MSG_CHST_TRANSPARENT (invalid message for TRANSPARENT state)
8	MGB_ERR_TONE_ON_IGNORE
9	MGB_ERR_INVLD_TONE_PARAMS
10	MGB_ERR_INVD_CH (invalid channel specified)
11	MGB_ERR_INVD_ECPATH_COEFF_PARAMS (invalid echo canceller parameters received)
12	MGB_ERR_PROCESS_OVERLOAD

General troubleshooting suggestions

Audio problems can be difficult to troubleshoot because often they are affected by user perception. A card that reboots in a certain situation is perceived as a rebooting card; however, a call with slight distortion or echo may be tolerated by some users while considered intolerable by others. The following suggestions can help you with troubleshooting.

Echo

Echo is the most frequently reported audio complaint on the VGMC product. The first task is to isolate the scenario in which echo is the experienced.

Ask the following questions:

- What units are involved in the call (for example, IP Phone, TDM telephone, trunk, or PSTN)?
- Does the echo occur on the handset, the headset, or the speaker?
- If the call is transferred to a digital telephone, does the echo still appear? How frequently among the calls made does the echo happen? At what point in the call does the echo happen? What type of trunks does the site have (assuming echo happens on trunk calls)? If multiple types of trunks exist, does the echo occur on all types or only some?
- Does the echo happen for all users or only some? Do commonalities exist between those users (for example, all speak loudly, or all on same subnet)?
- What happens to the echo when the receiver (far end non-IP Phone) of the call unplugs the handset?
- What kind of telephone is involved at the far end?
- Does the echo occur only on calls originated by the IP Phone user or calls received by the IP Phone user?
- When the echo occurs, what is the end caller's phone type (for example, an analog or a digital telephone)?
- Is the echo occurring on local, internal, long distance, or all calls types?
- What is the effect of turning off the sidetone on the IP Phone?

Echo is typically not reported on IP Phone to IP Phone calls. Experience indicates echo usually occurs for calls though the gateway. One indication that the DSP echo canceller is not working optimally is if the divergence count is high (printed at the end of the call when DimECStat is configured or by the tsm_stat_req_ecdbg command). This typically is 15 or less on calls where the echo canceller locks on the echo.

If the echo occurs only as a short burst at the beginning of the call, this is caused by the DSP echo canceller converging on the echo, a normal function. This process typically takes a couple of seconds. It is usually not annoying enough to report, but may be reported with a more severe symptom.

Second, if the echo is occurs only on trunk calls, determine with a non-IP Phone (for example, a 3904 digital telephone) if the same calls have echo. The echo may be caused by trunking, CO, or long-distance carrier problems. If the problem occurs mainly with long distance calls, make a call using a calling card for a different carrier and see if the problem occurs. Analog trunks can cause a complex echo that the DSP echo canceller has difficulty converging on.

Collecting statistics for echo problems

To collect statistics for echo problems, capture the output of the following commands to a log file (for example, through logged Telnet or HyperTerminal session):

1. Determine the gateway channel being used to make the call that experiences echo:

    - Obtain the IP address and TN of the IP Phone that experiences echo problems (from the IP Phone, use the SERVICES key to retrieve the phone information).
    - Use the TRAK/TRAC commands in LD 80 to determine the physical TN (gateway channel). Alternatively, enter the **`vgwShow`** command (see vgwShow on page 255) on any VGMC in the node and it returns the card and channel the telephone uses.

    After you determine the gateway channel, log on to the associated VGMC and run the **`itgCardShow`** or **`vgwShow`** command. The number printed in the Chan column is the channel number.

2. While the call is in progress, turn the Echo Canceller and DSP statistics on. You must enable the DimDspStat and DimECStat variables to print the output data for the commands in step 3. Exercise caution, because these variables print a block of data at the end of every call for every channel on the VGMC.

    - DimDspStat =
    - DimECStat =
    - dimPrintChannelInfo

3. Run the next set of commands several times during a call experiencing echo. For example, run these commands a few times if the call experiences silence. Then run the commands a few times while the parties talk. Make sure when you log this information, that you document which output corresponds with which scenario. Enter text such as banner <scenario with which the following output is associated>. Because no banner command exists, the data is ignored.

    - tsm_stat_req_ecdbg
    - tsm_stat_req_error
    - tsm_stat_req_rx_tx
    - tsm_stat_req_tele_levels
    - tsm_stat_req_vp_delay
    - dimPrintECC

4. Determine the effects of turning the Echo Canceller and Non Linear Processor On and Off. Use the **`tsm_echo_canceller`** command with the appropriate parameters for the following cases:

    - ECAN: Off, NLP: On

- ECAN: Off, NLP: Off
- ECAN: On, NLP: Off
- ECAN: On, NLP: On

5. When you finish testing, turn off printing of the ECAN and DSP statistics. Otherwise, the syslog is quickly filled with DSP statistics each time a gateway call occurs.

   - DimDspStat =
   - DimECStat =

6. Send collected statistics to Field Support for analysis.

Signal limiter

Echo represents the major impairment in VoIP. Although Avaya Communication Server 1000 has a carrier-grade echo canceller (ECAN) that complies with the G.168 recommendation from the ITU-T, cases still occur where the existing PSTN network involves nonlinear hybrids. In these cases, the ECAN experiences difficulties eliminating echoes generated when the voice signal is at loud levels.

To solve the problem, Avaya CS 1000 uses a signal limiter. The signal limiter (SL) deals intelligently with the voice signal going from CS 1000 system to the PSTN. While preserving the quiet voice signal levels, the signal limiter (SL) adds some attenuation to loud signal levels. Extra attenuation is added when the voice signals become louder.

For versatility, the signal limiter is granular. Several modes of operation exist with only one parameter called SLim. The SLim parameter uses any integer value from 1 to 5. A value of 1 is the most aggressive, while a value of 5 is the least aggressive. A value of 0 means the functionality is disabled, which is the default value when the CS 1000 is installed.

Configure the SLim for each card in the VxWorksShell as follows:

- **`setSLim value`** for setting SLim for all channels of the card
- **`tsm_set_slim tcid,value`** for specific TCID only when the channel is up

In general, the first command is used.

The more aggressive the SLim is, the more nonlinear distortion is in the transmitted signal.

After you receive a complaint about echoing, perform the following steps:

1. Collect the statistics (see Collecting statistics for echo problems on page 54).
2. Eliminate all other sources of echo due to improper configuration. Enable the signal limiter.
3. Determine the loss plan and the codec used.
4. If possible, obtain the average voice level transmitted in T1 or E1 links in the PSTN network or a local network if echo is perceived in local analog telephones.
5. Chose an appropriate SLim value for the signal limiter. To start, assign a value of 5 to SLim (least aggressive) and gradually increase the aggressiveness by assigning the SLim value a smaller number until echo disappears.
6. If echo disappears at an acceptable level with a moderate SLim value that does not significantly degrade voice quality, leave SLim at this value. If echo disappears at a SLim value where the voice quality is unacceptably degraded, find a compromise

between the two sides and set the SLim value accordingly. Adjust the SLim values and watch for echo and voice quality as perceived by the users of the system in hand.

PCM audio capture

If the call uses G.711, use the Data Capture tool on the VGMC to collect a capture of the audio during the problem.

Choppy speech

Choppy speech is usually a side effect of network problems, such as packet loss. Packets are lost or arrive late and the DSP must fill in or drop packets. See TLAN packet loss errors on page 47for more information about debugging this type of problem.

Wavering voice or tones

This problem is typically reported on handsfree calls. Sometimes users report that the receive volume fluctuates during tones. Wavering voice or tones can be caused by an interaction of the telephone speaker and microphone and the handsfree algorithm. To determine the cause, mute the handsfree and press the digits again; the DTMF tones should sound without waver. A similar problem can occur during handsfree conversations when room noise, drafts, or other disturbances cause the handsfree receive volume to fluctuate. Turn down the speaker receive volume to help or eliminate the problem.

IP Softphone 2050 audio quality

Use the following suggestions to troubleshoot audio quality on the Avaya 2050 IP Softphone.

Verifying basic audio operation

To verify the physical connection and proper Windows audio configuration, record an audio message and play it back using the USB headset.

One-way audio

- Check that the handsfree option is programmed for the 2050 IP Softphone on the CS 1000.
- Check if the mute option is turned on. If the mute option is on, the Mute button appears red on the 2050 IP Softphone interface.
- Check the NAT configuration. You receive one-way audio if the NAT configuration causes the 2050 IP Softphone to attempt to connect to an incorrect IP address.

Broken or choppy speech

The Audio Quality slider adjusts the number of buffers between the computer audio device and the 2050 IP Softphone application. Less delay reduces the audio delay but increases the chances of getting broken or absent audio. High quality reduces the chances of broken audio but increases the audio delay.

If you receive choppy or broken speech, try moving the Audio Quality slider toward Higher Quality.

The following are other causes for audio quality issues on the 2050 IP Softphone:

- Other applications that run on your computer, especially CPU-intensive applications or applications that intercept or delay packets (such as firewalls), can cause broken audio.
- Multiple Ethernet interfaces on a single PC may not work well together. For example, the 2050 IP Softphone can exhibit intermittent breaks in audio with notebooks that have a Xircom RealPort Cardbus Ethernet 10/100+Modem 56 PC Card (PCMCIA) inserted when the notebook is docked. In the case of this PC card, the problem relates to a version of the Xircom driver.

  This driver uses CPU cycles even when it is not active, which, in turn, causes IP Phone audio to become choppy. Solutions include upgrading your Xircom driver or removing the PC card when the notebook is docked. To upgrade your Xircom driver, download and install a new PC card driver from the Xircom Web site. You require administrator privileges on Windows 2000; carefully follow the installation instructions provided by Xircom.

  Note:

  Removing the card without performing the Windows unplug or eject hardware procedure can cause the PC to reset.

Audio commands

The following commands can be useful to debug audio-related problems.

- **`tsm_set_rx_gai`** Send a message to a DSP channel to set the Receive (RX) audio gain.
- **`tsm_set_tx_gai`** Send a message to a DSP channel to set the Transmit (TX) audio gain. Displays terminal data for each IP Phone.

The volume of the Receive (RX) and Transmit (TX) paths through the gateway is set through a combination of DSP pad levels and the fixed levels in the IP Phones. VGMC/Signaling Server extends the dynamic loss plan to the M1 system, so all system types use it. The Call Server sends the VGMC pad messages for each call to set the gains through the gateway. Use the commands in this section to examine the values used in this process.

The DSP level is specified as gain, so the in_gain and out_gain values printed by dimPrintChannelInfo are sign reversed from the normal loss values.

The Internet Phones and Avaya 2050 IP Softphone internally set unique gain levels internally to achieve the TIA-810A standard of RLR = +2 and SLR = +8. These values normally remain at the default levels, as these values are used in the loss plan setting for other areas of the system. However, some customers in the United Kingdom expect the louder levels (for example, non-TIA-810A/912 compliant) as offered by their existing digital phones. New CLI commands can be used to manually increase the IP Phone default levels.

- **`lossPlanClr`** Clear changes to the IP Phone default gain settings.
- **`lossPlanPrt`** Display the IP Phone gain settings.
- **`lossPlanSet`** Change the handset, headset, or handsfree gain settings by +/-8 dB.
- **`UKL`** Clear changes to the IP Phone default gain settings.
- **`UKLossPlanSet`** Increase the handset and headset transmit gain settings by 5 dB.
- **`usiGainTableShow`** Display the lookup table used to convert loss plan values in dB to the values the IP Phone uses for the CODEC and DSP control registers.
- **`usiQueryAPB`** Query the IP Phone for the current Audio Parameter Block data for transducer.
- **`usiShow`** Display terminal data for each IP Phone.

VGMC logging commands

Troubleshooting a problem can indicate a software bug that requires debugging. Your support team may ask to enable logging for specific tasks to collect additional information for a problem. You can use the following commands for this purpose:

- **`logConsoleOff`**, **`logConsoleOn`** Disable or enable printing of log messages to the VGMC serial port.
- **`logFileOff`**, **`logFileOn`** Disable or enable writing of log messages to the VGMC SYSLOG.n file.
- **`logPrintOff`**, **`logPrintOn`** Disable or enable printing of log messages on the VGMC to the active login session.
- **`logShow`** Display the current logging status for all tasks and the name of the current log file.
- **`rdxxxx`** commands (Signaling Server only) A set of commands to view the RPT log on the Signaling Server.
- **`syslogLevelSet`** Set the error level at which messages are printed for a task.
- **`syslogShow`** Display the current logging status for all tasks.

On the VGMCs, the SYSLOG function creates four files in the directory C:/LOG. These files are called SYSLOG.0, SYSLOG.1, SYSLOG.2, and SYSLOG.3 and are filled in a round-robin manner. The files are limited to 16 K to limit the logging function to 64 K of the C: drive disk space. The files allocate 16 K of disk space to limit fragmentation and disk corruption problems. Therefore, a file size of 16 K when **`ll`** is run does not necessarily mean the file has 16 K of data.

When a file reaches the 16 K limit, it is closed and the next file is opened. When EM retrieves the log file, a function on the card concatenates the four files in file date order and the resulting file is sent. EM retrieves and displays each file separately.

Voice Gateway trace commands

The following is a summary of the commands used to trace the voice Gateway.

vgwTraceOn <chNum>, <vgw_trace_tool> Initiates the vgwTrace on a specified channel

itgA07TraceOn <chNum> Initiates the tracing on the channel A07 messages

vgwAudioTraceOn <chNum> Initiates the audio message tracing vgwRegistrationTraceOn <chNum> Initiates the tracing of registration messages for a specified channel

usiLibTraceOn "IP_Addr", <LTPS ->Sets filter>,<Sets ->LTPS filter> Initiates the trace of the UNIStim messages

tpsARTrace "type", "trace_id" Initiates the tpsAR protocol trace, which determines where a telephone must register.

RTP and RTCP statistics

Three CLI commands, **`RTPStatShow`**, **`RTPTraceShow`** and **`RTPTraceStop`**, relate to real-time RTCP statistics. Upon issuing the CLI command RTPStatShow or RTPTraceShow to an IP Phone, the RTCP statistics report appears on the Signaling Server TTY port or Telnet session. RTPStatShow requests a snapshot of RTCP statistics versus RTPTraceShow requests RTCP statistics for a certain number of polling periods or until the end of the call. RTPTraceStop stops RTPTraceShow.

Both RTPStatShow and RTPTraceShow request an active IP Phone for RTCP statistics information. The only difference is that RTPStatShow requests a snapshot of RTCP statistics information but, RTPTraceShow periodically requests refreshed RTCP statistics information for a certain amount of time.

Chapter 6: VoIP

OAM shell commands

The commands available from the OAM shell on the Signaling Server are the commands provided by various applications. Type the command **help** to find the commands of various applications. The OAM shell is available upon a successful logon to the Signaling Server, and is represented as oam>.

The following system administration commands are available from the OAM shell.

Table 3: Table 1: OAM shell commands

Command	Parameter	Description
telnet	[IP address or host name]	Telnet to the server specified by IP address or host name.
rlogin	[IP address or host name]	rlogin to the server specified by IP address or host name.
cslogin		Logon to the Call Server overlays
routeShow		Display host and network routing tables.
routeAdd	[destination][gateway]	Add a new route with destination and gateway to the routing tables.
arpShow		Display the system ARP table
arpFlush		Flush all entries in the system ARP table
swVersionShow		Display the software version of the Signaling Server.
date	[] [Day Month Date hh:mm:ss Year]	Display the date with no parameters, and configure date and time with specific parameters.
stty	[port speed]	Change the maintenance port speed. The acceptable

Command	Parameter	Description
		values for the maintenance port speed are 9600, 19200, 38400 and 115200.
ppp	[-l local IP address] [-r remote IP address] [-o options file]	Set up a point-to-point connection from a terminal to the Signaling Server. Options available for debugging purposes are available in VxWorks documentation.
who		Display the number (and who) of users connected to the Signaling Server.

Setting up a PPP connection to the Signaling Server

The following table illustrates a simple configuration to set a PPP connection to the Signaling Server.

Table 4: PPP connection to the Signaling Server

Maintenance port on Signaling Server	Local IP address for Signaling Server	Remote IP address for Terminal
Back panel	137.135.3.1	137.135.3.2
Front panel	137.135.5.1	137.135.5.2

The Signaling Server has two maintenance ports, one on the front face plate and the other back panel. The modem can connect to either maintenance port. The front maintenance port does not display system messages.

Set up the PPP connection from the Terminal by typing the command, ppp in a terminal window. The Signaling Server uses IP addresses assigned by default for this connection. The preceding table provides the default IP addresses that are assigned by the Signaling Server for the PPP session based on the maintenance ports used.

To use specific IP addresses to set up the PPP connection, issue the following command from the terminal window.

```
>ppp -l <Signaling Server-IPaddr> -r <Term-IPaddr>
```

Signaling Server-IPaddr is the IP address assigned to the Signaling Server and Term-IPaddr, the IP address assigned to the Terminal.

Services switchover (OAM shell)

This sections shows all commands that can be used for services switchover.

Command	Description
soHelpMenu	Show commands you can use for services switchover
soCmdStatusShow	Show service switchover commands status

Graceful disable commands

This section contains the graceful disable commands for the IP Line, Virtual Trunk and Gatekeeper applications available from the OAM shell. These commands do not interrupt established calls. Graceful commands determine if available resources exist to reregister virtual trunks or IP Deskphones and cause the virtual trunks and telephones to reregister only when they are idle.

Command	Description
disServices	Cause the Voice Media Gateway Card or Signaling Server to gracefully switch the registered resources to the other Voice Media Gateway Cards or Signaling Servers in the same node.
disVTRK	Cause the Signaling Server to gracefully switch the registered virtual trunks to another Signaling Server in the same node.
disTPS	Cause the Voice Media Gateway Card or Signaling Server to gracefully switch the registered line TPS to the other VGMCs or Signaling Servers in the same node.
disGK	Place the local gatekeeper out of service and the alternative gatekeeper in service.

Force disable commands

This section contains the force disable commands for the IP Line, Virtual Trunk, and Gatekeeper applications available from the OAM shell. The force commands unregisters the virtual trunks and telephones, whether or not there is somewhere for these resources to reregister, which may strand the resources (for example, a telephone may have nowhere to reregister and continuously reboots, or virtual trunks may be disabled so you cannot make trunk calls with them). The force commands also cause active calls to be torn down (a trunk call using a virtual trunk resource is dropped, and a telephone on a call is reset.)

Command	Description
`forcedisServices`	Force all registered resources on the VGMC or Signaling Server to unregister and for gatekeeper to go out of service
`forcedisVTRK`	Force all registered virtual trunks to unregister from the local server
`forcedisTPS`	Force all telephones registered to the local line TPS to unregister
`forcedisGK`	Force the local gatekeeper to go out of service

Enable commands

This section contains the enable commands for the IP Line, Virtual Trunk and Gatekeeper applications available from the OAM shell.

Command	Description
`enlServices`	Cause all Voice Gateway Media Cards or Signaling Servers to accept registrations of resources.
`enlVTRK`	Cause the Signaling Server to accept virtual trunk registrations. The virtual trunks are registered only to the master Signaling Server of the node. If the Signaling Server being enabled becomes the new master, the configured virtual trunks reregister to that Signaling Server.
`enlTPS`	Enable the TPS application and the TPS registration process on the system line TPS. Applies to both the VGMC and the Signaling Server.
`enlGK`	Causes the local gatekeeper to go in service. The local gatekeeper will become active under the following conditions: • It is configured as the Prime gatekeeper. • It is configured as the Alternative gatekeeper, and the Prime gatekeeper is out of service • It is configured as the Fail Safe gatekeeper and both the Prime gatekeeper and the Alternative gatekeeper are out of service.

Command	Description
	The local gatekeeper will go into standby when: • It is configured as the Alternative gatekeeper and the Prime gatekeeper goes back in service (active) • It is configured as the Fail Safe gatekeeper and the Prime gatekeeper or the Alternative gatekeeper goes back in service (active)

Trace and diagnostic commands

H323 Trace Commands

This section contains OAM commands useful for tracing H.323 messaging for active trunk calls.

Command	Description
`H323CallTrace <on or off>`	Trace all incoming and outgoing messages for all channels
`H323CallTrace <on or off(MsgRecv)><on or off (MsgSend)>`	Trace the incoming or outgoing messages for all channels
`H323CallTrace <channel #><on or off (MsgRecv)><on or off (MsgSend)>`	Trace the incoming or outgoing messages for a specific channel
`H323CallTrace <start channel #><end channel #><on or off (MsgRecv)><on or off (MsgSend)>`	Trace the incoming or outgoing messages for a range of channels
`H323Output <1(tty) or 2(rpt)><on or off>`	Direct the H323CallTrace output to the TTY or to the RPT.LOG
`H323TraceShow`	Show the input and output display settings for the H323CallTrace and the H323Output settings.

DCH diagnostic tool

The **DCHmenu** command is available from the OAM shell on the Signaling Server.

Command	Description
DCHmenu	Display a menu of DCH diagnostic tools

Maintenance terminal

You can configure the maintenance terminal port speed. This change is saved to BIOS, so that it survives reboots and power cycles.

Command	Description
stty <speed>	Set port speed on the maintenance ports on the front and back of the Signaling Server. Available speeds are 9600, 19200, 38400 and 11520.

PDT shell commands

On the COTS/Linux Signaling Server platforms, PDT level commands can be run directly from the Linux shell prompts. On other non-Linux components, such as Voice Gateway Media Cards, to enter the PDT shell, type `CTRL+p+d+t`. The Patching facility commands are available from the PDT shell (pdt>). To access the Patching facility commands, type `help Patcher`.

Table 5: Patch commands

Command	Parameter	Description
pload	[patch filename]	Load patch into memory
pins	patch handle	Place a patch in service
poos	patch handle	Remove a patch from service
pout	patch handle	Remove a patch from memory
plis	patch handle	List details of a specific patch
pstat	[patch handle]	List status of all active patches
pnew	patch filename	Create memory patches

If the these commands are run from the vxshell, you receive an error.

The software patch file is downloaded from a workstation to the Signaling Server. The patch files are stored in flash memory. Load the patch file into DRAM memory by using the **pload** command.

In the PDT shell, typing `help system` lists the following commands. Additionally, all OAM Shell commands are available in the PDT shell.

Table 6: PDT system commands

Command	Parameter	Description
devs	–	Show the list of the devices
echo	–	Echo the inputs
hosts	–	Display hosts list
memShow	–	Display memory usage
ti	[taskname or taskid]	Display task information
i	[taskname or taskid]	Display task information
version	–	Display VxWorks version
who	–	Display all active rlogin user ID and ports
x	[functionname]	Execute a function
ifShow	[networkinterfacename][]	Display the attached network interfaces. Display all network interfaces with no parameters.
reboot	[][-1]	Perform a warm restart with no parameters. Perform a cold restart with the value –1.
ls	["path"[,long]]	List the contents of a directory
ll	["path"]	Do a long listing of a directory contents
pwd	–	Print the current default directory
cd	"path"	Change the default directory
remove	"path"	Remove a file
copy	["in"][,"out"]	Copy from input file to output file

Command	Parameter	Description
rename	"old","new"	Rename or move one file to another
moduleShow	–	Show the list of all loaded modules
inetstatShow	–	Display all active connection for the IP sockets
tcpstatShow	–	Display statistics for the TCP protocol
udpstatShow	–	Display statistics for the UDP protocol
syslogShow	–	Display the log level for all tasks
syslogLevelSet	[tid|name level]	Configure the log level for a task, given by task ID, or task name. The level is a number in the range of 0 to 7.

Report log commands

Type `help rdtools` to obtain the commands to display information from the report log file.

The report log files are stored in the directory /u/rpt with file name in the format LOG000nn.RPT, where nn are numbers. The higher the nn number, the more recent the report logs.

If a report log file is corrupted and cannot be read by the Report Display tool, then the file is renamed to LOG000nn.CRPT and saved in the same directory. Such files can be sent to technical support for further analysis.

On COTS/Linux Signaling Server platforms, report log commands are run from the vxShell. On other non-Linux components, such as Voice Gateway Media Cards, they are run from the PDT.

Table 7: Report log file commands

Command	Parameter	Description
rdopen	[filename]	Open a report log file
rdgo	[N]	Go to a specific record, where N is the absolute record number.
rd	[S][R]	Display records. Go S steps and display R records. Both

Command	Parameter	Description
		S and R may be positive or negative.
rds	[S][R]	Display records with symbolic dump. Go S steps and display R records.
rdshow	–	Show general log file information
rdall	–	Display all records, without symbolic dump.
rdtail	[N]	Display N newest records, without symbolic dump.
rdhead	[N]	Display oldest N records, without symbolic dump.
rdnext	–	Open the next log file in the list of generated log files
rdprev	–	Open the previous log file in the list of generated log files

The **rdopen** command issued with no parameters opens the most recent report log file. To open a particular log file, enter the report log file name as the parameter for the rdopen command.

The following example shows output from report log file commands.

```
pdt> rdopen "/u/rpt/LOG00009.RPT"
Reading /u/rpt/LOG00009.RPT

pdt> rdgo 230
[0230] 28/10/02 15:20:00 LOG0006 NPM: npmControlTOSGet: H323 Control Layer3 TOS is:
0x28

pdt> rd 0, 5
[0230] 28/10/02 15:20:00 LOG0006 NPM: npmControlTOSGet: H323 Control Layer3 TOS is:
0x28
[0231] 28/10/02 15:20:00 LOG0004 NPM: npmH323Init: not master, abort
[0232] 28/10/02 15:20:01 LOG0006 tRootTask: Task npmInit initialization succeeded
[0233] 28/10/02 15:20:01 LOG0006 NPM: tNpm task init successful
[0234] 28/10/02 15:20:03 LOG0006 HTTP: SYSLOG initialised   pdt> rds 0, 5
[0235] 28/10/02 15:20:03 LOG0006 HTTP: Memory file system initialised!
[0236] 28/10/02 15:20:03 LOG0006 HTTP: Setup HTTP Aliasing
[0237] 28/10/02 15:20:03 LOG0006 HTTP: Setup HTTP File System
[0238] 28/10/02 15:20:03 LOG0006 HTTP: Setup Server Side Includes
[0239] 28/10/02 15:20:03 LOG0006 HTTP: Load web server config file successful!

pdt> rds 10, 10
[0250] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 7 edd
[0251] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 8 err
[0252] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 9 esn
[0253] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 10 hwr
[0254] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
```

```
file: 11 ini
[0255] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 12 itg
[0256] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 13 npr
[0257] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 14 ovl
[0258] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 15 pri
[0259] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 16 rpt

pdt> rdtail 5
[269] 28/10/02 15:20:04 LOG0006 HTTP: Task httpd initialization succeeded
[268] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 25 tfc
[267] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 24 mph
[266] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 23 misp
[265] 28/10/02 15:20:04 LOG0006 HTTP: Finish loading the Error Look up table index
file: 22 msdl

pdt> rdhead 5
[0000] 28/10/02 14:50:21 LOG0006 tRootTask: alarmInit initialization succeeded
[0001] 28/10/02 14:50:21 LOG0006 tRootTask: ITG5000 Card initialized, all alarms
cleared. (202)
[0002] 28/10/02 14:50:21 LOG0006 tRootTask: shareAnnounce initialization succeeded
[0003] 28/10/02 14:50:21 LOG0006 tRootTask: ELAN IP = 47.11.255.29
[0004] 28/10/02 14:50:21 LOG0006 tRootTask: itgCardInit initialization succeeded

pdt> rdnext
Reading /u/rpt/LOG00002.RPT

pdt> rdprev
Reading /u/rpt/LOG00001.RPT
```

VoIP command reference

The commands and variables in this section are listed alphabetically.

activeDlogShow

Syntax: **`activeDlogShow numOfLine`**

Use this command to show the active log file information for the UFTP IP Telephone firmware download.

This command does not apply to MGC, MC32S, VGMC, or the Signaling Server.

The following table describes the command parameters.

Table 8: Command parameters

Parameter	Value	Description
numOfLine	–	Optional. Specify the number of lines to print. When no argument is passed, the command shows the contents of the entire file.

The following example shows command output.

```
oam> activeDlogShow
Active F/W download file: /u/log/UFTPLOG0.TXT
Space remaining:          55

/u/log/UFTPLOG0.TXT
----------------------------------------
12/29/03 19:58:41 f/w dnld success: (47.11.217.11) I2004
12/29/03 20:24:30 f/w dnld success: (47.11.217.12) I2004
12/29/03 21:42:11 f/w dnld success: (47.11.217.15) I2002
12/29/03 22:17:40 f/w dnld success: (47.11.217.20) I2004
```

arpFlush

Syntax: **`arpFlush`**

Flushes all nonpermanent entries from the card ARP cache.

The following example shows output from the ITG-P card.

```
-> arpShow
LINK LEVEL ARP TABLE
destination      gateway            flags  Refcnt  Use           Interface
--------------------------------------------------------------------------
192.168.1.10     00:00:75:45:38:aa    405    1       1081508       lnIsa0
192.168.1.14     00:60:38:01:09:fa    405    2       1836          lo0
192.168.1.102    00:c0:4f:ae:a8:39    405    1       3             lnIsa0
192.168.1.140    00:60:38:01:a1:46    405    0       6             lo0
192.168.1.141    00:60:38:76:21:af    405    0       201           lnPci1
192.168.1.142    00:60:38:76:21:a9    405    3       136956        lnPci1
--------------------------------------------------------------------------
value = 75 = 0x4b = 'K'
->
-> arpFlush
value = 0 = 0x0
-> arpShow

LINK LEVEL ARP TABLE
destination      gateway            flags  Refcnt  Use           Interface
--------------------------------------------------------------------------
192.168.1.14     00:60:38:01:09:fa    405    2       1936          lo0
192.168.1.140    00:60:38:01:a1:46    405    0       6             lo0
--------------------------------------------------------------------------
value = 75 = 0x4b = 'K'
```

The following example shows output on the SMC card.

```
-> arpShow

LINK LEVEL ARP TABLE
```

```
destination      gateway            flags  Refcnt  Use           Interface
---------------------------------------------------------------------------
47.11.215.1      00:e0:16:78:5b:83    405    1       0             ixpMac0
47.11.215.44     00:03:47:da:cd:5a    405    0       312           ixpMac0
47.11.215.159    00:60:38:bd:20:92    405    1       312           ixpMac0
47.11.216.180    00:00:75:45:1e:d     405    2       2454          ixpMac1
47.11.217.158    00:03:47:da:cd:59    405    1       28            ixpMac1
---------------------------------------------------------------------------
value = 75 = 0x4b = 'K'
-> arpFlush
value = 0 = 0x0
-> arpShow

LINK LEVEL ARP TABLE
destination      gateway            flags  Refcnt  Use           Interface
---------------------------------------------------------------------------
47.11.215.1      00:e0:16:78:5b:83    405    1       0             ixpMac0
---------------------------------------------------------------------------
value = 75 = 0x4b = 'K'
```

The following example shows output on the Signaling Server.

```
-> arpShow

LINK LEVEL ARP TABLE
destination      gateway            flags  Refcnt  Use           Interface
---------------------------------------------------------------------------
47.11.215.1      00:e0:16:78:5b:83    405    1       0             fei1
47.11.215.30     00:60:38:bd:b3:50    405    0       343           fei1
47.11.215.44     00:03:47:da:cd:5a    405    3       1014          lo0
47.11.215.46     00:60:38:76:e9:85    405    0       1241          fei1
47.11.215.47     00:60:38:76:e9:75    405    2       2629          fei1
47.11.215.159    00:60:38:bd:20:92    405    0       361           fei1
47.11.215.161    00:60:38:76:e9:9f    405    1       2706          fei1
47.11.215.163    00:60:38:76:a5:f8    405    0       1030          fei1
47.11.216.1      00:e0:16:78:5b:84    405    0       0             fei0
47.11.216.180    00:00:75:45:1e:d     405    2       59129         fei0
47.11.216.181    00:60:38:8e:29:b9    405    0       31            fei0
47.11.216.246    00:60:38:bd:b3:51    c05    1       39            fei0
---------------------------------------------------------------------------
value = 75 = 0x4b = 'K'
-> arpFlush
value = 0 = 0x0
-> arpShow

LINK LEVEL ARP TABLE
destination      gateway            flags  Refcnt  Use           Interface
---------------------------------------------------------------------------
47.11.215.1      00:e0:16:78:5b:83    405    1       0             fei1
47.11.215.44     00:03:47:da:cd:5a    405    2       1014          lo0
---------------------------------------------------------------------------
value = 75 = 0x4b = 'K'
```

arpShow

Syntax: **arpShow**

Display the current entries in card system ARP table. See arpFlush on page 71 for an example.

auditReboot

Syntax: **auditReboot value**

This command specifies whether the VGMC audit task reboots the card when it detects a suspended task.

The following table describes the command parameters.

Table 9: Command parameters

Parameter	Value	Description
value	0, 1	0 = Do not reboot the card 1 = Reboot the card

The following example shows command output.

```
VGMC>auditReboot 1
Reboot when detect a suspended task --- Enabled value = 8 = 0x8
VGMC> auditReboot 0
Reboot when detect a suspended task --- Disabled value = 9 = 0x9
```

auditShow

Syntax: **auditShow**

Displays the current setting for the action to take upon detection of a suspended task. Enabled means that the VGMC reboots if a suspended task is detected. Disabled means that the VGMC does not reboot. The output also lists the reboot time (in 24-hour format) and lists critical and noncritical tasks.

The following example shows command output.

```
VGMC> auditShow
Reboot when detect a suspended task --- Enabled
Reboot Time      : 2:00
Critical Task    : tTPS tVTM tSET tVTI tUMS tUMC tRDP tVGW tRTP tRTCP tELC
baseMMintTask tA07 tShell tNetTask tExcTask tTelnetd
Non-Critical Task: tLogTask tAioWait tAioIoTask1 tAioIoTask0 tPcmciad tTffsPTask
tPortmapd tRdbTask tFtpdTask tTftpdTask tSnmpd tITGStart tSyslogd tPxTimer tbootpd
tSntpsTask tXA tMAM tMVX_XSPY tMVX_DIM tOMM tRPCMGMT tCSV tTPSAR tfwBk midnightTask
tTelnetOutTask tTelnetInTask tyLstnr tPingTmo0 tPingTx0 tREQ tPingTmo1 tPingTx1
tFtpdServ1 tFtpdServ2 tPingTmo2 tPingTx2 tPingTmo3 tPingTx3 tPingTmo4 tPingTx4
tPingTmo5 tPingTx5 tPingTmo6 tPingTx6 tPingTmo7 tPingTx7 tPingTmo8 tPingTx8
tPingTmo9 tPingTx9 tPingTmo10 tPingTx10 tPingTmo11 tPingTx11 tPingTmo12 tPingTx12
tPingTmo13 tPingTx13 tPingTmo14 tPingTx14 tPingTmo15 tPingTx15 tPingTmo16 tPingTx16
tPingTmo17 tPingTx17 tPingTmo18 tPingTx18 tPingTmo19 tPingTx19 tPingTmo20 tPingTx20
tPingTmo21 tPingTx21 tPingTmo22 tPingTx22 tPingTmo23 tPingTx23 tPingTmo24 tPingTx24
tPingTmo25 tPingTx25 tPingTmo26 tPingTx26 tPingTmo27 tPingTx27 tPingTmo28 tPingTx28
tPingTmo29 tPingTx29 tPingTmo30 tPingTx30 tPingTmo31 tPingTx31 tPingTmo32 tPingTx32
tPingTmo33 tPingTx33 tPingTmo34 tPingTx34 tPingTmo35 tPingTx35 tPingTmo36 tPingTx36
```

```
tpbxResetMain

value = 1083 = 0x43b
VGMC>
```

bootpdDump

Syntax: **`bootpdDump`**

Display the current BOOTP server database.

The following example shows command output.

```
-> bootpdDump
value = 0 = 0x0
->
# main 2.4.3
# (null): dump of bootp server database.
# Dump taken SUN MAY 26 20:43:36 1996
#
# Legend:       (see bootptab.5)
#       first field -- hostname (not indented)
#       bf -- bootfile
#       bs -- bootfile size in 512-octet blocks
#       cs -- cookie servers
#       df -- dump file name
#       dn -- domain name
#       ds -- domain name servers
#       ef -- extension file
#       ex -- exec file (YORK_EX_OPTION)
#       gw -- gateways
#       ha -- hardware address
#       hd -- home directory for bootfiles
#       hn -- host name set for client
#       ht -- hardware type
#       im -- impress servers
#       ip -- host IP address
#       lg -- log servers
#       lp -- LPR servers
#       ms -- message size
#       mw -- min wait (secs)
#       ns -- IEN-116 name servers
#       nt -- NTP servers (RFC 1129)
#       ra -- reply address override
#       rl -- resource location protocol servers
#       rp -- root path
#       sa -- boot server address
#       sm -- subnet mask
#       sw -- swap server
#       tc -- template host (points to similar host entry)
#       td -- TFTP directory
#       to -- time offset (seconds)
#       ts -- time servers
#       vm -- vendor magic number
#       yd -- YP (NIS) domain
#       ys -- YP (NIS) servers
#       Tn -- generic option tag n

1:\
:dn=003 0:\
:gw=192.168.1.1:\
:hn:\
:ht=1:ha="00:60:38:01:09:FA":\
:ip=192.168.1.14:\
:lp=192.168.1.140, 255.255.255.192, 192.168.1.200:\
:sm=255.255.255.192:\
:to=0:\
:ts=192.168.1.149:

2:\
:dn=007 0:\
:gw=192.168.1.1:\
:hn:\
:ht=1:ha="00:60:38:01:19:4F":\
:ip=192.168.1.15:\
:lp=192.168.1.150, 255.255.255.192, 192.168.1.200:\
:sm=255.255.255.192:\
:to=0:\
:ts=192.168.1.149:
.subnet1:\
:gw=192.168.1.1:\
:hn:\
:sm=255.255.255.192:\
:ts=192.168.1.149:

->
```

bootpdReload

Syntax: **`bootpdReload`**

Reload and parse the BOOTP.TAB file.

The following example shows command output.

```
-> bootpdReload
value = 0 = 0x0
->
```

bootPFileGet

Syntax: **`bootPFileGet "srvrIP","uid","pswd","path","filename"`**

This command loads the file from the specified FTP server, renames it as bootp.tab, and writes it to the CONFIG directory. If the card is the Leader, a copy of the existing BOOTP.TAB file called BOOTP.BAK is created first. Also, if the card is the Leader, the new file is transferred using FTP to the other cards in the node.

The path and file name parameters specify the path and file on the FTP server.

The following example shows command output.

```
VGMC> bootPFileGet "192.168.1.15","itgadmin","itgadmin","/C:/","BOOTP.1"
value = 0 = 0x0
Checking card at f01a8c0
```

```
Doing card at f01a8c0

FEB 15 12:45:51 tbootpdSync: Error Cannot set lock for file type 4
FEB 15 12:45:51 tbootpdSync: Notice File transfer starting: /C:/config/bootp.tab  -
> 192.168.1.15:/C:/CONFIG/BOOTP.TAB
FEB 15 12:45:51 tbootpdSync: Notice File transfer completed: /C:/config/bootp.ta b
-> 192.168.1.15:/C:/CONFIG/BOOTP.TABChecking card at 0
```

bootPFilePut

Syntax: **`bootPFilePut "hostIP","uid","pswd","path","fname"`**

This command loads the BOOTP.TAB from the card /CONFIG directory to the specified host. The path and fname parameters specify the directory on the remote host and the name of the file to create.

The following example shows command output.

```
VGMC> bootPFilePut "192.168.1.15","itgadmin","itgadmin","/C:/","BOOTP.1"
value = 0 = 0x0
VGMC>
FEB 15 12:44:22 tfx4: Notice File transfer starting: /C:/config/bootp.tab ->
192.168.1.15:/C://BOOTP.1
FEB 15 12:44:23 tfx4: Notice File transfer completed: /C:/config/bootp.tab ->
192.168.1.15:/C://BOOTP.1
```

cardReset

Syntax: **`cardReset`**

Reboots the VGMC. This command does not apply to the Signaling Server. You can execute this command from the VGMC and VxWorks shells. This is the preferred way to reboot the card because the application can reboot in a controlled manner (for example, the OM file is written and closed before the card reboots).

cd

Syntax: **`cd "dirPath"`**

Change the directory to the path specified by *dirPath*.

The A: drive is the faceplate PC card on the SMC. The C: drive is the internal flash drive on the SMC.

The following table describes the command parameters.

Table 10: Command parameters

Parameter	Value	Description
dirPath	"string"	Directory path to change to. Drive letters must be capitalized. File names can be lowercase and must follow the 8.3 format.

The following example shows command output.

```
-> cd "/C:"
value = 0 = 0x0
-> pwd
/C:
value = 4 = 0x4
->
```

censusShow

Syntax: **censusShow**

Display information about the cards in the node where you enter the command. For each card, the card platform type, TN, TLAN IP address and ELAN IP address appear.

Each card is scheduled to send a connection confirmation to peers once each minute. A TimeOut field indicates the number of times the current card missed a census message from a particular peer. If the timeout reaches 3, the card goes out of service, and the next censusShow does include it.

The censusShow output is in the electShow command output.

The following example shows command output.

```
-> censusShow
AutoAnnounce    : 1
Timer duration  : 60 (Next timeout in 3 sec)
====== all tps ======
Num    Platform     TN         TLAN             ELAN       TimeOut
0      ISP 1100  0000    47.11.215.158    47.11.216.242  0
value = 0 = 0x0

-> censusShow
AutoAnnounce    : 1
Timer duration  : 60 (Next timeout in 55 sec)
====== all tps ======
Num    Platform     TN         TLAN             ELAN       TimeOut
0   ITG Pentium  0410     47.11.215.65     47.11.216.70
0         1        ITG SA  0008    47.11.215.170      47.11.217.5  1
value = 0 = 0x0
```

chkdsk

Syntax: **`chkdsk "dev", repairLevel, entryLenType`**

The chkdsk command identifies corruption on the VGMC C: drive. The command checks the disk and prints a report of the results. While chkdsk runs, other routines and tasks cannot access the partition.

The following table describes the command parameters.

Table 11: Command parameters

Parameter	Value	Description
dev	–	Specify the drive to check. Enter "/C:" when you check the VGMC internal flash disk.
repairLevel	0	Specify the action to take, where 0 = do not write to disk, only report errors found (default value)
entryLenType	0–2	Specify the condition of the disk, where 0 = disk not fully used or average file is more than 16 clusters (recommended) 1= average file is about 4 clusters in size 2 = disk is full, small files about 1 cluster in size on the average

The following example shows command output.

```
-> chkdsk "/C:",0,0
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ver: 2.6 FCS

Disk Check In Progress ...

total disk space (bytes) :                    3,923,968
bytes in each allocation unit :               2,048
total allocation units on disk :              1,916
bad allocation units :                        0
available bytes on disk :                     2,037,760
available clusters on disk :                  995
maximum available contiguous chain (bytes) :  1,935,360
available space fragmentation (%) :           6
clusters allocated :                          921
Done Checking Disk.
value = 0 = 0x0
->
```

clearLeader

Syntax: **`clearLeader`**

Set up the card as a Follower by deleting the ELAN IP address data from the NVRAM, clearing the Leader flag, and setting a flag so the BOOTP request is sent on reboot instead of reading the IP parameters from the NVRAM. This command does not apply to the Signaling Server.

The following example shows command output for the ITG-P (also applicable to SMC).

```
VGMC> clearLeader
This card will be a follower on reboot.
value = 41 = 0x29 = ')'
VGMC> NVRIPShow
IP address : 255.255.255.255
Gateway    : 0.0.0.0
Subnet Mask: 0.0.0.0
Set as Follower.
Using bootp to acquire IP address.
value = 37 = 0x25 = '%'
```

clrUengineStat

Syntax: **`clrUengineStat chNum`**

This command clears the uEngine statistics for the specified channel. This command applies only to the SMC card.

The following table describes the command parameters.

Table 12: Command parameters

Parameter	Value	Description
chNum	0–31	Channel number

```
-> clrUengineStat 8
value = 0 = 0x0
```

configFileGet

Syntax: **`configFileGet "srvrIP","userID","password","path","filename"`**

This command transfers the file from the specified FTP server, copies it to the VGMC or Signaling Server CONFIG directory, backs up the existing config.ini file, renames the new file to CONFIG.INI and parses the codec information.

The

`path`

and

`filename`

parameters specify the path and file on the FTP server.

The following example shows command output.

```
VGMC> configFileGet "192.168.1.10","uid","pswd","c:/u/itgl","config.ini" value = 0 = 0x0
VGMC> FEB 14 15:04:26 tMAM: Info notifyConfigReadDone for 24 channels FEB 14 15:04:26
tMAM: Info Initiate download request for codec 1 FEB 14 15:04:26 tMVX_DIM: Info Download
codec image completed -DSP# 0, Image Id= 0 ....
```

configFilePut

Syntax: **`configFilePut "hostIP","userID","password","path","filename"`**

This command transfers the bootp.tab from the VGMC or Signaling Server CONFIG directory to specified host. The *path* and *filename* parameters specify the directory on the remote host and the name of the file to create.

The following example shows command output.

```
VGMC> configFilePut "192.168.1.15","itgadmin","itgadmin","/C:/","CONFIG.1"
value = 0 = 0x0
VGMC>
FEB 15 12:53:19 tfx5: Notice File transfer starting: /C:/config/config.ini -> 19
2.168.1.15:/C://CONFIG.1
FEB 15 12:53:19 tfx5: Notice File transfer completed: /C:/config/config.ini -> 1
92.168.1.15:/C://CONFIG.1
```

copy

Syntax: **`copy "sourceFilename", "destFilename"`**

Copies a file from the sourceFilename to the destFilename.

If you do not enter the

`destFilename`

parameter, the file is copied to the standard output device (that is, the TTY display), providing an easy way to look at the contents of the text files (config.ini, bootp.tab, syslog.n, and omreport.nnn).

The following example shows command output.

```
-> copy "bootp.tab" #10.1.1.10 #192.168.1.201
#version=ITGIPPHONE .subnet1 :sm=255.255.255.0:gw=192.168.1.102:ts=10.1.1.10:hn:
1:tc=.subnet1:ha="00:60:38:01:19:4f":ip=192.168.1.201:lp=10.1.1.1 255.255.255.0
10.1.1.1:dn=003 0:to=1: value = 0 = 0x0 ->
```

csvShow

Syntax: **csvShow**

Indicates whether the Connect Server is enabled or disabled on the card.

The following example shows command output if the card is the node Master.

```
-> csvShow
Connection Service
==================
Src Port:  10.1.1.7:4100
Node:      1
Terminals: 0

Set csvBlkAddr usiBlkAddr State     Type    IPAddress       Port
--- ---------- ---------- --------- ------- --------------- ----
value = 0 = 0x0
```

The following example shows command output if the card is not the node Master.

```
-> csvShow Connection Service ================== Src Port: 10.1.1.7:4100 Node:
Terminals: 0 CSV is currently disabled value = 26 = 0x1a
```

d

Syntax: **d [adr[,nunits[,width]]]**

Display memory.

The following table describes the command parameters.

Table 13: Command parameters

Parameter	Value	Description
adr	–	Starting address in normal hexadecimal format (0xnnnnnnnn), as a dereferenced variable name (&varName), or as a function name. If omitted or zero, the next block of memory appears, starting where the last **d** command completed.
nunits	–	Specify the number of data words of size *width* to display. Defaults to the previous value if omitted or zero.
width	1, 2, 4, 8	Default to the previous value if omitted or zero. If invalid, 1 is used.

The following example shows command output.

```
-> d 0xf0,16,2
000000f0:  2ada 0020 ef00 002f 2adf 0020 ef00 002f   *.* .../..* .../.*
00000100:  eb44 0020 ee00 03fa 1f88 0020 ee00 03fb   *D. ....... .....*
value = 21 = 0x15
-> d 0xf0,4
000000f0:  2ada 0020 ef00 002f                       *.* .../.........*
value = 21 = 0x15
-> d 0xf0, 4, 1
000000f0:  da 2a 20 00                                       *.* .............*
value = 21 = 0x15
-> d 0xf0,4,4
000000f0:  00202ada 002fef00 00202adf 002fef00   *.* .../..* .../.*
value = 21 = 0x15
-> d 0xf0,4,8
000000f0:  002fef0000202ada 002fef0000202adf   *.* .../..* .../.*
00000100:  03faee000020eb44 03fbee0000201f88   *D. ....... .....*
value = 21 = 0x15
```

devs

Syntax: **devs**

Display all devices on the Signaling Server. The hard drive partitions are /p and /u. The floppy drive is device /f0. The CDROM drive is device /cd0.

The following example shows command output.

```
-> devs drv name
0 /null
1 /dev/rtc
2 /tyCo/0
2 /tyCo/1
3 /aioPipe
7 /bsp
9 nbvws042:
4 /p
10 /vio
```

```
11 /tgtsvr
4 /u
12 /cd0
4 /f0
13 /pty/pty00.S
14 /pty/pty00.M
13 /pty/pty01.S
14 /pty/pty01.M
13 /pty/pty02.S
14 /pty/pty02.M
13 /pty/pty03.S
14 /pty/pty03.M
3 /pipe/bootpd
3 /pipe/srv.6
3 /pipe/rudp
3 /pipe/srv.39
15 /locale
3 /pipe/srv.38
4 /ums
3 /pipe/srv.48
3 /pipe/srv.49
4 /webxml/
value = 25 = 0x19
```

This command gracefully disables the NRS DB.

dumptab

Syntax: **`dumptab`**

Display the contents of the BOOTP server database. The information this command displays matches the contents of the /u/config/bootp.tab file.

The following example shows command output.

```
-> dumptab
# main 2.4.3
# (null): dump of bootp server database.
# Dump taken FRI NOV 29 11:06:26 2002
#
# Legend:       (see bootptab.5)
#       first field -- hostname (not indented)
#       bf -- bootfile
#       bs -- bootfile size in 512-octet blocks
#       cs -- cookie servers
#       df -- dump file name
#       dn -- domain name
#       ds -- domain name servers
#       ef -- extension file
#       ex -- exec file (YORK_EX_OPTION)
#       gw -- gateways
#       ha -- hardware address
#       hd -- home directory for bootfiles
#       hn -- host name set for client
#       ht -- hardware type
#       im -- impress servers
#       ip -- host IP address
#       lg -- log servers
#       lp -- LPR servers
#       ms -- message size
#       mw -- min wait (secs)
#       ns -- IEN-116 name servers
#       nt -- NTP servers (RFC 1129)
#       ra -- reply address override
#       rl -- resource location protocol servers
#       rp -- root path
#       sa -- boot server address
#       sm -- subnet mask
#       sw -- swap server
#       tc -- template host (points to similar host entry)
#       td -- TFTP directory
#       to -- time offset (seconds)
#       ts -- time servers
#       vm -- vendor magic number
#       yd -- YP (NIS) domain
#       ys -- YP (NIS) servers
#       Tn -- generic option tag n

1:\
:dn=4 0 4 0:\
:gw=47.11.254.1:\
:hn:\
:ht=1:ha="00:02:B3:86:2A:A6":\
:ip=47.11.255.13:\
:lp=192.168.2.3, 255.255.0.0, 192.168.2.1:\
:sm=255.255.254.0:\
:to=111:\
:ts=192.168.2.2: 2:\
:dn=12 0 4 0:\
:gw=47.11.254.1:\
:hn:\
:ht=1:ha="00:60:38:8E:2A:F3":\
:ip=47.11.255.17:\
:lp=192.168.2.4, 255.255.0.0, 192.168.2.1:\
:sm=255.255.254.0:\
:to=111:\
:ts=192.168.2.2: 3:\
:dn=16 0 3 0:\
:gw=47.11.254.1:\
:hn:\
:ht=1:ha="00:60:38:BD:B3:01":\
:ip=47.11.255.42:\
:lp=192.168.2.5, 255.255.0.0, 192.168.2.1:\
:sm=255.255.254.0:\
:to=111:\
:ts=192.168.2.2: .subnet1:\
:gw=47.11.254.1:\
:hn:\
:sm=255.255.254.0:\
:ts=192.168.2.2: value = 29 = 0x1d
```

Show the card TPS state, current master, and a list of online TPSs.

```
oam> electShow
Node ID       : 3333
Node Master   : Yes
Up Time       : 2 days, 3 hours, 56 mins, 7 secs
TN            : 000 00 00 00
Host Type     : ISP 1100
TLAN IP Addr  : 47.11.239.235
ELAN IP Addr  : 47.11.254.209
Election Duration       : 15
Wait for Result time    : 35
Master Broadcast period : 30
===== master tps =====
Host Type   TN            TLAN IP Addr
ISP 1100    000 00 00 00  47.11.239.235
Next timeout    : 29 sec AutoAnnounce    : 1
Timer duration  : 60 (Next timeout in 44 sec)
```

```
====== all tps ======
Num  TN            Host Type   ELAN MAC           TLAN IP Addr
ELAN IP Addr     Up Time       NumOfSets  TimeOut
001  000 00 00 00  ISP 1100    00:02:b3:ee:24:7d  47.11.239.235    47.11.254.209
002 03:56:07  0          0
002  008 00 01 00  SMC         00:20:d8:d0:9f:57  47.11.239.232
47.11.254.204    002 03:55:55  0          1 003  004 00 01 00  SMC
00:20:d8:d0:99:cf  47.11.239.231
47.11.254.202    002 03:55:57  0          1 004  008 01 01 00  SMC
00:20:d8:d0:64:30  47.11.239.233
47.11.254.206    002 03:55:33  0          1
====== All cards in node configuration are registered
======
```

Enable the local NRS DB, putting it in service.

```
pdt> enlNRS
pdt> 16/12/04 16:36:12 LOG0006 DB: Switch local primary to active.
```

Force the NRS DB to disable, putting it out of service.

```
pdt> forcedisNRS
pdt> 16/12/04 16:34:14 LOG0006 DB: Switch local Primary NRS to OOS by force disable.
```

dim ver

Syntax: **`dim ver`**

Displays the version of DSP firmware, the DSP type, the supported codecs, and features loaded on each VGMC DSP.

The following example shows command output.

```
MXP>dim ver
DSP 0: version = 7.0.2.3, Voice & Fax, VPBX, C548F/C549F, Codecs 0xffd2, Features
0xEB
DSP 1: version = 7.0.2.3, Voice & Fax, VPBX, C548F/C549F, Codecs 0xffd2, Features
0xEB
DSP 2: version = 7.0.2.3, Voice & Fax, VPBX, C548F/C549F, Codecs 0xffd2, Features
0xEB
DSP 3: version = 7.0.2.3, Voice & Fax, VPBX, C548F/C549F, Codecs 0xffd2, Features
0xEB
DSP 4: version = 7.0.2.3, Voice & Fax, VPBX, C548F/C549F, Codecs 0xffd2, Features
0xEB
DSP 5: version = 7.0.2.3, Voice & Fax, VPBX, C548F/C549F, Codecs 0xffd2, Features
0xEB
DSP 6: version = 7.0.2.3, Voice & Fax, VPBX, C548F/C549F, Codecs 0xffd2, Features
0xEB
DSP 7: version = 7.0.2.3, Voice & Fax, VPBX, C548F/C549F, Codecs 0xffd2, Features
0xEB
MXP>
```

Codecs is a bit field encoded as follows:

PCM_MU 0x8000

PCM_A 0x4000

ADPCM16 0x2000

ADPCM24 0x1000

ADPCM32 0x0800

ADPCM40 0x0400

EADPCM16 0x0200

EADPCM24 0x0100

EADPCM32 0x0080

EADPCM40 0x0040

G729 0x0020

G729AB 0x0010

G723_5_3 0x0008

G723_6_3 0x0004

FAX 0x0002

For the preceding example, the string indicates the DSP supports. Codecs include G.711 A/mu law, ADPCM and EADPCM @ 16,24,32,40 Kbps, G.729AB and FAX. Features include 128 milliseconds ECAN tail, Conference, FAX, T-38 FAX, Caller ID, RTP, and FRF11.

dim cfg

Syntax: **dim cfg**

Displays the configuration for each VGMC DSP.

The following example shows command output.

```
MXP>dim cfg DIM config info: DIM: Num dsps 8, Max chan per dsp 3, Total tcids 24 DIM: Voice
Polled mode, To-tele queue depth 100 DIM 0: Dsp Type C549. Image Id loaded 0x0 DIM 0:
Num channels 3, Num fsx_fsr 4 DIM 0: Clk multVGMCier 4, HPI Vox mapping Fifo DIM 0:
Power mgmt timer period 5000, Wake up interrupt mask 0 DIM 0: HW Companding A-Law,
Serial Port Config 8 Bit DIM 0: Sync Interrupt Enabled, Clock Out Enabled DIM 0: HINT
Disabled DIM 0: BDX Delay Control: NO DIM 0: HW Gain Control: NO ... repeated for each
DSP on card DIM 7: Dsp Type C549. Image Id loaded 0x0 DIM 7: Num channels 3, Num fsx_fsr
4 DIM 7: Clk multVGMCier 4, HPI Vox mapping Fifo DIM 7: Power mgmt timer period 5000,
Wake up interrupt mask 0 DIM 7: HW Companding A-Law, Serial Port Config 8 Bit DIM 7: Sync
Interrupt Enabled, Clock Out Enabled DIM 7: HINT Disabled DIM 7: BDX Delay Control: NO
DIM 7: HW Gain Control: NO MXP>
```

DimDspStat = 1/0

This is a variable. To print the DSP statistics printed by the tsm_stat_req_vp_delay, tsm_stat_req_error and tsm_stat_req_rx_tx commands at the end of any call using a gateway channel, enter DimDspStat = 1. If you enter these commands asynchronously at the VxWorks shell, enter DimDspStat = 1; if you enter DimDspStat = 0, these commands print no output.

When DimDspStat is assigned a value of 1, the DSP statistics print at the end of every gateway channel call. Consider how busy the card is before enabling this, as it prints a block of data every time a call completes until the flag is reset to 0. Be sure to reset the flag to 0 when you finish using the commands that printed DSP data.

This "end of call" mechanism provides a useful way to see if DSP errors occur during calls. No identifying information about the call (other than the TCID and timestamp) are given, so if you need information about a particular call, use vgwShow while the call is active to identify the channel.

Clear this by setting the DimDspStat variable to 0. The default is off; the state is not saved and returns to off if the card is reset or reboots.

The following example shows command output.

```
-> DimDspStat = 1
_DimDspStat = 0x346298: value = 1 = 0x1
->
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, avg_playout_delay    = 59
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, lost_packet_count    = 0
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, replay_packet_count  = 0
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, idle_packet_count    = 14
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, dropped_packet_count = 0
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, rx_packet_count      = 156
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, invalid_header_count    = 0
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, to_micro_overflow_count = 0
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, lost_enh_packet_count   = 0
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, no_core_packet_count    = 0
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, rx_packet_count      = 78
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, tx_packet_count      = 81
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, silence_packet_count = 0
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, min_jitter           = 20
SEP 06 11:39:08 tMVX_DIM: Info TCID 0, max_jitter           = 20
->
```

DimECStat = 1/0

This is a variable. To print the DSP statistics normally printed by the tsm_stat_req_ecdbg command at the end of any call using a gateway channel, enter DimDspStat = 1. This provides a useful way to collect information about the echo canceller performance during a call. No identifying information about the call is given other than the TCID and timestamp, so if information about a particular call is needed, use the vgwShow command while the call is active to identify the channel.

Clear this by setting the DimECStat variable to 0. The default is off; the state is not saved and returns to off if the card is reset or reboots.

When DimECStat is assigned a value of 1, the ECAN statistics prints at the end of every gateway channel call. Consider how busy the card is before you enable this variable, as it prints a block of data every time a call completes until the flag is reset to 0. Be sure to reset the variable to 0 when you are finished using it.

An example of the information output when this command is entered follows.

-> DimECStat=1 _DimECStat = 0x34f27c: value = 1 = 0x1 -> SEP 27 08:28:41 tMVX_DIM: Info TSG: 0 Echo Canceller Debug Stats SEP 27 08:28:41 tMVX_DIM: Info CNV state = 1 SEP 27 08:28:41 tMVX_DIM: Info Px level = 697226 SEP 27 08:28:41 tMVX_DIM: Info Py level = 0 SEP 27 08:28:41 tMVX_DIM: Info Pe level = 340 SEP 27 08:28:41 tMVX_DIM: Info Post update cnt = 836 SEP 27 08:28:41 tMVX_DIM: Info Attempt update cnt = 836 SEP 27 08:28:41 tMVX_DIM: Info Divergence cnt = 0 SEP 27 08:28:41 tMVX_DIM: Info ERLE bypass cnt = 328 SEP 27 08:28:41 tMVX_DIM: Info XTONE count = 6 SEP 27 08:28:41 tMVX_DIM: Info Fore switch cnt = 12 SEP 27 08:28:41 tMVX_DIM: Info Back switch cnt = 10 SEP 27 08:28:41 tMVX_DIM: Info Xidle count = 2825 SEP 27 08:28:41 tMVX_DIM: Info Other bypass cnt = 48

dimPrintChannelInfo

Syntax: **`dimPrintChannelInfo chNum`**

This query displays the data configured for the specified channel. Ensure that the data printed matches the data configured in the EM application for this card.

The following table describes the command parameters.

Table 14: Command parameters

Parameter	Value	Description
chNum	–	Channel number

The following example shows command output.

```
-> dimPrintChannelInfo 3
rx_coding type:   68
tx_coding type:   68
rx vif size:      320
tx vif size:      320
encapsulation: 3
companding:    1
vad enable:    TRUE
vad threshold: -17
vox nom delay: 80
vox max delay: 160
fax rate:      144
fax nom delay: 100
fax pkt size:  30
fax tx level:  -13
fax cd thresh: 2
fax_encap:     7
fax nat:       20
idle noise:    -6500
in gain:       -8
out gain:      0
tx_in_gain:    4
ec tail delay: 128
rtp.SSRC:      AABBCCDD
rx rtp.payload:   18
tx rtp.payload:   18
```

The coding type indicates the codec used; it has the following values:

8 - G.711 A-law 9 - G.711 mu-law 68 - G.729A, G.729AB (the vad enable line item shows which is active) 80 - G.723 5.3K 81 - G.723 6.3K 129 - T38 (fax) 144 - G.711CC (G.711 clear channel - used for fax interworking with BCM)

The vif size indicates the number of bits to pack for each packet. This relates to the packet time and the codec type. The equations are: G.711: vif size = packet time (milliseconds) * 64 G.729: vif size = packet time (milliseconds) * 8 G.723: 192 bits/pkt for 30 milliseconds payload

The DSP gain settings are set by the following items: in gain - Tx (PCM > IP) gain register between ECAN and codec out gain - Rx (IP > PCM) gain register tx_in_gain - Tx (PCM > IP) gain register between PCM and ECAN

dimPrintECC

Syntax: **`dimPrintECC chNum, Filter`**

Prints a DSP channel echo canceller filter coefficients for the foreground or background filters. The filter coefficients are set by the ECAN algorithm to cancel the echo received from the TDM network. Each milliseconds of the ECAN has 8 coefficients (taps), so a 32 milliseconds ECAN tail, for example, has a total of 256 coefficients that you must print to see the full state of the ECAN. The printed data is usually only meaningful to an ECAN DSP engineer; it is typically collected for them. The coefficients are not cleared when the Open Loop detection removes the ECAN from the path; the last values present remain.

This command freezes the ECAN coefficients, requests the correct number of coefficients based on the ECAN tail length (from 256 to 1024 coefficients) and then unfreezes the ECAN. Because a 128 milliseconds ECAN tail length prints 1024 coefficients, 8 coefficients print for each line.

The following table describes the command parameters.

Table 15: Command parameters

Parameter	Value	Description
chNum	0–31	Channel number of the call on the VGMC
filter	–	0 = foreground filter (default) 1 = background filter (if present)

The following example shows command output.

```
-> dimPrintECC 0

TCID 0: Echo Canceller coefficients (data length = 56)
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
.
.
.
[eight coefficients printed per msec of ECAN tail length]
.
.
.
TCID 0: Echo Canceller coefficients (data length = 56)
16      -1       4       0      12       3      -5      -5
-13      -3     -25       7       2       0      25       3
9      -5       7       0      -1      -6      -8       0
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
TCID 0: Echo Canceller coefficients (data length = 16)
0       0       0       0       0       0       0       0
0       0       0       0       0       0       0       0
value = 0 = 0x0
```

dnldFailShow

Syntax: **`dnldFailShow numOfLine`**

Show the download failed status logged in the active or inactive UFTP log file.

The following table describes the command parameters.

Table 16: Command parameters

Parameter	Value	Description
numOfLine	–	Optional. Specify the number of lines to print.

Parameter	Value	Description
		When no argument is passed, the command shows the contents of all failed UFTP download events in the active/inactive UFTP log files.

The following example shows command output.

```
oam> dnldFailShow
Active F/W download file: /u/log/UFTPLOG0.TXT
----------------------------------------
12/29/03 19:58:41 F/W dnld fail: (47.11.217.11) I2004 (F/W not exist)
12/29/03 20:24:30 F/W dnld fail: (47.11.217.12) I2004 (F/W size is 0)
12/29/03 21:42:11 F/W dnld fail: (47.11.217.15) I2002 (RUDP connection down)
12/29/03 22:17:40 F/W dnld fail: (47.11.217.20) I2004 (Response time out)
inactive F/W download file: /u/log/UFTPLOG1.TXT
----------------------------------------
12/28/03 19:58:41 F/W dnld fail: (47.11.217.11) I2004 (RUDP connection down)
12/28/03 20:24:30 F/W dnld fail: (47.11.217.12) I2004 (RUDP connection down)
12/28/03 21:42:11 F/W dnld fail: (47.11.217.15) I2002 (RUDP connection down)
12/28/03 22:17:40 F/W dnld fail: (47.11.217.20) I2004 (Response time out)
```

dosFsConfigShow

Syntax: **dosFsConfigShow**

Display information about the DOS file system on the C: drive. Use the information to determine the remaining free space on the disk.

The following example shows command output.

```
-> dosFsConfigShow

device name:               /p
total number of sectors:   4192902
bytes per sector:          512
media byte:                0xf8
# of sectors per cluster:  64
# of reserved sectors:     1
# of FAT tables:           2
# of sectors per FAT:      256 max
# of root dir entries: 512
# of hidden sectors:       63
removable medium:
false disk change w/out warning: not enabled
auto-sync mode:            not enabled
long file names:           not enabled
exportable file system:    not enabled
lowercase-only filenames:  not enabled
volume mode:              O_RDWR (read/write) available space:          2105966592
bytes
max avail. contig space:   2094465024 bytes
value = 0 = 0x0
->
```

The following example shows command output on the Signaling Server.

```
-> dosFsConfigShow
device name:               /u
```

```
total number of sectors:   4194241
bytes per sector:          512
media byte:                0xf8
# of sectors per cluster:  64
# of reserved sectors:     1
# of FAT tables:           2
# of sectors per FAT:      256 max
# of root dir entries: 512
# of hidden sectors:       4209093
removable medium:          false
disk change w/out warning: not enabled
auto-sync mode:            not enabled
long file names:           not enabled
exportable file system:    not enabled
lowercase-only filenames:  not enabled
volume mode:               O_RDWR (read/write)
available space:           2066087936 bytes
max avail. contig space:   2057109504 bytes
value = 0 = 0x0
```

dsetKMRQShow

Syntax: **`dsetKMRQShow`**

Print the current state of the keymap download to the registered IP Phones.

The following table describes the data parameters printed by this command.

Table 17: Data output

Parameter	Description
RTTavg	Indicates the average measured time for all telephones that received keymaps.
RTTexp	Expected measured time. The default value is 300 milliseconds. This can be reduced, for instance, to achieve better performance on a particular system. For more information, see Keymap download control on page 341. When *RTTavg* is less than *RTTexp*, download performance is better than expected.

The following example shows command output.

```
-> dsetKMRQShow
There are totally 0 requests pending for keymap download process
RTTavg = 112ms
RTTexp = 300ms
value = 30 = 0x1e
```

dsetCadenceTableShow

Syntax: **`dsetCadenceTableShow startingEntry, endingEntry`**

This command displays the Cadence table entries from the Cadence table currently on the card, which is downloaded from the Call Server. The parameters startingEntry and endingEntry specify the range of cadence entries to display, where startingEntry is in the range 0 to 255 and endingEntry is in the range startingEntry to 255.

Use this command to confirm the table was successfully downloaded from the CS 1000 to the card.

The following table describes the data parameters printed by this command.

Table 18: Data output

Parameter	Description
Num	Cadence Table number
End	Tone end, where 0 = Off 1 = On 2 = Repeat
WTON	Tone associated with Cadence. WTON= YES, WTON= NO
Cn	Cycle n, where n is 1,2,3,4,5.
EnOn	Element n ON time, where n is 1,2,3,4,5.
EnOff	Element n OFF time, where n is 1,2,3,4,5.
Tonen	Element n Tone ID, where n is 1,2,3,4,5.

The following example shows the default entries from a typical North American Option 11C system.

```
-> dsetCadenceTableShow 0,40
Num  End  WTON  C1 C2 C3 C4 C5  E1On   E1Off   E2On   E2Off   E3On   E3Off   E4On
E4Off   E5On
E5Off   Tone1  Tone2  Tone3  Tone4  Tone5
0 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0
0 1 2 0 1 0 0 0 0 0x19a 0x320 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0
0 0 0 2 2 0 1 1 0 0 0 0x134 0x4c 0x134 0x4c 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 3 0 0 0 0 0 0 0 0xcd 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 4 2 0 1 1 0 0 0 0x66 0x66 0xcd 0x333 0x0 0x0 0x0
0x0 0x0 0x0 0 0 0 0 0 5 2 0 1 0 0 0 0 0x64 0x64 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 6 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 7 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 8 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 9 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 10 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 11 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 12 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 13 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 14 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 15 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0 0 0 0 0 16 2 0 1 0 0 0 0 0x64 0x64 0x0 0x0 0x0
```

```
0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 17 2 0 1 0 0 0 0 0x32 0x32 0x0 0x0
0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 18 2 0 1 0 0 0 0 0xa 0xa 0x0 0x0
0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 19 2 0 1 0 0 0 0 0x28 0x3c 0x0
0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 20 0 0 0 0 0 0 0 0xf 0x0 0x0
0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 21 0 0 0 0 0 0 0 0x14 0x0
0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 22 0 0 0 0 0 0 0 0x14
0x14 0x14 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 23 0 0 0 0 0 0 0
0x3c 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 24 0 1 0 0 0 0
0 0x14 0x0 0x14 0x0 0x14 0x0 0x0 0x0 0x0 0x0 6 3 6 0 0 25 0 0 0 0
0 0 0 0xc8 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 26 0 0 0
0 0 0 0 0x32 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 27 0 0
0 0 0 0 0 0x190 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0 28
0 0 0 0 0 0 0 0x7d 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0 0 0
29 2 0 1 0 0 0 0 0x14a 0x46 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0 0 0
0 0 30 2 0 1 0 0 0 0 0x64 0x32 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0
0 0 0 0 31 2 0 1 0 0 0 0 0x19a 0x320 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 32 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 33 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 34 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 35 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 36 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 37 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 38 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 39 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 40 0 0 0 0 0 0 0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
0x0 0 0 0 0 0 value = 142 = 0x8e
```

dsetShow

Syntax: **`dsetShow [debugLevel]`**

Shows every IP Phone registered with the TPS, with information different from the isetShow command.

The parameter *debugLevel* controls which information prints. If you do not enter a value for this parameter, the command prints only the telephone TN (in hexadecimal format), public signaling IP address, private signaling IP address, hardware ID, and terminal type. This can be useful when you need to look up the TN of a telephone for the ssdTrace 0 command. However, if *debugLevel* = 4 or more, additional information prints that you can use to debug the problem.

The MAC address of the telephone is separated from the other Hardware ID information by dashes. The private signaling IP address prints when the telephone is detected as behind a NAT device.

The following example shows command output.

```
-> dsetShow
TN    IP Address    Private IP Addr      Hardware ID      TermType
---- --------------- --------------- -------------------- ----------
6044 47.11.215.183                   18-000ae402e283-6602 i2001
6004 47.11.179.168                   18-006038b689e9-6600 i2004
6005 47.11.179.167   192.168.0.233   18-0060387602b9-6600 i2004

-> dsetShow 4
TN    IP Address    Private IP Addr     Hardware ID       TermType   Emulator
Terminal   SessCall   SessApp
```

```
---- --------------- --------------- -------------------- ---------- ----------
---------- ---------- ----------
6004 47.11.217.239                   18-006038b689e9-6600 i2004      0x0229b5b4
0x0229d4e0 0x0229d1b0 0x0229af74
6044 47.11.215.183                   18-000ae402e283-6602 i2001      0x0227de94
0x02288888 0x0227f284 0x0227f218
6005 47.11.217.241   192.168.1.112   18-0060387602b9-6600 i2004      0x0228d008
0x02294d9c 0x02294e30 0x0229dc54
value = 0 = 0x0
```

dsetToneTableShow

Syntax: **`dsetToneTableShow startingEntry, endingEntry`**

Display the entries from the Tone table on the card, which is downloaded from the Call Server.

The following table describes the command parameters.

Table 19: Command parameters

Parameter	Value	Description
startingEntry	0–255	Specify the range of tone entries to display.
endingEntry	*startingEntry*–255	Specify the range of tone entries to display.

Use this command to confirm the table was successfully downloaded from the CS 1000 to the card.

The following table describes the data parameters printed by this command.

Table 20: Data output

Parameter	Description
Num	Tone Table Number
Freq n	Tone n frequency, where n is 1,2,3,4,5.
dbn	Tone n volume, where n is 1,2,3,4,5.

The following example shows the default entries (that is, not modified through LD 56) from a typical North American CS 1000 Option 11C system.

```
-> dsetToneTableShow 0,111
Num Freq 1 db1 Freq 2 db2 Freq 3 db3 Freq 4 db4 || Num Freq 1
db1 Freq 2 db2 Freq 3 db3 Freq 4 db4
0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 1 0x15e 0x17 0x1b8 0x17
0x0 0x0 0x0 0x0
2 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 3 0x1b8 0x17 0x0 0x0 0x0
0x0 0x0 0x0
4 0x15e 0x13 0x1b8 0x13 0x0 0x0 0x0 0x0 || 5 0x1b8 0x19 0x1e0
0x19 0x0 0x0 0x0 0x0
6 0x1e0 0x17 0x0 0x0 0x0 0x0 0x0 0x0 || 7 0x1e0 0x1e 0x26c
0x1e 0x0 0x0 0x0 0x0
```

```
8 0x3fc 0x10 0x0 0x0 0x0 0x0 0x0 0x0 || 9 0x258 0x17 0x0 0x0
0x0 0x0 0x0 0x0
10 0x258 0x10 0x0 0x0 0x0 0x0 0x0 || 11 0x1b8 0x16 0x1e0
0x16 0x0 0x0 0x0 0x0
12 0x15e 0x17 0x1e0 0x17 0x0 0x0 0x0 0x0 || 13 0x1b8 0x18
0x26c 0x18 0x0 0x0 0x0 0x0
14 0x3ac 0xc 0x65e 0xa 0x0 0x0 0x0 0x0 || 15 0x2bc 0xc 0x4ba
0xa 0x0 0x0 0x0 0x0
16 0x2bc 0xc 0x53c 0xa 0x0 0x0 0x0 0x0 || 17 0x2bc 0xc 0x5c8
0xa 0x0 0x0 0x0 0x0
18 0x302 0xc 0x4ba 0xa 0x0 0x0 0x0 0x0 || 19 0x302 0xc 0x53c
0xa 0x0 0x0 0x0 0x0
20 0x302 0xc 0x5c8 0xa 0x0 0x0 0x0 0x0 || 21 0x352 0xc 0x4ba
0xa 0x0 0x0 0x0 0x0
22 0x352 0xc 0x53c 0xa 0x0 0x0 0x0 0x0 || 23 0x352 0xc 0x5c8
0xa 0x0 0x0 0x0 0x0
24 0x3ac 0xc 0x53c 0xa 0x0 0x0 0x0 0x0 || 25 0x3ac 0xc 0x4ba
0xa 0x0 0x0 0x0 0x0
26 0x3ac 0xc 0x5c8 0xa 0x0 0x0 0x0 0x0 || 27 0x2bc 0xc 0x65e
0xa 0x0 0x0 0x0 0x0
28 0x302 0xc 0x65e 0xa 0x0 0x0 0x0 0x0 || 29 0x352 0xc 0x65e
0xa 0x0 0x0 0x0 0x0
30 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 31 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0
32 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 33 0x190 0x13 0x0 0x0 0x0
0x0 0x0 0x0
34 0x17c 0x1b 0x190 0x13 0x2a 0x1b 0x0 0x0 || 35 0x0 0x0 0x0
0x0 0x0 0x0 0x0 0x0
36 0x2bc 0x11 0x4ba 0xf 0x0 0x0 0x0 0x0 || 37 0x2bc 0x11 0x53c
0xf 0x0 0x0 0x0 0x0
38 0x2bc 0x11 0x5c8 0xf 0x0 0x0 0x0 0x0 || 39 0x302 0x11 0x4ba
0xf 0x0 0x0 0x0 0x0
40 0x302 0x11 0x53c 0xf 0x0 0x0 0x0 0x0 || 41 0x302 0x11 0x5c8
0xf 0x0 0x0 0x0 0x0
42 0x352 0x11 0x4ba 0xf 0x0 0x0 0x0 0x0 || 43 0x352 0x11 0x53c
0xf 0x0 0x0 0x0 0x0
44 0x352 0x11 0x5c8 0xf 0x0 0x0 0x0 0x0 || 45 0x3ac 0x11 0x53c
0xf 0x0 0x0 0x0 0x0
46 0x3ac 0x11 0x4ba 0xf 0x0 0x0 0x0 0x0 || 47 0x3ac 0x11 0x5c8
0xf 0x0 0x0 0x0 0x0
48 0x2bc 0x11 0x65e 0xf 0x0 0x0 0x0 0x0 || 49 0x302 0x11 0x65e
0xf 0x0 0x0 0x0 0x0
50 0x352 0x11 0x65e 0xf 0x0 0x0 0x0 0x0 || 51 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0
52 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 53 0x514 0xd 0x5dc 0xd
0x0 0x0 0x0 0x0
54 0x2bc 0xd 0x384 0xd 0x0 0x0 0x0 0x0 || 55 0x2bc 0xd 0x44c
0xd 0x0 0x0 0x0 0x0
56 0x384 0xd 0x44c 0xd 0x0 0x0 0x0 0x0 || 57 0x2bc 0xd 0x514
0xd 0x0 0x0 0x0 0x0
58 0x384 0xd 0x514 0xd 0x0 0x0 0x0 0x0 || 59 0x44c 0xd 0x514
0xd 0x0 0x0 0x0 0x0
60 0x2bc 0xd 0x5dc 0xd 0x0 0x0 0x0 0x0 || 61 0x384 0xd 0x5dc
0xd 0x0 0x0 0x0 0x0
62 0x44c 0xd 0x5dc 0xd 0x0 0x0 0x0 0x0 || 63 0x2bc 0xd 0x6a4
0xd 0x0 0x0 0x0 0x0
64 0x384 0xd 0x6a4 0xd 0x0 0x0 0x0 0x0 || 65 0x44c 0xd 0x6a4
0xd 0x0 0x0 0x0 0x0
66 0x514 0xd 0x6a4 0xd 0x0 0x0 0x0 0x0 || 67 0x5dc 0xd 0x6a4
0xd 0x0 0x0 0x0 0x0
68 0x190 0xb 0x0 0x0 0x0 0x0 0x0 0x0 || 69 0x190 0xe 0x0 0x0
0x0 0x0 0x0 0x0
70 0x190 0xe 0x0 0x0 0x0 0x0 0x64 0x0 || 71 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0
72 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 73 0x15e 0xf 0x1b8 0xf
0x0 0x0 0x0 0x0
74 0x1e0 0xf 0x26c 0xf 0x0 0x0 0x0 0x0 || 75 0x1b8 0xf 0x1e0
0xf 0x0 0x0 0x0 0x0
76 0x190 0x19 0x0 0x0 0x0 0x0 0x0 0x0 || 77 0x190 0xe 0x1c2
```

```
0xe 0x0 0x0 0x0 0x0
78 0x1e0 0x13 0x26c 0x13 0x0 0x0 0x0 0x0 || 79 0x1b8 0x13
0x1e0 0x13 0x0 0x0 0x0 0x0
80 0x1e0 0x13 0x0 0x0 0x0 0x0 0x0 0x0 || 81 0x1a4 0x9 0x0 0x0
0x0 0x0 0x0 0x0
82 0x1b8 0x1d 0x0 0x0 0x0 0x0 0x0 0x0 || 83 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0
84 0x15e 0x11 0x1b8 0x11 0x0 0x0 0x0 0x0 || 85 0x190 0x11
0x1c2 0x11 0x0 0x0 0x0 0x0
86 0x190 0x11 0x0 0x0 0x0 0x0 0x0 0x0 || 87 0x578 0x1a 0x0 0x0
0x0 0x0 0x0 0x0
88 0x3b6 0xc 0x0 0x0 0x0 0x0 0x0 0x0 || 89 0x578 0xc 0x0 0x0
0x0 0x0 0x0 0x0
90 0x708 0xc 0x0 0x0 0x0 0x0 0x0 0x0 || 91 0x1d6 0x0 0x0 0x0
0x0 0x0 0x0 0x0
92 0x3ac 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 93 0x514 0x0 0x0 0x0
0x0 0x0 0x0 0x0
94 0x5dc 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 95 0x758 0x0 0x0 0x0
0x0 0x0 0x0 0x0
96 0x15e 0xa 0x1b8 0xa 0x0 0x0 0x0 0x0 || 97 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0
98 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 99 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0
100 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 101 0x258 0x13 0x0 0x0
0x0 0x0 0x0 0x0
102 0x320 0x13 0x0 0x0 0x0 0x0 0x0 0x0 || 103 0x578 0x17 0x0
0x0 0x0 0x0 0x0 0x0
104 0x334 0x7 0x0 0x0 0x0 0x0 0x0 0x0 || 105 0x0 0x0 0x0 0x0
0x0 0x0 0x0 0x0
106 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 107 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0
108 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 109 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0
110 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 || 111 0x0 0x0 0x0 0x0 0x0
0x0 0x0 0x0
value = 60 = 0x3c = ’<’
->
```

DsetSideToneEnable = 1/0

By default, this variable is 1. To turn off sidetone (that is, hearing your own voice in the handset or headset) on all calls made by IP Phones registered with that TPS , enter DsetSideToneEnable = 0. The variable is reset to 1 upon card reboot.

The following example shows command output.

```
-> DsetSideToneEnable = 1
_DsetSideToneEnable = 0x37b558: value = 1 = 0x1
```

dsetVosboShow

Syntax: **dsetVosboShow emulatorAddress**

Print the Virtual Office and Branch Office feature related DSET status information for a particular IP Phone.

The following table describes the command parameters.

Table 21: Command parameters

Parameter	Value	Description
emulatorAddress	–	Emulator address of the IP Phone. You can retrieve this IP address by entering **dsetShow 4** at the vxWorksShell prompt.

The following example shows command output.

```
-> dsetShow 4
TN    IP Address      Hardware ID      TermType    Emulator   Terminal   SessCall
SessApp
---- --------------- ----------------- ---------- ---------- ----------
----------  --------
6005 10.1.1.10       1800603876c79d6600 i2004      0x09e4a240 0x09e4c4a0 0x09e4af38
0x09e4d1a8
0000 10.1.1.13       180060387638e06600 i2004      0x09d26a08 0x09e49ee8 0x09d2742c
0x09e49058
6006 10.1.1.12       18000638dd06116600 i2002      0x09d21894 0x09d23a64 0x09d22534
0x09d246e0
value = 0 = 0x0

-> dsetVosboShow 0x09e4a240
sVOBUSupported=1
reg type=[Virtual]
VOSBO Status:      Login
User ID:           2041
Password:          1234
NPI / TON:         0 / 0
Home TPS IP:       10.1.1.6
Remote TPS IP:     0.0.0.0
Main TPS IP:       0.0.0.0
DSET VOSBO Status: None
DSET Error Rate:   0
DSET voHostTermType:   2
DSET voHostHwid:       180060387638e06600
DSET BUID:              MOTN
TN:               0x6004
MOTN TYPE:             0x2
UserDisplayFlag:       1
voUserInvalidIDReason: 0
i = 0:   Virtual Office Login  --- pdset->hAppControl[i] = 0x9e4cbc8
the flag isNotPhoneOption is 0:
i = 1:   Virtual Office Logout  --- pdset->hAppControl[i] = 0x9e4cb74
the flag isNotPhoneOption is 0:
i = 2:   Branch User Config  --- pdset->hAppControl[i] = 0x9e4cb20
the flag isNotPhoneOption is 0:
i = 3:   Resume Normal Mode  --- pdset->hAppControl[i] = 0x9e4cacc
the flag isNotPhoneOption is 0:
i = 4:   Test Local Mode  --- pdset->hAppControl[i] = 0x9e4ca78                 the
flag isNotPhoneOption is 0:
Text Editor  --- pdset->hAppControl[5] = 0x0
Message Box  --- pdset->hAppControl[6] = 0x0
value = 0 = 0x0
->
```

DSPReset

Syntax: **`DSPReset DSP`**

Reset the specified DSP. This command applies only to the VGMCs. All associated channels are closed. The codec image is then downloaded to the DSP and the channels are reregistered with the Call Server. An active call on any channel of the DSP is released.

The following example shows command output.

```
value = 0 = 0x0
VGMC> DSPReset 0
MAR 13 19:56:46 MAM: Info Reset DSP 0tMVX_SPY: Info 0152178642 - DIM: 0:*, DSP
BUSY -- No status response Message

tMVX_SPY: Info 0152178642 - DIM: 0:*, BRINGING DSP DOWN !!

MAR 13 19:56:48 tMVX_DIM: Error ITG2034 DSP channel unexepectedly closed: 0 (44)
MAR 13 19:56:48 tMVX_DIM: Error ITG2034 DSP channel unexepectedly closed: 1 (44)
MAR 13 19:56:48 tMVX_DIM: Error ITG2034 DSP channel unexepectedly closed: 2 (44)
MAR 13 19:56:48 tMVX_DIM: Error ITG2025 DSP download: failed - Retry 0 (202)
MAR 13 19:56:48 VGW: Error channel 0, unexpectedly closed (reason -2)
MAR 13 19:56:48 VGW: Info VGW offline announce channel 0
MAR 13 19:56:48 tMVX_DIM: Info Download codec image completed -DSP# 0, Image Id = 0
MAR 13 19:56:48 VGW: Error channel 1, unexpectedly closed (reason -2)
MAR 13 19:56:48 VGW: Info VGW offline announce channel 1
MAR 13 19:56:49 VGW: Error channel 2, unexpectedly closed (reason -2)
MAR 13 19:56:49 VGW: Info VGW offline announce channel 2 MAR 13 19:56:49 VGW: Info
Registering channels 0 to 2
MAR 13 19:56:49 VGW: Info Channel 0, already registered with CS (?)
MAR 13 19:56:49 VGW: Info Channel 1, already registered with CS (?)
MAR 13 19:56:49 VGW: Info Channel 2, already registered with CS (?)
```

e2dsetShow emulatorAddress

Syntax: **`e2dsetShow emulatorAddress`**

Print information regarding the states and current display of an IP Phone. It is useful if you have no physical access to the IP Phone but want to see the displayed information.

The first block of information displays Set Based Installation (SBI) related data. This command can also be useful when you work on an IP Phone installation problem.

When a call is active on the telephone, the callProcState becomes x11cpsActive, and the e2AudioStreamState becomes RxTxOpen. Also, the e2Lamp value for the DN with the active call changes from 0 to 1.

The following table describes the command parameters.

Table 22: Command parameters

Parameter	Value	Description
emulatorAddress	–	Emulator address of the IP Phone. To retrieve this IP address, enter **`dsetShow 4`** at the vxWorksShell prompt.

Note:

Improper use of this command (that is, passing an incorrect IP address) can cause an exception. Ensure that you enter the correct emulator address before you press Enter.

The following example shows command output.

```
-> dsetShow 4
TN    IP Address      Hardware ID      TermType  Emulator   Terminal   Session
---- --------------- ------------------ -------- ---------- ---------- ----------
6005 10.1.1.5        180060387641f36600 i2002    0x013db124 0x01a96cd8 0x01a961d8
6004 10.1.1.4        180060387641c16600 i2004    0x013d8f58 0x01a95fa8 0x0185d10c
6007 10.1.1.6        180060387606586600 i2050    0x013d4e5c 0x013d72cc 0x013d6634
value = 0 = 0x0
->
-> e2dsetShow 0x013d8f58
=== SBI Data ===
isSBIset 0
isSBIhandfreeKeyOn 0
isSBIheadSetKeyO 0
isSBIsetGoOffHook 0
=== states ===
isRegistered 1
e2State e2StateIdle, localState e2LocalStateNone, callProcState x11cpsIdle,
cpndState cpndIdle, e2AudioStreamState RxTxClose
ActiveDNKey 255
=== display overlays ===
overlayState 0
line1 <>
line2 <>
line3 <>
=== display lines ===
displayState 0
line1 <>
line2 <>
line3 <>
current cursor: [0, 4]
editBuffer <>
=== soft keys ===
key counts = 11, current page = 0
Text m1Key e2Key m1Lamp e2Lamp || Text m1Key e2Key m1Lamp
e2Lamp || Text m1Key e2Key m1Lamp e2Lamp || Text m1Key e2Key
m1Lamp e2Lamp ||
<Trans> 17 0 0 0 ||<Conf> 18 1 0 0 ||<Forward> 19 2 0 0
||<More...> 0 3 15 1 ||
<RingAgn> 20 4 0 0 ||< Park> 21 5 0 0 ||<Pickup> 22 6 0 0
||<More...>7 15 1 ||
<PrivRls> 24 8 0 0 ||<Charge> 25 9 0 0 ||<CParty> 26 10 0 0
||<More...>0 11 15 1 ||
< > 0 12 15 1 || < > 0 13 15 1 || < > < > 0 14 15 1 | < > 0 15 15 1 ||
=== feature keys ===
current page 0
Text m1Key e2Key m1Lamp e2Lamp || Text m1Key e2Key m1Lamp
e2Lamp || Text m1Key e2Key m1Lamp e2Lamp || Text m1Key e2Key
m1Lamp e2Lamp || Text m1Key e2Key m1Lamp e2Lamp || Text
m1Key e2Key m1Lamp e2Lamp ||
< 1111> 0 35 15 1 || < > 1 36 0 0 || < > 2 37 0 0 || < > 3 38 0 0 ||
< > 4 39 0 0 || < > 5 40 0 0 || < > 2 35 0 0 ||< > 3 36 0 0 || < > 4
37 0 0 || < > 5 38 0 0 || < > 6 39 0 0 ||7 40 0 0 ||
=== local soft keys ===
0 = <>  1 = <>  2 = <>  3 = <>
value = 1 = 0x1
->
```

echoServerShow

Syntax: **`echoServerShow action`**

Print configuration information about the ESs and information from a particular LTPS on the phone interactions with the ESs. Use this command on an LTPS card to investigate a problem with a telephone registered to that LTPS card, or to uncover patterns of communication problems between phones and ESs.

The following table describes the command parameters.

Table 23: Command parameters

Parameter	Value	Description
action	99	Optional. When you enter echoServerShow 99, the counter values are reset after they are displayed. When you enter only echoServerShow, the counter values are displayed without being reset.

The following table describes the data parameters output by this command and how to interpret them.

Table 24: Data output

Parameter	Description
Configured	The IP address and port configured for this ES in LD 117.
Actual	IP address and port for this ES, followed by an explanation in parenthesis. This differs from the Configured parameter if the default address (0.0.0.0) is configured. The explanation in parenthesis is one of the following: • (TLAN IP, this card) = IP address used is the TLAN port of this card; the ES is active on this card. • (node IP, this card) = IP address used is the node IP; ES is active on this card because it is the node master.

Parameter	Description
	• (node IP, other card) = IP address used is the node IP, but some other card is currently the node master; ES is not active on this card. • (not this card) = IP address is neither this card TLAN IP or the node IP address; ES is not active on this card.
LTPS request sent	Number of Resolve Port Mapping Request messages sent from the LTPS to IP Phones with this ES identified as the one to contact.
Failed resp rec'd	Number of Resolve Port Mapping Ack messages received from IP Phones having the public IP address and port set to 0.0.0.0:0000. Each increment of this counter indicates a telephone never received the Discover Port Mapping Ack response from the ES (that is, all 10 attempts failed).

The following example shows command output.

```
->echoServerShow
Echo Server 1
------------------------------------------------
Configured:             0.0.0.0:10000
Actual:            47.11.212.54:10000 (TLAN IP, this card)
LTPS request sent: 112665
Failed resp rec'd: 0

Echo Server 2
------------------------------------------------
Configured:             0.0.0.0:10000
Actual:            47.11.212.60:10000 (node IP, other card)
LTPS request sent: 82201
Failed resp rec'd: 0
NAT Timeout: 30 seconds
```

When you enter the reset parameter, the counter values are displayed but then reset to 0 for the next time you enter the command.

```
->echoServerShow 99
Echo Server 1
------------------------------------------------
Configured:             0.0.0.0:10000
Actual:            47.11.212.54:10000 (TLAN IP, this card)
LTPS request sent: 81563
Failed resp rec'd: 40

Echo Server 2
------------------------------------------------
Configured:             0.0.0.0:10000
Actual:            47.11.212.60:10000 (node IP, other card)
LTPS request sent: 50199
Failed resp rec'd: 4
NAT Timeout: 30 seconds
Counters reset

->echoServerShow
Echo Server 1
------------------------------------------------
Configured:             0.0.0.0:10000
Actual:            47.11.212.54:10000 (TLAN IP, this card)
LTPS request sent: 0
Failed resp rec'd: 0

Echo Server 2
------------------------------------------------
```

```
Configured:             0.0.0.0:10000
Actual:            47.11.212.60:10000 (node IP, other card)
LTPS request sent: 0
Failed resp rec'd: 0
NAT Timeout: 30 seconds
```

electShow

Syntax: **`electShow`**

Print details about the node mastership election. This command displays the information from the censusShow command, plus additional information about the node Mastership election.

The output first displays information about the card the command was run on. This is followed by a list of cards in the node. For each card, the card platform type, TN, TLAN IP address, and ELAN IP address print.

Each card is scheduled to send a connection confirmation message to peers once each minute. A TimeOut field indicates the number of times the current card missed a census message from a particular peer. If the timeout reaches 3, the card is considered to be out of service, and the next censusShow does not include it.

The following example shows command output for the node Master card.

```
-> electShow

Node ID       : 3918
Is master     : 1
Up Time(sec)  : 169634
TN            : 0000                                      Platform      : ISP 1100
IP TLAN       : 47.11.215.44
IP ELAN       : 47.11.217.158
Election Duration       : 2
Wait for Result time    : 35
Master Broadcast period : 30
===== master tps =====
PlatForm     TN        TLAN
ISP 1100   0000     47.11.215.44
Next timeout = 20 sec
AutoAnnounce    : 1
Timer duration  : 60 (Next timeout in 26 sec)
====== all tps ======
Num    Platform     TN         TLAN             ELAN       TimeOut
0      ISP 1100  0000     47.11.215.44    47.11.217.158 0
1        ITG SA  0408     47.11.215.30    47.11.216.246  0
2   ITG Pentium  0410    47.11.215.159    47.11.216.181  0
value = 0 = 0x0
```

The following example shows command output for a non-Master card in the node.

```
 VGMC> electShow
Node ID       : 3918
Is master     : 0
Up Time(sec)  : 167777
TN            : 0408
Platform      : ITG SA
IP TLAN       : 47.11.215.30
IP ELAN       : 47.11.216.246
```

```
Election Duration       : 2
Wait for Result time    : 35
Master Broadcast period : 30
===== master tps =====
PlatForm     TN        TLAN
ISP 1100   0000     47.11.215.44
Next timeout = 8 sec
AutoAnnounce    : 1
Timer duration  : 60 (Next timeout in 41 sec)
====== all tps ======
Num    Platform     TN         TLAN             ELAN       TimeOut
0        ITG SA  0408     47.11.215.30    47.11.216.246  0
1      ISP 1100  0000     47.11.215.44    47.11.217.158  0
2   ITG Pentium  0410    47.11.215.159    47.11.216.181  1
value = 0 = 0x0
```

eStatShow (printing statistics)

Syntax: **`eStatShow "source"`**

Request Ethernet statistics for an IP Phone for the VGMC. The IP Phone returns the response message to the VGMC. This command is supported by Phase 2 IP Phones and the Avaya 2050 IP Softphone. Execute this command from the VGMC> prompt.

The following example shows command output.

```
Ethernet Statistic Report from Set (47.11.215.153)
100 base T full duplex
Auto negotiate protocol received
VLAN ID: 88
Priority: 1
Packet collisions: 100
CRC errors: 30
Framing Errors:1
```

eStatShow (clearing statistics)

Syntax: **`eStatShow "source", "clear"`**

Clear the Ethernet statistics count when count is 1.

The following example shows command output.

```
->eStatShow "47.11.213.216"
value = 247380368 = 0xebeb990
->eStatShow Report from set (47.11.213.216):
Duplex Mode: 0
Auto Negotiate Protocol Received: 0x3
Interface Speed: 1
VLAN Priority Bit: 0
VLAN ID: 1
Packet Collision Peg Count: 3
CRC Error Peg Count: 1
Frame Error Peg Count: 8
```

exit

Syntax: **`exit`**

Exit the current shell and return to the next higher shell. On the Signaling Server, you can use this command to go from the vxshell to the pdt> shell to the oam> shell.

The following example shows command output.

```
-> exit
pdt> exit

oam>
```

On the VGMC, you can use this command to go from the VxWorks shell to the VGMC> shell.

```
-> exit
VGMC>
```

firmwareFileGetI2002

Syntax: **`firmwareFileGetI2002 "srvrIP", "uid", "passwd", "path", "fname"`**Syntax:

Download the IP Phone 2002 firmware from the specified FTP server, uncompress the firmware, and upgrade the UMS policy.

For more information about the parameters used in this command, see firmwareFileGetI2004 on page 105. This function internally calls firmwareFileGetI2004, so you can use that command directly to download either firmware file.

firmwareFileGetI2004

Syntax: **`firmwareFileGetI2004 "srvrIP", "userID", "password", "path", "filename"`**

Download the IP Phone 2004 firmware from the specified FTP server, uncompress the firmware, and upgrade the UMS policy. The command executes from the VxWorks CLI.

This command determines the firmware for the terminal type by parsing the input file name. If it is a Signaling Server, the firmware is downloaded from the remote host through FTP without compressing the file on the fly. If it is a VGMC, the command checks the disk space on the flash drives (C: and A:), and if enough space is available, the command continues to download the firmware from the remote FTP host and compresses the file on the fly.

The following table describes the command parameters.

Table 25: Command parameters

Parameter	Value	Description
srvrIP	–	IP address of the FTP server.
userID	–	Server logon user ID.
password	–	Server logon password.
path	–	Path on the server of the file to retrieve. Drive letters must be capitalized, for example, C:/ path.
filename	–	File name of the file to retrieve. Must be in 8.3 format.

The following example shows command output.

```
->firmwareFileGet
"47.11.229.34","joeuser","joeuser_password","/C:/FirmwareFilez/i2004/","CA02B26"
value = 0 = 0x0

APR 09 10:00:37 tUMS: Info File transfer completed
APR 09 10:00:37 tUMS: Info Set new FW file location from /C:/FW/FWFILE.1 to /C:/FW/
FWFILE.1
APR 09 10:00:37 tUMS: Info FW file uncompress
APR 09 10:00:37 tUMS: Info Get FW version CA02B26 from uncompressed file /ums/fwfile
APR 09 10:00:37 tUMS: Info Resync IniFile from version 3002B02 to CA02B26
```

firmwareFilePutI2002

Syntax: **`firmwareFilePutI2002 "hostIP", "uid", "passwd", "path", "fname"`**

This command transfers the IP Phone 2002 firmware from the local directory to the specified FTP server directory and file name. For more information about the command parameters, see firmwareFilePutI2004 on page 106.

firmwareFilePutI2004

Syntax: **`firmwareFilePutI2004 "hostIP", "uid", "passwd", "path", "fname"`**

This command transfers the IP Phone 2004 firmware from the local directory to the specfied host and creates a file in the specified directory.

The following table describes the command parameters.

Table 26: Command parameters

Parameter	Value	Description
hostIP	–	Remote host to upload the firmware file to.
userID	–	Remote host logon user ID.
password	–	Remote host logon password.
path	–	Path to place the file on the remote host.
filename	–	file name.

firmwareVersionShow

Syntax:

Print the VGMC firmware version.

The following example shows command output.

```
VGMC> firmwareVersionShow
Firmware Version = ITG Firmware Rls 4.0
value = 40 = 0x28 = '('
```

The command is not available on the Signaling Server and outputs the following:

```
-> firmwareVersionShow
No firmware version available.
value = 31 = 0x1f
```

flashConfigShow

Syntax: **`flashConfigShow`**

Displays information about the VGMC flash memory configuration. Execute this command from the BIOS or VxWorks shells. The command does not apply to the Signaling Server.

The following example shows command output.

```
-> flashConfigShow
Flash Vendor ID    : 0x89
Flash device ID    : 0x15
Flash device type  : i28f640j5
Flash base addr    : 0xf9800000
Flash sector count : 64
Flash device width : 2
Flash chip count   : 1
Flash device size  : 8MB
value = 0 = 0x0
```

ftpTypeA, ftpTypeI

Syntax: **`ftpTypeA ftpTypeI`**

These commands determine the type of FTP file transfer. The ftpTypeA command configures the transfer type as ASCII (the command default, appropriate for the config.ini, bootp.tab, omreport.nnn and syslog.n files), while ftpTypeI configures it as binary. Use the ftpTypeI command to configure binary mode if you transfer binary files from the VxWorks shell (for example, the VGMC application binary or IP Phone firmware).

ftpXferSet

Syntax: **`ftpXferSet`**

Configures the mode of file transfer for the hostFileGet command to FTP (the default is ITG mode).

ftpVerbose = 0/1

This variable enables or disables the verbose mode of the FTP application. To print additional information to debug file transfer problems, enter ftpVerbose = 1. The default is 0 (off). This variable is cleared on reboot or when power is cycled to the card.

The following example shows command output.

```
-> ftpVerbose = 1
_ftpVerbose = 0x3903ac: value = 1 = 0x1
-> hostFilePut 0,0,"192.168.1.14","itgadmin","itgadmin","/
C:","CONFIG.1","CONFIG.INI"
220 VxWorks (5.3.1) FTP server ready 331 Password required
230 User logged in
200 Type set to I, binary mode

FEB 21 11:06:36 tShell: Notice File transfer starting: CONFIG.INI ->
192.168.1.14:/C:/CONFIG.1200 Po
rt set okay
150 Opening BINARY mode data connection
226 Transfer complete

FEB 21 11:06:37 tShell: Notice File transfer completed: CONFIG.INI ->
192.168.1.14:/C:/CONFIG.1221 B
ye...see you later
value = 0 = 0x0
```

genToneOn chNum, side, freq, duration

Syntax: **`genToneOn chNum, side, freq, duration`**

Enter this command on the VGMC to generate a tone from the DSP to the IP Phone or from the DSP to the TDM network. This command can be useful when you debug speech path problems as a known good point of reference to either end.

The following table describes the command parameters. Omitted parameters use a value of 0.

Table 27: Command parameters

Parameter	Value	Description
side	0,1	Direction in which tone is generated, where: 0 = TDM 1 = TLAN
freq	0–3	Tone frequency, calculated as frequency = 500*(freq+1)Hz . For example, default = 0 produces 500 Hz tone.
duration	0–60	Tone duration in seconds. 0 = indefinitely.

The following example shows command output with all parameters entered, and command defaults with no parameters entered.

```
-> genToneOn 0,1,2,15
Tone generated to IP, channel: 0, freq: 1500, duration: 15
value = 0 = 0x0

-> genToneOn

Tone generated to TDM, channel: 0, freq: 500, duration: 0
value = 0 = 0x0
```

genToneOff chNum

Syntax: **`genToneOff chNum`**

Use this command on the VGMC to stop generating a tone started by the genToneOn command.

The following example shows command output.

```
-> genToneOff
value = 0 = 0x0
->
```

gg_spy_table_show

Syntax: **gg_spy_table_show**

Display the current Xspy settings.

The following example shows command output where the trace level is modified by the XspySetLevel command.

```
gg_spy_table_show
Key Level Destination
----- ---------------- ------------------------ ------------------------
( 1) ROOT dbgPort
( 2) DIM dbgPort
( 3) DIM dbgPort
value = 2794928 = 0x2aa5b0 = _gg_tune_verify_params + 0x148
->
-> XspySetLevel 0,0
value = 0 = 0x0
->
Key Level Destination
----- ---------------- ------------------------ ------------------------
( 1) ROOT General Information dbgPort
( 2) DIM General Information dbgPort
( 3) DIM General Information dbgPort
value = 2389352 = 0x247568 = _gg_tune_verify_params + 0x148
->
-> XspySetLevel 0,2
value = 0 = 0x0
->
-> gg_spy_table_show
Key Level Destination
----- ---------------- ------------------------ ------------------------
( 1) ROOT Normal Event dbgPort
( 2) DIM Normal Event dbgPort
( 3) DIM Normal Event dbgPort
value = 2794928 = 0x2aa5b0 = _gg_tune_verify_params + 0x148
-> XspySetLevel 1,6
value = 0 = 0x0
-> gg_spy_table_show
Key Level Destination
----- ---------------- ------------------------ ------------------------
( 1) ROOT dbgPort
( 2) DIM Normal Event dbgPort
( 3) DIM Normal Event dbgPort
value = 2794928 = 0x2aa5b0 = _gg_tune_verify_params + 0x148
```

h

Syntax: **h**

Displays the last 20 commands entered at the VxWorks shell prompt. Prior commands can be recalled, edited and executed, speeding debugging when the same or similar commands must be entered repeatedly.

Press Esc at the VxWorks shell to switch the shell to edit history mode. Press Return to display the line to the shell and exit edit mode. The default value for n is 1. The following are a few of the more useful editing commands.

Table 28: Movement and searching commands

Command	Description
nG	Go to command
nk	Get the nth previous shell command in history. Just entering k returns the last command entered
/s	Ssearch for string s backward in history
?s	Search for string s forward in history
nh	Move left n characters
nl (or n + SPACE)	Move right n characters
nw	Move n words forward
nb	Move n words back
fc	Find character c, searching forward
Fc	Find character c, searching backward
$	Go to end of line
0	Go to start of line

Table 29: Insertion commands

Command	Description
a	Append
A	Append at end of line
cl (or c + SPACE)	Change character (deletes character and enters input mode)
cw	Change word (deletes word and enters input mode)
cc (or S)	Change entire line
c$ (or C)	Change everything from cursor to end of line
i	Insert
I	Insert at beginning of line
R	Type over characters

Table 30: Editing commands

Command	Description
nrc	Replace the following n characters with c.
nx	Delete n characters starting at the cursor
nX	Delete n characters to the left of the cursor
dl	Delete character
dw	Delete word
dd	Delete entire line
d$ (or D)	Delete everything from cursor to end of line
p	Put last deletion after theP cursor
P	Put last deletion before the cursor
u	Undo last command
Ctrl+U	Delete line and exit edit mode
Ctrl+L	Redraw line
Ctrl+D	Complete symbol name
RETURN	Give line to shell and exit edit mode

```
-> h
43  inetstatShow
44  tcpShow
45  udpstatShow
46  itgCardShow
47  dosFsConfigShow
48  mbufShow
49  vgwShow
50  tpsShow
51  i
52  logShow
53  h
54  ls
55  ll
56  pwd
57  h
58  cd "/C:/CONFIG"
59  copy "CONFIG.INI"
60  h
61  copy "BOOTP.TAB"
62  h value = 0 = 0x0
```

H323CallTrace ch on

Syntax: **`H323CallTrace ch on`**

Turns on tracing for all channels.

The following example shows command output.

```
oam> H323CallTrace ch on
oam>
oam>
oam> 11/01/05 15:41:54 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500 called:
4801 remote IP:192.168.19.50(1720) Q931 setup  11/01/05 15:41:54 LOG0006 NPM:
H323CallTrace: Send chid:1 calling:4500 called:4801 remote IP:192.168.19.50(1720)
Q931 callProceeding  11/01/05 15:41:54 LOG0006 NPM: H323CallTrace: Send chid:1
calling:4500 called:4801 remote IP:192.168.19.50(1720) Q931 alerting  11/01/05
15:41:56 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500 called:4801 remote IP:
192.168.19.50(1720) Q931 connect  11/01/05 15:41:56 LOG0006 NPM: H323CallTrace:
Send chid:1 calling:4500 called:4801 remote IP:192.168.19.50(1720) H245
terminalCapabilitySet  11/01/05 15:41:56 LOG0006 NPM: H323CallTrace: Send chid:1
calling:4500 called:4801 remote IP:192.168.19.50(1720) H245
masterSlaveDetermination  11/01/05 15:41:56 LOG0006 NPM: H323CallTrace: Recv chid:1
calling:4500 called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:41:56 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500 called:4801
remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck

oam> 11/01/05 15:41:56 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500 called:
4801 remote IP:192.168.19.50(1720) H245 masterSlaveDetermination  11/01/05 15:41:56
LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500 called:4801 remote IP:
192.168.19.50(1720) H245 masterSlaveDeterminationAck  11/01/05 15:41:56 LOG0006
NPM: H323CallTrace: Recv chid:1 calling:4500 called:4801 remote IP:
192.168.19.50(1720) Q931 facility  11/01/05 15:41:56 LOG0006 NPM: H323CallTrace:
Send chid:1 calling:4500 called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:41:56 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500 called:4801
remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck  11/01/05 15:41:56
LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500 called:4801 remote IP:
192.168.19.50(1720) H245 masterSlaveDeterminationAck  11/01/05 15:41:56 LOG0006
NPM: H323CallTrace: Recv chid:1 calling:4500 called:4801 remote IP:
192.168.19.50(1720) Q931 facility  11/01/05 15:41:58 LOG0006 NPM: H323CallTrace:
Send chid:1 calling:4500 called:4801 remote IP:192.168.19.50(1720) H245
closeLogicalChannel  11/01/05 15:41:58 LOG0006 NPM: H323CallTrace: Send chid:1
calling:4500 called:4801 remote IP:192.168.19.50(1720) Q931 facility  11/01/05
15:41:58 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500 called:4801 remote IP:
192.168.19.50(1720) H245 terminalCapabilitySet  11/01/05 15:41:58 LOG0006 NPM:
H323CallTrace: Send chid:1 calling:4500 called:4801 remote IP:192.168.19.50(1720)
Q931 facility  11/01/05 15:41:58 LOG0006 NPM: H323CallTrace: Send chid:1 calling:
4500 called:4801 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
```

H323CallTrace ch off

Syntax: **`H323CallTrace ch off`**

Turns off the tracing for all channels.

H323CallTrace ch channelNum MsgRecv MsgRecv

Syntax: **`H323CallTrace ch channelNum MsgRecv MsgRecv`**

Turns the H323 tracing on or off.

The following table describes the command parameters.

Table 31: Command parameters

Parameter	Value	Description
channelNum	0 to maximum channel number	Channel number of the virtual trunk to trace.
MsgRecv	ON, OFF	Enables or disables tracing on messages sent to the specified channels.
MsgSend	ON, OFF	Enables or disables tracing on messages sent from the specified channels.

The following example shows command output.

```
oam> H323CallTrace ch 01 on on
oam>
oam>
oam> 11/01/05 15:45:25 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 setup
11/01/05 15:45:25 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 callProceeding
11/01/05 15:45:25 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 alerting
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 connect
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 masterSlaveDetermination
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 masterSlaveDetermination
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 masterSlaveDeterminationAck
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 masterSlaveDeterminationAck
11/01/05 15:45:27 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 requestChannelClose
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 endSessionCommand
```

```
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 releaseComplete
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 closeLogicalChannelAck
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 endSessionCommand
11/01/05 15:45:28 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
```

H323CallTrace ch

Syntax: **`H323CallTrace ch start_chNum end_chNum MsgRecv MsgSend>`**

Enable the tracing of a range of virtual trunk channels.

The following table describes the command parameters.

Table 32: Command parameters

Parameter	Value	Description
start_chNum	0 to maximum channel number	First channel number in the range of channels to to trace.
end_chNum	0 to maximum channel number	Last channel number in the range of channels to trace. Must be greater than start_chNum.
MsgRecv	ON, OFF	Enables or disables tracing on messages sent to the specified channels.
MsgSend	ON, OFF	Enables or disables tracing on messages sent from the specified channels.

The following example shows command output.

```
oam> H323CallTrace ch 01 06 on on
oam>
oam> 11/01/05 15:46:02 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 setup
11/01/05 15:46:02 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 callProceeding
11/01/05 15:46:02 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 alerting
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 connect
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 masterSlaveDetermination
```

```
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 masterSlaveDetermination
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 masterSlaveDeterminationAck
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 masterSlaveDeterminationAck
11/01/05 15:46:04 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote  IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 requestChannelClose
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 endSessionCommand
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Send chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 releaseComplete
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 closeLogicalChannelAck
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) H245 endSessionCommand
11/01/05 15:46:05 LOG0006 NPM: H323CallTrace: Recv chid:1 calling:4500
called:4801 remote IP:192.168.19.50(1720) Q931 facility  oam>
11/01/05 15:46:14 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 setup
11/01/05 15:46:14 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 callProceeding
11/01/05 15:46:14 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 alerting
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 connect
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 masterSlaveDetermination
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
```

```
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 masterSlaveDetermination
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 masterSlaveDeterminationAck
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 masterSlaveDeterminationAck
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:17 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility  oam> 11/01/05
15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 requestChannelClose
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 endSessionCommand
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 releaseComplete
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility  11/01/05 15:46:21 LOG0006
NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 closeLogicalChannelAck
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 endSessionCommand
11/01/05 15:46:21 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
```

H323CallTrace num

Syntax: **`H323CallTrace num calling_number MsgRecv MsgSend`**

Enables the tracing of H.323 messages by using the called and calling numbers. If the called or calling number of a virtual trunk session matches the number specified, the messages to and from the virtual trunk are traced.

The following table describes the command parameters.

Table 33: Command parameters

Parameter	Value	Description
calling_number	–	Calling or called telephone number to trace. Can be 1–32 numeric digits and can be a partial calling or called number.
MsgRecv	ON, OFF	Enables or disables tracing on messages sent to the specified channels.
MsgSend	ON, OFF	Enables or disables tracing on messages sent from the specified channels.

The following example shows command output.

```
oam> H323CallTrace num 4500 on on
oam>
oam> 11/01/05 15:46:39 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 setup
11/01/05 15:46:39 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 callProceeding
11/01/05 15:46:40 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 alerting
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 connect
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 masterSlaveDetermination
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 masterSlaveDetermination
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 masterSlaveDeterminationAck
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 masterSlaveDeterminationAck
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:42 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 closeLogicalChannel  IP:
192.168.19.50(1720) H245 closeLogicalChannelAck
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySet
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 terminalCapabilitySetAck
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
```

```
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 closeLogicalChannel
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 requestChannelClose
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 endSessionCommand
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) H245 endSessionCommand
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Send chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 facility
11/01/05 15:46:43 LOG0006 NPM: H323CallTrace: Recv chid:6 calling:4801
called:4500 remote IP:192.168.19.50(1720) Q931 releaseComplete
```

H323CallTrace num calling/called_number NPI TON MsgRecv MsgSend

Syntax:

Enables tracing of H.323 messages using the called and calling numbers. If the called or calling number of a virtual trunk session matches the number specified and the specified NPI and TON values match the call type, then the messages to and from the virtual trunk are traced.

The following table describes the command parameters.

Table 34: Command parameters

Parameter	Value	Description
channelNum	0–maximum channel number	Channel number to trace.
NPI	0–7	Specify the numbering plan identifier for which to trace calls. 0 = ALL NPIs 1 = Uknown 2 = ISDN/ telephone numbering plan (E.164) 3 = Private numbering plan 4 = E.163 5 = Telex numbering plan 6 = Data numbering plan 7 = National standard numbering plan
TON	0–7	Specify the type of number to use as a filter for tracing. Only calls using this TON setting are traced. 0 = All TONs 1 = Unknown Number 2 = International Number 3 = National Number 4 = Network Specific Number 5 = Subscriber Number 6 = L1 Regional Number 7 = L0 Regional Number
MsgRecv	ON, OFF	Enables or disables tracing on messages sent to the specified channels.

Parameter	Value	Description
MsgSend	ON, OFF	Enables or disables tracing on messages sent from the specified channels.

H323GwShow

Syntax: **H323GwShow**

Prints a snapshot summary of the state of the virtual trunk settings.

The following example shows command output.

```
oam> H323GwShow
Npm status: Active
Active GateKeeper: 192.168.19.51 (primary)
GateKeeper registration status: registered, TTL: 25 secs,
re-register: 12 secs
Channels Busy / Idle / Total: 0 / 6 / 6
Stack version: RadVision 4.1.0.19 Channel tracing: -1
Signaling Server H323 ID : SS_N318
```

H323GwShow ch channelNum

Syntax: **H323GwShow ch channelNum**

Display a snapshot summary of the state of the virtual trunk settings plus the snapshot of the active call on the specified channel if the call exists.

The following table describes the command parameters.

Table 35: Command parameters

Parameter	Value	Description
channelNum	0–maximum channel number	Channel number to trace.

The following example shows command output.

```
oam> H323GwShow ch 01
Npm status: Active
Active GateKeeper: 192.168.19.51 (primary)
GateKeeper registration status: registered, TTL: 25 secs,
re-register: 19 secs
Channels Busy / Idle / Total: 1 / 5 / 6
Stack version: RadVision 4.1.0.19 Channel tracing: -1
Signaling Server H323 ID : SS_N318
Chan Direction CallState RxState TxState Codec AirTime FS MS Fax DestNum RemoteIP
---- --------- --------- --------- --------- ------------- --------- ------- --- --
--- ------- ---------------
```

```
1 Terminate Connected Connected Connected G_711_u_law_20MS_NOVAD 18 yes m no 4801
192.168.19.50
```

H323GwShow num calling_num

Syntax: **`H323GwShow num calling_num`**

Display a snapshot summary of the state of the virtual trunk settings plus the snapshot of the active calls using the calling or called number or partial number specified.

The following table describes the command parameters.

Table 36: Command parameters

Parameter	Value	Description
calling_num	0–maximum channel number	Telephone number to trace. Can be 1–32 numeric digits and can be a partial calling or called number.

The following example shows command output.

```
oam> H323GwShow num 4500
Npm status: Active
Active GateKeeper: 192.168.19.51 (primary)
GateKeeper registration status: registered, TTL: 25 secs,
re-register: 14 secs
Channels Busy / Idle / Total: 0 / 6 / 6
Stack version: RadVision 4.1.0.19
Channel tracing: -1
Signaling Server H323 ID : SS_N318

Calling/Called Party Number: 4500
Numbering Plan Indicator: Undefined
Type Of Number: Undefined
No active calls for the number: 4500, NPI: Undefined, TON:
Undefined
```

H323GwShow num calling/called_num NPI TON

Syntax: **`H323GwShow num calling_num NPI TON`**

Display a snapshot summary of the state of the virtual trunk settings plus the snapshot of the active calls using the calling or called number or partial number with the specified NPI and TON values.

The following table describes the command parameters.

Table 37: Command parameters

Parameter	Value	Description
calling_num	–	Telephone number to trace. Can be 1–32 numeric digits and can be a partial calling or called number.
NPI	0–7	Specify the numbering plan identifier for which to trace calls. 0 = ALL NPIs 1 = Uknown 2 = ISDN/ telephone numbering plan (E.164) 3 = Private numbering plan 4 = E.163 5 = Telex numbering plan 6 = Data numbering plan 7 = National standard numbering plan
TON	0–7	Specify the type of number to use as a filter for tracing. Only calls using this TON setting will be traced. 0 = All TONs 1 = Unknown Number 2 = International Number 3 = National Number 4 = Network Specific Number 5 = Subscriber Number 6 = L1 Regional Number 7 = L0 Regional Number

The following example shows command output.

```
oam> H323GwShow num 4500 3 7
Npm status: Active
Active GateKeeper: 192.168.19.51 (primary)
GateKeeper registration status: registered, TTL: 25 secs,
re-register: 3 secs
Channels Busy / Idle / Total: 1 / 5 / 6
Stack version: RadVision 4.1.0.19
Channel tracing: -1
Signaling Server H323 ID : SS_N318
Calling/Called Party Number: 4500
Numbering Plan Indicator: Private
Type Of Number: L0Regional
Chan Direction CallState RxState TxState Codec AirTime FS MS Fax DestNum RemoteIP
---- --------- --------- --------- --------- ------------- --------- ------- --- --
--- ------- ---------------
6 Originate Connected Connected Connected G_711_u_law_20MS_NOVAD 18 yes s no 4500
192.168.19.50
```

H323Output

Syntax: **`H323Output output_destination "file_pathname"`**

Specify where to direct tracing output.

The following table describes the command parameters.

Table 38: Command parameters

Parameter	Value	Description
output_destination	1–4	Specify where to direct trace messages for the H323CallTrace command, where: 1= TTY 2 = RPTLOG 3 = File 4 = File and TTY
file_pathname	"string"	Specify the file to print to if output_destination = 3 or 4. Enclose the string in quotation marks.

The following example shows command output.

```
oam> H323Output 3 "Testcap.txt"
```

H323TraceShow

Syntax: **`H323TraceShow`**

This command displays the trace settings, including the output destination and file name as well as all active traces for the H323CallTrace trace tool.

The following example shows command output.

```
oam> H323TraceShow
Output to TTY
Calling/called number NPI TON H323MsgRecv H323MsgSend
===================== === === =========== ===========
4500                  0   0   ON          OFF
Channels H323MsgRecv (VTRK->NPM) H323MsgSend (NPM->VTRK)
======== ======================= =======================
0 - 382  OFF                     OFF
```

help

Syntax: **`help`**

Prints the VxWorks shell help menu. The operating system implements these commands on the SMC.

The following example shows command output.

```
-> help
help                           Print this list
dbgHelp                        Print debugger help info
nfsHelp                        Print nfs help info
netHelp                        Print network help info
spyHelp                        Print task histogrammer help info
timexHelp                      Print execution timer help info
h         [n]                  Print (or set) shell history
i         [task]               Summary of tasks' TCBs
```

```
ti        task                 Complete info on TCB for task
sp        adr,args...          Spawn a task, pri=100, opt=0,
stk=20000
taskSpawn name,pri,opt,stk,adr,args... Spawn a task
td        task                 Delete a task
ts        task                 Suspend a task
tr        task                 Resume a task
d         [adr[,nunits[,width]]] Display memory
m         adr[,width]          Modify memory
mRegs     [reg[,task]]         Modify a task's registers interactively
pc        [task]               Return task's program counter
version                        Print VxWorks version info, and boot
line
iam       "user"[,"passwd"]     Set user name and passwd
whoami                         Print user name
devs                           List devices
cd        "path"             Set current working path
pwd                            Print working path
ls        ["path"[,long]]    List contents of directory
ll        ["path"]           List contents of directory - long format
rename    "old","new"      Change name of file
copy      ["in"][,"out"]   Copy in file to out file (0 = std in/out)
ld        [syms[,noAbort][,"name"]] Load stdin, or file, into
memory                                        (syms = add symbols to
table:                                               -1 = none, 0 = globals, 1 = all)
lkup      ["substr"]         List symbols in system symbol table
lkAddr    address              List symbol table entries near address
checkStack  [task]             List task stack sizes and usage
printErrno  value              Print the name of a status value
period    secs,adr,args... Spawn task to call function periodically
repeat    n,adr,args...    Spawn task to call function n times (0=forever)
diskFormat  "device"         Format disk
diskInit  "device"           Initialize file system on disk
squeeze   "device"           Squeeze free space on RT-11 device

NOTE:  Arguments specifying 'task' can be either task ID or name.
value = 1 = 0x1
```

hostFileGet

Syntax: **`hostFileGet type, lsnr, "hostIP", "uid", "pswd", "path", "fname", "dPath"`**

Transfer the specified file from the directory path on the specified FTP server to the specified directory. Neither is used when you manually transfer the file from the VxWorks shell.

Table 39: Command parameters

Parameter	Value	Description
type	0	Define the file type (for example, BOOTP) for file locking.
lsnr	0	Define the task to notify when the file transfer completes.

Parameter	Value	Description
hostIP	"string"	Specify the FTP server host IP address from which to retrieve the file. Enclose the string in quotation marks.
uid	"string"	Username to log on to the remote host.
pswd	"string"	Password to log on to the remote host.
fname	"string"	Specify the file name of the file to retrieve. Enclose the string in quotation marks.
dPath	"string"	Specify the path name to transfer the file to. Enclose the string in quotation marks.

The following example shows command output.

```
VGMC> hostFileGet
0,0,"192.168.1.14","itgadmin","itgadmin","/C:","CONFIG.1","/C:/CONFIG"
value = 0 = 0x0
```

hostFilePut

Syntax: **`hostFilePut type,lsnr,"hostIP","uid","pswd","path","fname","srcFile"`**

Transfer the specified file from the VGMC to the specified host.

Table 40: Command parameters

Parameter	Value	Description
type	0	Define the file type (for example, BOOTP) for file locking.
lsnr	0	Define the task to notify when the file transfer completes.
hostIP	"string"	Specify the FTP server host IP address to transfer the file to. Enclose the string in quotation marks.
uid	"string"	Username to log on to the remote host. Enclose the string in quotation marks.
pswd	"string"	Password to log on to the remote host. Enclose the string in quotation marks.
fname	"string"	Specify the file name to save the file as on the remote host. Enclose the string in quotation marks.

Parameter	Value	Description
path	"string"	Specify the path name to transfer the file to. Enclose the string in quotation marks.
srcfile	"string"	Specify the file name of the source file on the VGMC. Enclose the string in quotation marks.

```
VGMC> hostFilePut
0,0,"192.168.1.14","itgadmin","itgadmin","/C:","CONFIG.1","CONFIG.INI"

FEB 21 11:08:28 tShell: Notice File transfer starting: CONFIG.INI -> 192.168.1.14:/
C:/CONFIG.1
FEB 21 11:08:29 tShell: Notice File transfer completed: CONFIG.INI ->
192.168.1.14:/C:/CONFIG.1
value = 0 = 0x0
```

i

Syntax: **i**

Print all tasks and task IDs to ensure that no task is suspended. For more information about these tasks, see VGMC logging commands on page 59.

```
VGMC> i
NAME        ENTRY       TID    PRI   STATUS      PC       SP     ERRNO  DELAY
---------- ------------ -------- --- ---------- -------- -------- ------- -----
tExcTask   _excTask      3fadc4c   0 PEND         300f7f  3fadbbc       0     0
tShell     _shell        3a881f8   1 READY        2e40d8  3a87ed8   3006b     0
tPcmciad   _pcmciad      3f8aa24   2 PEND         300f7f  3f8a994       0     0
tTelnetd   _telnetd      3aa3cf0   2 PEND         2a9e50  3aa3c24       0     0
tPxTimer   _pxTaskInit   3a72ed0  10 DELAY        2a7b26  3a72e6c       4 29917
tRdbTask   _rdbTask      3aa1290  20 PEND         2a9e50  3aa117c   d0003     0
tMVX_DIM   _dim_main     3a4e488  40 PEND         2a9e50  3a4e41c  3d0002     0
tRTP       _vgwRtpTask   3a14814  40 PEND         2a9e50  3a145c4       0     0
tAioIoTask1_aioIoTask    3f9cd48  50 PEND         2a9e50  3f9ccf0       0     0
tAioIoTask0_aioIoTask    3f95ba0  50 PEND         2a9e50  3f95b48       0     0
tNetTask   _netTask      3c34188  50 PEND         2a9e50  3c34130      3d     0
tAioWait   _aioWaitTask  3fa3ef0  51 PEND         2a9e50  3fa3dfc       0     0
tFtpdTask  _ftpdTask     3a9eb68  55 PEND         2a9e50  3a9eaa0       0     0
tTftpdTask _tftpdTask    3a9b9ac  55 PEND         2a9e50  3a9b438       0     0
baseMMintTa_baseMMintTa  3a6b784  70 PEND         2a9e50  3a6b714       0     0
tA07       _a07Task      3a66614  80 PEND         300f7f  3a66598       0     0
tTffsPTask _flPollTask   3f8830c 100 DELAY        2a7b26  3f882c8  3d0002    41
tPortmapd  _portmapd     3aa27c0 100 PEND         2a9e50  3aa2698      16     0
tXA        _xaTask       3a68ecc 100 PEND         300f7f  3a68dac       0     0
tRDP       _rudpMgrStar  3a643e4 120 PEND         2a9e50  3a64178       b     0
tSnmpd     2d056c        3a98900 150 PEND         2a9e50  3a97f84       0     0
tTCK       _tpsSocketTa  3a21124 195 PEND         2a9e50  3a20ee8       0     0
tbootpd    _cmain        3a6f670 200 PEND         2a9e50  3a6f124      23     0
tMAM       _mamMain      3a57288 200 PEND         2d7112  3a571b4       2     0
tVTM       271598        3a39edc 200 PEND         2d7112  3a39e04       4     0
tSET       294e88        3a2d684 200 PEND         2d7112  3a2d5a8  380003     0
tCSV       _csvTask      3a23bd4 200 PEND         2d7112  3a23b00       4     0
tTPS       _tpsTask      3a1ee3c 200 PEND         2d7112  3a1ed38       4     0
tVGW       _vgwTask      3a169bc 200 PEND         2d7112  3a168e0   d0003     0
tMVX_XSPY  _XSpyTaskMai  3a50a14 250 PEND         300f7f  3a50984   c0002     0
tOMM       _ommMain      3a3dbf4 250 PEND         2d7112  3a3db20  1c0001     0
tVTI       _vtiTask      3a30afc 250 PEND         2d7112  3a30a2c  1c0001     0
tUMS       _umsServerSt  3a1c2c4 250 PEND         2d7112  3a1c1dc       4     0
tUMC       _umsClientSt  3a19780 250 PEND         2d7112  3a196a0  1c0001     0
```

```
tLogTask   _logTask      3fa9ee4 255 PEND         300f7f  3fa9e58       0     0
tSyslogd   115bf8        3a75078 255 PEND         300f7f  3a74e58       0     0
value = 0 = 0x0
VGMC>
```

icmpstatShow

Syntax: **`icmpstatShow`**

Displays statistics for the ICMP protocol.

```
-> icmpstatShow ICMP: 4 calls to icmp_error 0 error not
generated because old message was icmp Output histogram:
echo reply: 7 destination unreachable: 4 0 message with
bad code fields 0 message < minimum length 0 bad checksum 0
message with bad length Input histogram: echo reply: 9
destination unreachable: 1 echo: 7 7 message responses
generated value = 31 = 0x1f
```

ifShow

Syntax: **`ifShow`**

Displays the attached network interfaces. The current parameters configured on the ELAN (lnIsa) and TLAN (lnPci) are printed. On the current Master card, two Internet addresses print for the lnPci interface: the first is the card TLAN interface IP, and the second is the node IP.

The lo parameter is the internal software loopback interface. The Ethernet address (MAC address) prints for each interface. A large number of multicast packets received indicates extensive broadcast traffic on the interface, which is detrimental to the performance of the VGMC. If no lnPci interface data prints, the card did not boot up correctly and the interface is not configured. The card management MAC address may not match the MAC address configured in EM; if that is true, correct it in EM, download the node properties, or submit and transfer in EM and reboot the card.

The following is the output on the ITG-P card.

```
VGMC> ifShow lnIsa (unit number 0):
Flags: (0x8863) UP BROADCAST MULTICAST ARP RUNNING
Type: ETHERNET_CSMACD
Internet address: 47.11.216.181
Broadcast address: 47.11.217.255
Netmask 0xff000000 Subnetmask 0xfffffe00
Ethernet address is 00:60:38:8e:29:b9
Metric is 0
Maximum Transfer Unit size is 1500
95696 packets received; 1848 packets sent
93332 multicast packets received
0 multicast packets sent
0 input errors; 0 output errors
0 collisions; 0 dropped
```

```
lnPci (unit number 1):
Flags: (0x8863) UP BROADCAST MULTICAST ARP RUNNING
Type: ETHERNET_CSMACD
Internet address: 47.11.215.159
Broadcast address: 47.11.215.255
Netmask 0xff000000 Subnetmask 0xffffff00
Ethernet address is 00:60:38:bd:20:92
Metric is 0
Maximum Transfer Unit size is 1500
96270 packets received; 1723 packets sent
93319 multicast packets received
0 multicast packets sent
0 input errors; 0 output errors
0 collisions; 0 dropped  lo (unit number 0):
Flags: (0x8069) UP LOOPBACK MULTICAST ARP RUNNING
Type: SOFTWARE_LOOPBACK
Internet address: 127.0.0.1
Netmask 0xff000000 Subnetmask 0xff000000
Metric is 0
Maximum Transfer Unit size is 32768
90 packets received; 90 packets sent
0 multicast packets received
0 multicast packets sent
0 input errors; 0 output errors
0 collisions; 0 dropped
value = 29 = 0x1d
```

The following is the output on the SMC card.

```
VGMC> ifShow ixpMac (unit number 1):
Flags: (0x8863) UP BROADCAST MULTICAST ARP RUNNING
Type: ETHERNET_CSMACD
Internet address: 47.11.216.246
Broadcast address: 47.11.217.255
Netmask 0xff000000 Subnetmask 0xfffffe00
Ethernet address is 00:60:38:bd:b3:51
Metric is 0
Maximum Transfer Unit size is 1500
102786 packets received; 1417 packets sent
101405 multicast packets received
0 multicast packets sent
0 input errors; 0 output errors
0 collisions; 0 dropped
lo (unit number 0):
Flags: (0x8069) UP LOOPBACK MULTICAST ARP RUNNING
Type: SOFTWARE_LOOPBACK
Internet address: 127.0.0.1
Netmask 0xff000000 Subnetmask 0xff000000
Metric is 0
Maximum Transfer Unit size is 32768
0 packets received; 0 packets sent
0 multicast packets received
0 multicast packets sent
0 input errors; 0 output errors
0 collisions; 0 dropped
ixpMac (unit number 0):
Flags: (0x8863) UP BROADCAST MULTICAST ARP RUNNING
Type: ETHERNET_CSMACD
Internet address: 47.11.215.30
Broadcast address: 47.11.215.255
Netmask 0xff000000 Subnetmask 0xffffff00
Ethernet address is 00:60:38:bd:b3:50
Metric is 0
Maximum Transfer Unit size is 1500
102855 packets received; 548 packets sent
102478 multicast packets received
40 multicast packets sent
0 input errors; 0 output errors
```

```
0 collisions; 0 dropped
value = 29 = 0x1d
```

The following is the command from the Signaling Server. The Signaling Server is currently the node Master; the TLAN interface (fei unit number 1) has a second IP address assigned, which is the node IP address.

```
-> ifShow fei (unit number 0):
Flags: (0x8063) UP BROADCAST MULTICAST ARP RUNNING
Type: ETHERNET_CSMACD
Internet address: 47.11.217.158
Broadcast address: 47.11.217.255
Netmask 0xff000000 Subnetmask 0xfffffe00
Ethernet address is 00:03:47:da:cd:59
Metric is 0
Maximum Transfer Unit size is 1500
16968943 octets received
3912683 octets sent
175445 packets received
36349 packets sent
143228 broadcast packets received
56 broadcast packets sent
0 multicast packets received
0 multicast packets sent
0 input discards
0 input unknown protocols
0 input errors
0 output errors
0 collisions; 0 dropped
lo (unit number 0):
Flags: (0x8069) UP LOOPBACK MULTICAST ARP RUNNING
Type: SOFTWARE_LOOPBACK
Internet address: 127.0.0.1

Internet address: 47.11.215.43
Netmask 0xff000000 Subnetmask 0xff000000
Metric is 0
Maximum Transfer Unit size is 32768
826 packets received; 826 packets sent
0 multicast packets received
0 multicast packets sent
0 input errors; 0 output errors
0 collisions; 0 dropped  fei (unit number 1):
Flags: (0x8063) UP BROADCAST MULTICAST ARP RUNNING       Type: ETHERNET_CSMACD
Internet address: 47.11.215.44
Broadcast address: 47.11.215.255
Internet address: 47.11.215.43
Broadcast address: 47.11.215.255
Netmask 0xff000000 Subnetmask 0xffffff00
Ethernet address is 00:03:47:da:cd:5a
Metric is 0
Maximum Transfer Unit size is 1500
13868553 octets received
9164036 octets sent
152939 packets received
13719 packets sent
142752 broadcast packets received
532 broadcast packets sent
0 multicast packets received
0 multicast packets sent
0 input discards
0 input unknown protocols
0 input errors
0 output errors
0 collisions; 0 dropped
value = 29 = 0x1d
```

inactiveDlogShow numOfLine

Syntax: **`inactiveDlogShow numOfLine`**

Show the nonactive log file information for the UFTP IP Telephone firmware download. When no argument is passed, the command shows the contents of the entire file. When you enter the optional parameter numOfLine, the command prints the number of lines specified.

```
oam> inactiveDlogShow inactiveDlogShow Active F/W download file: /u/log/
UFTPLOG0.TXT Space remaining:          399755  Inactive F/W download file: /u/log/
UFTPLOG1.TXT /u/log/UFTPLOG1.TXT ---------------------------------------- 12/27/03
19:58:41 f/w dnld success: (47.11.217.11) I2002 12/27/03 20:24:30 f/w dnld success:
(47.11.217.12) I2002 12/27/03 21:42:11 f/w dnld success: (47.11.217.15) I2002
12/27/03 22:17:40 f/w dnld success: (47.11.217.20) I2004
```

inetstatShow

Syntax: **`inetstatShow`**

Display information about all of the active IP sockets.

```
-> inetstatShow
Active Internet connections (including servers)
PCB      Proto Recv-Q Send-Q  Local Address      Foreign Address    (state)
-------- ----- ------ ------  ------------------ ------------------ -------
3c9454c  TCP        0      0  192.168.1.14.23    192.168.1.102.1672 ESTABLISHED
3c93e98  TCP        0      0  0.0.0.0.111        0.0.0.0            LISTEN
3c93d0c  TCP        0      0  0.0.0.0.21         0.0.0.0            LISTEN
3c93c04  TCP        0      0  0.0.0.0.1009       0.0.0.0            LISTEN
3c93afc  TCP        0      0  0.0.0.0.23         0.0.0.0            LISTEN
3c94444  UDP        0      0  192.168.1.149.4100 0.0.0.0
3c943c0  UDP        0      0  0.0.0.0.16543      0.0.0.0
3c9433c  UDP        0      0  192.168.1.140.7300 0.0.0.0
3c942b8  UDP        0      0  192.168.1.14.15000 0.0.0.0
3c941b0  UDP        0      0  0.0.0.0.15001      0.0.0.0
3c93c88  UDP        0      0  192.168.1.140.5100 0.0.0.0
3c940a8  UDP        0      0  0.0.0.0.514        0.0.0.0
3c94024  UDP        0      0  0.0.0.0.20001      0.0.0.0
3c93fa0  UDP        0      0  0.0.0.0.67         0.0.0.0
3c93f1c  UDP        0      0  0.0.0.0.161        0.0.0.0
3c93e14  UDP        0      0  0.0.0.0.111        0.0.0.0
3c93d90  UDP        0      0  0.0.0.0.69         0.0.0.0
value = 1 = 0x1 ->
```

iosFdShow

Syntax: **`iosFdShow`**

Display all of the file descriptors in use.

The following example is from an ITG-P card.

```
 -> iosFdShow
fd name                 drv
3 /tyCo/0                1
4 /aioPipe
2      5 (socket)
4      6 (socket)
4      7 (socket)
4      8 /dev/log
2      9 (socket)
4     10 (socket)
4     11 (socket)
4     12 (socket)
4     13 /dev/log
2     14 /C:/log/EXCPLOG.0
3     15 /C:/log/audit.his
3     16 /C:/log/SYSLOG.0
3     17 (socket)
4     18 /pipe/bootpd
2     19 (socket)
4     20 /dev/log
2     21 (socket)
4     22 /dev/log
2     23 /pipe/srv.6
2     24 /dev/log
2     25 /dev/log
2     26 /pipe/rudp
2     27 /dev/log
2     28 (socket)
4     29 /dev/log
2     30 /dev/log
2     31 (socket)
4     32 (socket)
4     33 (socket)
4     34 (socket)
4     35 /dev/log
2     36 /dev/log
2     37 /dev/log
2     38 (socket)
4     39 /pipe/srv.39
2     40 /dev/log
2     41 /dev/log
2     42 /dev/log
2     43 /dev/log
2     44 /dev/log
2     45 (socket)
4     46 (socket)
4     47 /pipe/srv.38
2     48 /dev/log
2     49 /dev/log
2     50 /pty/telnet.M
7     51 /dev/log
2     52 /dev/log
2     53 (socket)
4     54 /dev/log
2     55 /pipe/rtpsig
2     56 /dev/log
2     57 /pipe/rtcpsig
2     58 /dev/log
2     59 /dev/log
2     60 (socket)
4     61 /pty/telnet.S          6 in out err
62 /tyCo/0
1     63 /dev/log
```

```
2    value = 33286644 = 0x1fbe9f4
->
```

The following example is the output on the SMC.

```
-> iosFdShow
fd name                 drv
3 /tyCo/0                1
4 /aioPipe               2
5 (socket)               4
6 (socket)               4
7 (socket)               4
8 (socket)               4
9 (socket)               4
10 (socket)               4
11 (socket)               4
12 /C:/log/excplog.0      3   << Fd for active Exception Log file
13 /C:/log/audit.his      3   << Fd for audit history file
14 (socket)               4
15 /pipe/bootpd           2   << Fd for Bootp  16 /dev/log               2
17 (socket)               4
18 /C:/log/syslog.2       3   << Fd for active SYSLOG file
19 /dev/log               2
20 /pipe/srv.6            2
21 /dev/log               2
22 /dev/log               2
23 /pipe/rudp             2
24 /dev/log               2
25 /dev/log               2
26 (socket)               4
27 (socket)               4
28 (socket)               4
29 (socket)               4
30 (socket)               4
31 /dev/log               2
32 /dev/log               2
33 /dev/log               2
34 /dev/log               2
35 (socket)               4
36 /pipe/srv.39           2
37 /dev/log               2
38 /dev/log               2
39 /dev/log               2
40 /dev/log               2
41 /dev/log               2
42 (socket)               4
43 /dev/log               2
44 (socket)               4
45 (socket)               4
46 /pipe/srv.38           2
47 /dev/log               2
48 /dev/log               2
49 /dev/log               2
50 /dev/log               2
51 /pty/telnet.M          7
52 /pty/telnet.S          6 in out err
53 /dev/log               2
54 /tyCo/0                1
55 /dev/log               2
56 (socket)               4
57 /dev/log               2
58 /pipe/rtpsig           2
59 /dev/log               2
60 /pipe/rtcpsig          2
61 /dev/log               2
value = 32 = 0x20 = ' '
```

The following example is the output on the Signaling Server.

```
-> iosFdShow
fd name                 drv
3 /tyCo/0                2 in out err
4 /aioPipe               3
5 /tyCo/1                2
6 (socket)               8
7 (socket)               8
8 (socket)               8
9 (socket)               8
10 (socket)               8
11 /u/rpt                 4
12 /u/rpt/LOG00000.RPT    4
13 /u/rpt                 4
14 /u/rpt/LOG00000.RPT    4
15 (socket)               8
16 (socket)               8
17 (socket)               8
18 (socket)               8
19 /pipe/bootpd           3
20 /pipe/srv.6            3
21 (socket)               8
22 /pipe/rudp             3
23 (socket)               8
24 (socket)               8
25 (socket)               8
26 (socket)               8
27 (socket)               8
28 /pipe/srv.39           3
29 (socket)               8
30 (socket)               8
31 (socket)               8
32 /pipe/srv.38           3
33 (socket)               8
34 (socket)               8
35 /pipe/srv.48           3
36 (socket)               8
37 (socket)               8
39 (socket)               8
40 /pipe/srv.49           3
41 (socket)               8
42 (socket)               8
43 (socket)               8
45 (socket)               8
value = 32752 = 0x7ff0
```

IPInfoShow

Syntax: **`IPInfoShow`**

Display a summary of the card IP configuration from the VGMC prompt.

The following is the output from the ITG-P card.

```
VGMC> IPInfoShow
Maintenance Interface =  lnIsa0
Maintenance IP address = 192.168.1.14
Maintenance subnet mask = 255.255.255.128
Voice Interface =  lnPci1
Voice IP address = 192.168.1.140
Voice subnet mask = 255.255.255.128
ROUTE NET TABLE destination      gateway flags  Refcnt         Use Interface
----------------------------------------------------------------------------
```

```
0.0.0.0          192.168.1.200         3     0       0                lnPci1
192.168.1.0      192.168.1.14        101     0       0                lnIsa0
192.168.1.128    192.168.1.140       101     0       0                lnPci1
----------------------------------------------------------------------------
ROUTE HOST TABLE destination     gateway flags  Refcnt         Use Interface
----------------------------------------------------------------------------
127.0.0.1        127.0.0.1             5     0       0                   lo0
----------------------------------------------------------------------------
value = 77 = 0x4d = 'M'
```

The following is the output on the SMC.

```
VGMC> IPInfoShow
Maintenance Interface =  ixpMac1
Maintenance IP address = 47.11.216.246
Maintenance subnet mask = 255.255.254.0
Voice Interface =  ixpMac0
Voice IP address = 47.11.215.30
Voice subnet mask       = 255.255.255.0
ROUTE NET TABLE  destination     gateway flags  Refcnt         Use Interface
----------------------------------------------------------------------------
0.0.0.0          47.11.215.1           3     2    2921               ixpMac0
47.11.215.0      47.11.215.30        101     0       0               ixpMac0
47.11.216.0      47.11.216.246       101     0       0               ixpMac1
47.11.215.0      47.11.215.30        101     0       0               ixpMac0
----------------------------------------------------------------------------
ROUTE HOST TABLE  destination     gateway flags  Refcnt        Use Interface
----------------------------------------------------------------------------
127.0.0.1           127.0.0.1           5     0       0                  lo0
----------------------------------------------------------------------------
value = 77 = 0x4d = 'M'
```

The following is the output on the Signaling Server.

```
-> IPInfoShow
Maintenance Interface =  fei0
Maintenance IP address = 47.11.217.158
Maintenance subnet mask = 255.255.254.0
Voice Interface =  fei1
Voice IP address = 47.11.215.44
Voice subnet mask       = 255.255.255.0
ROUTE NET TABLE  destination    gateway  flags    Refcnt       Use Interface
----------------------------------------------------------------------------
0.0.0.0          47.11.215.1          3      1       756                fei1
47.11.215.0      47.11.215.44        101    0         0                 fei1
47.11.216.0      47.11.217.158       101    0         0                 fei0
----------------------------------------------------------------------------
ROUTE HOST TABLE destination    gateway  flags     Refcnt      Use Interface
----------------------------------------------------------------------------
47.11.215.43     47.11.215.43         5      0          0                lo0
127.0.0.1        127.0.0.1            5      1         19                lo0
----------------------------------------------------------------------------
value = 77 = 0x4d = 'M'
```

ipstatShow

Syntax: **`ipstatShow`**

Display the IP protocol statistics.

```
-> ipstatShow
total 1365243
badsum 0 tooshort 0 toosmall 0 badhlen 0 badlen 0 infragments 0 fragdropped 0
fragtimeout 0 forward
0 cantforward 911 redirectsent 0 unknownprotocol 918 nobuffers 0 reassembled 0
outfragments 0 noroute 0
value = 1 = 0x1
```

isetCount

Syntax: **`isetCount "expressionString"`**

Count the number of registered IP Phones based on the specified query. This command uses the same parameter as the isetGet command, but instead of printing out detailed phone information, it prints only the total number of telephones that satisfy the query.

The following are examples of various expressions and the numbers returned by isetCount based on the following TPS IP Phone status.

```
-> isetGet IP Address Type RegType State Up Time TN HWID FWVsn
UNIStimVsn SrcPort DstPort
------------------ ------- ------- ----------- ------------- ------------
------------------- -------
---------- ------- -------
47.11.254.12 i2004 Regular busy 5 16:50:31 061-02 1800603876c7a1660
0 0602B39 2.5 5100 5000
47.11.254.21 i2002 Regular busy 5 16:50:26 061-11 1800802ddcd514660
0 0603B39 2.5 5100 5000
47.11.254.11 i2004 Regular online 5 16:49:48 061-01 180060387641c366
00 0602B39 2.5 5100 5000
Total sets = 3
value = 0 = 0x0

-> isetCount Total
Internet Phone Phone Count = 3
value = 0 = 0x0

-> isetCount "ip > 47.11.254.11"
IP Phone Count = 2
value = 0 = 0x0

-> isetCount "ip >= 47.11.254.11"
IP Phone Count = 3
value = 0 = 0x0

-> isetCount "tn != 61 11"
IP Phone Count = 2
value = 0 = 0x0

-> isetCount "state == busy"
IP Phone Count = 2
value = 0 = 0x0

-> isetCount "state == busy && type != i2004"
IP Phone Count = 1
value = 0 = 0x0

-> isetCount "fwvsn >= 0602b30"
IP Phone Count = 3
value = 0 = 0x0
```

```
-> isetCount "ip < 47.11.254.12"
IP Phone Count = 1
value = 0 = 0x0

-> isetCount "fwvsn <= 0602b39"
IP Phone Count = 3
value = 0 = 0x0
```

isetGet

Syntax: **`isetGet "expressionString"`**

This command uses one string parameter that is a sequence of expression, linked by &&. Each expression consists of three parts: opcode1, operator and opcode2. Currently, only the following operators are handled: ==, !=, <, >, <=, and >=. opcode1 must be one of the fields in the isetShow command output, opcode2 must be a well-formatted value, the format depends on opcode1. Both opcode1 and opcode2 are not case-sensitive.

For use "NAT==x", where x can be: C for Cone NAT S for Symmetric NAT P for Pending a response from Echo Server 1 U for Unknown, response from Echo Server 1, but none from Echo Server 2.

Behind NAT, but unsure if Cone or Symmetric. Y for all telephones that are "C,S, and U" N for all telephones that are not behind NAT <blank> for all telephones that are not behind NAT

"RegType" is not currently accepted as an opcode.

```
"IP == 47.11.216.242"
"tn == 61 23"
"TN == 61 23 && IP == 47.11.216.242"
"Type == i2004 && State == online"
```

If the parameter is "?", then a help text prints.

The output of the command isetGet without parameters is the same as entering isetShow without parameters.

```
-> isetShow
IP Address Type RegType State Up Time TN HWID FWVsn UNIStimVsn SrcPort DstPort
-------------- ------- ------- ----------- ------------- ---------- ----------
-------- ------- ---------- ------- ------
47.11.254.12 i2004 Regular online 0 16:50:31 061-02 1800603876c7a16600 0602B39 2.5
5100 5000
47.11.254.21 i2002 Regular busy 0 16:50:26 061-11 1800802ddcd5146600 0603B39 2.5
5100 5000
47.11.254.11 i2004 Regular online 0 16:49:48 061-01 180060387641c36600 0602B39 2.5
5100 5000
Total sets = 3
value = 0 = 0x0

-> isetGet

IP Address Type RegType State Up Time TN HWID FWVsn UNIStimVsn SrcPort DstPort
-------------- ------- ------- ----------- ------------- ---------- ----------
-------- ------- ---------- ------- ------
```

```
47.11.254.12 i2004 Regular online 0 16:50:32 061-02 1800603876c7a16600 0602B39 2.5
5100 5000
47.11.254.21 i2002 Regular busy 0 16:50:27 061-11 1800802ddcd5146600 0603B39 2.5
5100 5000
47.11.254.11 i2004 Regular online 0 16:49:49 061-01 180060387641c36600 0602B39 2.5
5100 5000
Total sets = 3
value = 0 = 0x0
```

Query Expression

Syntax:

The query string is a sequence of expressions, linked by &&. Each expression consists of three parts: opcode1, operator, and opcode2. Currently, only the following operators are handled: ==, !=, <, >, <=, and >= .

opcode1 must be one of the fields seen in "isetShow" output (except RegType).

opcode2 must be a well-formatted value, the format depends on opcode1.

Both opcode1 and opcode2 are not case-sensitive.

```
"IP == 47.11.216.242"
"tn == 61 23"
"TN == 61 23 && IP == 47.11.216.242"
"Type == i2004 && State == online"
"NAT == y"

2.-> isetGet "ip > 47.11.215.68"
IP Address Type State Up Time TN HWID FWVsn SrcPort DstPort
------------------ ------- ----------- -------------
------------ ------------------ ------- ------- -------
47.11.215.69 i2002 busy 0 00:00:28 061-22
18006038dd00416600 0603B30 5100 5000
Total sets = 1
3. -> isetGet "ip >= 47.11.215.68"
IP Address Type State Up Time TN HWID FWVsn SrcPort DstPort
------------------ ------- ----------- -------------
------------ ------------------ ------- ------- -------
47.11.215.68 i2004 busy 0 00:00:34 061-23 180060387602a766
00 0602B28 5100 5000
47.11.215.69 i2002 busy 0 00:00:16 061-22 18006038dd004166
00 0603B30 5100 5000
Total sets = 2
4. -> isetGet "tn != 61 22"
IP Address Type State Up Time TN HWID FWVsn SrcPort DstPort
------------------ ------- ----------- -------------
------------ ------------------ ------- ------- -------
47.11.215.68 i2004 busy 0 00:02:31 061-23 180060387602a766
00 0602B28 5100 5000
Total sets = 1
5. -> isetGet "state == busy"
IP Address Type State Up Time TN HWID FWVsn SrcPort DstPort
------------------ ------- ----------- -------------
------------ ------------------ ------- ------- -------
47.11.215.68 i2004 busy 0 00:02:48 061-23 180060387602a766
00 0602B28 5100 5000
47.11.215.69 i2002 busy 0 00:02:30 061-22 18006038dd004166
00 0603B30 5100 5000
```

```
Total sets = 2
6.-> isetGet "state == busy && type != i2004"
IP Address Type State Up Time TN HWID FWVsn SrcPort DstPort
------------------ ------- ----------- -------------
------------ ------------------ ------- ------- -------
47.11.215.69 i2002 busy 0 00:03:09 061-22 18006038dd004166
00 0603B30 5100 5000
Total sets = 1
7.-> isetGet "fwvsn >= 0602b30"
IP Address Type State Up Time TN HWID FWVsn SrcPort DstPort
------------------ ------- ----------- -------------
------------ ------------------ ------- ------- -------
47.11.215.69 i2002 busy 0 00:04:27 061-22 18006038dd004166
00 0603B30 5100 5000
Total sets = 1
8.-> isetGet "ip < 47.11.215.69"
IP Address Type State Up Time TN HWID FWVsn SrcPort DstPort
------------------ ------- ----------- -------------
------------ ------------------ ------- ------- -------
47.11.215.68 i2004 busy 0 00:07:21 061-23 180060387602a766
00 0602B28 5100 5000
Total sets = 1
9. -> isetGet "fwvsn <= 0602b30"
IP Address Type State Up Time TN HWID FWVsn SrcPort DstPort
------------------ ------- ----------- -------------
------------ ------------------ ------- ------- -------
47.11.215.68 i2004 busy 0 00:08:47 061-23 180060387602a766
00 0602B28 5100 5000
Total sets = 1
10. -> isetGet "NAT == y"
Set Information
---------------
IP Address NAT Type RegType State Up Time Set-TN Regd-TN
HWID FWVsn UNIStimVsn SrcPort DstPort
---------------- ----- ---------- ------- ----------- ----
---------- ------------ ------------ --------------------
------- ---------- ------- -------
47.11.179.168 C i2004 Regular online 0 04:20:34 061-00
061-00 1800-6038b689e9-6600 0602B59 2.8 5100 5000
47.11.179.167 C i2004 Regular online 0 03:48:17 061-01
061-01 1800-60387602b9-6600 0602B59 2.8 5100 5000
Total sets = 2
```

isetHlocShow

Syntax: **`isetHlocShow “IPAddr” or “TN”`**

Print the PD related settings for an IP Phone (added by the PD/RL/CL feature). Enter either the IP Phone public IP address or TN as the parameter.

The output contains the telephone IP address, home location code (HLOC), Private Network Identifier (PNI), and customer number. Other parameters in the second row are the configured user preferences: preferred name match, log mode, new call indicator, name display format, and area codes.

```
-> isetHlocShow  "47.11.215.136"
dsetHlocShowByIP:  ip: 47.11.215.136, HLOC: , PNI: 10, cust_no: 0
pnm: 0, logMode: 0, newCallInd: 1, nameDispFormat: 1, AC1:, AC2:, AC3:.
```

isetInfoShow

Syntax: **`isetInfoShow “IPAddr” or “TN”`**

This command displays standard DHCP configuration information and other telephone information such as firmware version, hardware identification, and server information report. Run this command from the VGMC> prompt.

The following example shows command output.

```
isetInfoShow Report from Set (47.11.215.153)
FW Version: 0602B50
HWID: 18006038DD1ADB6600
MAC: 006038DD1ADB
VLAN ID: 124
Priority: 6
Set IP: 47.103.225.125
Subnet Mask: 255.255.255.0
Set Gateway: 47.103.225.1
LTPS IP: 47.103.247.224
Node IP: 47.103.247.224
Node ID: 4420 S1
Node IP: 47.103.247.229
Port: 4100 Action: 1
S2 Node IP: 47.103.247.229
Port: 4100 Action: 1
S5 Node IP: 47.103.247.229
Port: 4100
XAS: Net6

-> isetInfoShow "47.11.213.216"
value = 247380368 = 0xebeb990
->

isetInfoShow Report (DHCPConfig) from Set (47.11.213.216)

Terminal Type: i2004 Ph2
Firmware Version: 0604D48
Hardware ID: 18-000ae40acb81-6602
Release Number: 0x02
Manufacture Code: 0x000ae4
Color Code: 0x66
PEC Code: NTDU92AA
DHCP Server IP: 255.255.255.255
VLAN Priority: 6
VLAN ID: 65535
Set IP Address: 47.11.213.216
Set Subnet Mask: 255.255.255.0
Set IP Gateway Address: 47.11.213.1
Boot Mode: 11

isetInfoShow Report(Server Info) from Set (47.11.213.216)

Server 1 Server IP = 47.11.239.230
Port Number = 4100
Action = 1
Retry = 10
Server 2 Server IP = 0.0.0.0
Port Number = 0
Action = 1
Retry = 1
```

```
Server 3 Server IP = 47.11.239.235
Port Number = 5100
Action = 1
Retry = 0
```

isetNATShow

Syntax: **`isetNATShow “IPAddr” or “TN”`**

The isetNATShow addresses the need for additional information about IP Phones on a NAT device. Optionally, you can enter an IP Phone TN or public signaling IP address as a parameter, similar to the isetShow command.

```
VGMC>isetNatShow
signaling Media Public IP Addr:Port Public IP Addr:Port
(Private IP Addr:Port) (Private IP Addr:Port) NAT Type RTCP
Type Set-TN Reg-TN
--------------------- ------------------------
--------- ---- ------ ----------- ------------
47.11.217.28:5284 47.11.217.28:5289 Cone Yes i2004 61-09
61-09
(192.168.0.102:5000) (192.168.0.102:5200) 47.11.222.45
:6200 <No speech possible> Symmetric No i2004 64-03 64-09
(192.168.0.100:5000)
47.12.48.12:4398 47.12.48.12:4401 Unknown Yes i2050 65-01
65-01
(192.168.0.101:5000) (192.168.0.101:5200)
Total sets=3
```

The public and private IP address and ports are provided for the signaling and media. If the private signaling port is not available, it is not printed. The NAT type is indicated (as detected by the Port Mapping Discovery with the second ES). The output indicates whether RTCP signaling is supported; if “No”, then features that depend on RTCP may not work correctly. The feature that uses RTCP is the QoS Monitoring feature, otherwise known as Proactive Voice Quality Management (PVQM). For RTCP feature to work, the NAT device must assign the public RTCP port for a telephone to equal RTP+1 (that is, RTCP Public Port = RTP Public Port +1). In many cases, the NAT device assigns public ports sequentially, so the RTCP port is RTP +1 (for example 10002 for RTP and 10003 for RTCP). Thus, the PVQM feature works. If the NAT device does not assign the Public Ports sequentially, the PVQM feature cannot work.

Note:

The NAT device can assign the public port number for RTCP to be the public RTP port number +1, but then the mapping cannot be maintained because the wrong firmware is present (alarm ITG3057) or the device is an undetected symmetric NAT (marked as Unknown NAT). The availability of RTCP signaling still shows as "Yes" in these cases."

Enter the isetNATShow command at the CLI of any card in a VGMC node along with the TN or public IP address of a particular IP Phone to display the telephone information, along with the identification of the card with which the IP Phone is registered. This data is useful when you need to identify which card to enable a message monitor on, or connect a sniffer to, when you debug a particular IP Phone problem, as shown in the following example.

```
VGMC>isetNatShow “47.11.222.45”
value = 0 = 0x0
VGMC>
signaling Media Public IP Addr:Port Public IP Addr:Port
(Private IP Addr:Port) (Private IP Addr:Port) NAT Type RTCP
Type Set-TN Reg-TN
---------------------- ------------------------
--------- ---- ------ ----------- -------------
->Found on Card TN 002-00 , ELAN IP 47.11.214.52, TLAN
IP 47.100.1.2: 47.11.222.45:6200 <No speech possible>
Symmetric No i2004 64-03 64-09 (192.168.0.100:5000)
VGMC>
```

This command also handles the same public IP address that appears for multiple phones (one NAT device has multiple phones on it, as shown in the following example.

```
VGMC> isetNATShow "47.11.213.114"
signaling Media Public IP Addr:Port Public IP Addr:Port
(Private IP Addr:Port) (Private IP Addr:Port) NAT Type RTCP
Type Set-TN Regd-TN
---------------------------- ---------------------------
- --------- ---- ------------ ------------- ------------
->Found on Card TN 002-00 , ELAN IP 47.11.214.52, TLAN
IP 47.100.1.2: 47.11.213.114:1224 47.11.213.114:1698
Cone Y i2004 061-01 061-01 (192.168.0.102:5000)
(192.168.0.102:5200) ->Found on Card TN 009-00 , ELAN IP
47.11.217.21, TLAN IP 47.11.215.185: 47.11.213.114:1225
47.11.213.114:1700 Cone Y i2004 061-00 061-00
(192.168.0.101:5000) (192.168.0.101:5200)
```

isetReset

Syntax: **isetReset "phoneIPAddr" or "l s c u"**

Reset a single IP Phone. Specify the IP Phone by either its IP address (phoneIPAddr) or VTN (l s c u). The IP address is the public signaling IP address of the telephone.

The following example shows both uses of the command.

```
VGMC> isetReset "192.168.1.141"
value = 0 = 0x0
VGMC>
FEB 16 15:32:40 tShell: Info Reset i2004 set with IP 192.168.1.141
FEB 16 15:32:58 tCSV: Info 192.168.1.141   Connecting to node 1, TN: 61.1, 0x6005
FEB 16 15:33:00 tRDP: Warning 192.168.1.141   Connection restarted, cid = 0x33cc350
FEB 16 15:33:00 tVTM: Notice 192.168.1.141   Unregistered, terminal = 0x3a876fc,
device = 0x33cb904
FEB 16 15:33:00 tSET: Info Terminal offline 192.168.1.141   TN 0x0000
FEB 16 15:33:01 tVTM: Info ITS5008 Terminal connection status: 192.168.1.141 ok(20)
FEB 16 15:33:01 tSET: Info 192.168.1.141   TN 61-01 Registered with M1

VGMC> isetReset 61-01
Invalid input: isetReset "l s c u" or isetReset "IP"
Example:  isetReset "61 0 0 1" or isetReset "192.168.1.2" value = 59 = 0x3b = ';'
VGMC> isetReset "61 1"
value = 0 = 0x0
VGMC>
FEB 16 15:35:10 tShell: Info Reset i2004 set with TN 0x6005: 61 1 ...
FEB 16 15:35:32 tSET: Info 192.168.1.141   TN 61-01 Registered with M1
```

If the IP address identifies multiple IP Phones (for example, multiple IP Phones are on a NAT that shares the same public IP address), then an error message prints. This message indicates more than one IP Phone with the IP address and recommends using the isetReset “TN” command.

The following example demonstrates the isetReset command output for cases where there are two IP Phones with the same public IP address.

```
 -> isetReset "47.11.215.183"

WARNING: There are 2 IP Phones that use the public IP address of 47.11.215.183
Please reset the Internet Telephone using the TN: isetReset “TN”.
```

isetResetAll

Syntax: **`isetResetAll`**

Reset all IP Phones registered with theTPS.

```
VGMC> isetResetAll
value = 0 = 0x0
VGMC>
FEB 16 15:38:25 tShell: Info Reset all registered i2004 set
```

isetScpwQuery

Syntax: **`isetScpwQuery “IPAddr” or “TN”`**

Print the status of the station control password (SCPW). This password is used for the VO and PD VGMC features. Enter the IP Phone public IP address or TN as the command parameter.

```
-> isetScpwQuery "47.11.215.136"
value = 0 = 0x0
-> 21/01/04 14:12:05 LOG0006 SET: SCPW Query Status (tn 61-1): Defined

-> isetScpwQuery "61 1"
value = 0 = 0x0
-> 21/01/04 14:12:26 LOG0006 SET: SCPW Query Status (tn 61-1): Defined
```

isetScpwVerify

Syntax: **`isetScpwVerify “IPAddr” or “TN”, “password”`**

Verify the entered SCPW matches what is currently configured. Enter the IP Phone public IP address or TN, and the existing SCPW as the command parameters.

```
-> isetScpwVerify "147.11.215.136","1234"
value = 0 = 0x0
-> 22/01/04 15:21:08 LOG0006 SET: SCPW Verify Status (tn 61-1): OK
```

isetScpwModify

Syntax: **`isetScpwModify “IPAddr” or “TN”, “password”`**

Modify the SCPW from the VGMC application rather than from the CS 1000. Enter the IP Phone public IP address or TN and the new SCPW as the command parameters.

```
->isetScpwModify "147.11.215.136","6100"
value = 0 = 0x0
-> 22/01/04 15:23:45 LOG0006 SET: SCPW Modify Status (tn 61-1): OK
```

isetSecGet

Use this command to obtain a list of IP phones based on a given query. The command uses one input parameter that is an ascii string representation of a set of expressions linked by &&. (Logically “And”ed together) Each expression consists of three parts: opcode1, operator and opcode2. Currently, only the following operators are handled: ==, !=, <, >, <=, and >=. Also, opcode1 must be one of the fields in the isetSecShow command output, and opcode2 must be a well-formatted value. (Format depends on opcode1) Note; opcode1 and opcode2 are not case-sensitive.

There are four types for opcode1:

- TN
- IP
- Encryption: For the expression Encryption==x, x can be:
    - INSEC: for insecure registered IP Phones
    - USEC: for UNIStim secure registered IP Phones
    - DTLS: for DTLS registered IP Phones
- DTLSCap: For the expression DTLSCap==x, x can be:
    - YES: for DTLS-capable IP Phones
    - NO: for DTLS-nonCapable IP Phones

Syntax: **`isetSecGet <queryString>`**

```
[admin2@bvw0 ~]$ isetSecGet “DTLSCap == Yes && Encryption
== DTLS”=== TPS ===
IP Address Type Set-TN Encryption Action DTLS Cap.
------------------ ---------- ------------- ------------
-------- ----------
192.168.34.194 1140 096-00-00-29 DTLS 7 YES
192.168.34.195 1210 096-00-00-30 DTLS 7 YES
192.168.34.196 1140 096-00-00-31 DTLS 7 YES
192.168.34.197 1140 096-00-00-32 DTLS 7 YES
Total sets = 4
```

isetSecShow, isetSecShowByTN, isetSecShowByIP

These are the security versions of the iset show commands. See the next section for info on the regular iset show (isetShow) commands.

These commands list every IP Phone registered with the TPS. For each telephone, IP address, type of IP Phone, virtual TN, current signalling encryption, action byte and DTLS capability are shown. The isetSecShowByTN and isetSecShowByIP commands display the output list in order by TN and IP address, respectively, while the isetSecShow command lists the IP Phones in order registration.

Enter the isetSecShow command along with the TN or IP address to print information related to a particular IP Phone.

The Encryption field indicates the type of signalling encryption:

- INSEC: Insecure registration
- USEC: UNIStim secure registration (over SMC)
- DTLS: DTLS registration

Syntax: **`isetSecShow [IP|TN] isetSecShowByTN isetSecShowByIP`**

```
[admin2@bvw0 ~]$ isetSecShow

=== TPS ===
Set Information
---------------
IP Address     Type   Set-TN       Encryption Action DTLS Cap.
-------------- ------ ------------ ---------------------------
192.168.34.193 2004P2 096-00-00-27  INSEC             1    NO
192.168.34.192 2004P2 096-00-00-28  INSEC             1    NO
192.168.34.195 1210   096-00-00-33  DTLS              7   YES
192.168.34.194 1140   096-00-00-29  DTLS              7   YES
192.168.34.196 1140   096-00-00-31  DTLS              7   YES
192.168.34.198 1140   096-00-00-30  INSEC             1    NO
192.168.34.197 1140   096-00-00-34  DTLS              7   YES
192.168.34.199 1140   096-00-00-32  INSEC             1    NO

Total sets = 8

[admin2@bvw0 ~]$  isetSecShowByIP

=== TPS ===
Set Information
---------------
IP Address     Type   Set-TN       Encryption Action DTLS Cap.
```

```
-------------- ------ ------------ ---------------------------
192.168.34.192 2004P2 096-00-00-28  INSEC             1    NO
192.168.34.193 2004P2 096-00-00-27  INSEC             1    NO
192.168.34.194 1140   096-00-00-29  DTLS              7   YES
192.168.34.195 1210   096-00-00-33  DTLS              7   YES
192.168.34.196 1140   096-00-00-31  DTLS              7   YES
192.168.34.197 1140   096-00-00-34  DTLS              7   YES
192.168.34.198 1140   096-00-00-30  INSEC             1    NO
192.168.34.199 1140   096-00-00-32  INSEC             1    NO

Total sets = 8

[admin2@bvw0 ~]$ isetSecShowByTN

=== TPS ===
Set Information
--------------
IP Address     Type   Set-TN       Encryption Action DTLS Cap.
-------------- ------ ------------ ---------------------------
192.168.34.193 2004P2 096-00-00-27  INSEC             1     NO
192.168.34.192 2004P2 096-00-00-28  INSEC             1     NO
192.168.34.194 1140   096-00-00-29  DTLS              7    YES
192.168.34.198 1140   096-00-00-30  INSEC             1     NO
192.168.34.196 1140   096-00-00-31  DTLS              7    YES
192.168.34.199 1140   096-00-00-32  INSEC             1     NO
192.168.34.195 1210   096-00-00-33  DTLS              7    YES
192.168.34.197 1140   096-00-00-34  DTLS              7    YES

Total sets = 8
```

isetSecUpdate

This command is used for reconfiguration of S1/S2 ports and action bytes on the phones based on a given query.

Syntax:

`isetSecUpdate <queryString><ServerID><Action><port>`

Where:

- the query string is a sequence of expressions, linked together by &&, each expression consists of three parts: opcode1, operator and opcode2. The query string is the same as defined in the isetSecGet command
- ServerID can be either 1 or 2 to indicate whether S1 or S2 settings have to be updated
- Action is the action byte that can be 1, 6 or 7. Port is the port number to be set
- default port value is 4100 if Action is 1 or 6, and 4101 if Action is 7

```
[admin2@bvw0 ~]$ isetSecUpdate "Encryption == INSEC" 1 7 4101
=== TPS ===
Updating sets...
----------------
IP Address     Type   Set-TN       Encryption Action DTLS Cap.
-------------- ------ ------------ ---------------------------
192.168.25.117 1140   096-00-00-27  INSEC           1 -> 7 YES
192.168.25.118 1140   096-00-00-28  INSEC           1 -> 7 YES
192.168.25.
```

```
168.25.120     1120   096-00-00-30  INSEC           1 -> 7 YES
192.168.25.121 1210   096-00-00-31  INSEC           1 -> 7 YES
192.168.25.122 1220   096-00-00-32  INSEC           1 -> 7 YES

Total sets updated = 6
```

isetShow, isetShowByTN, isetShowByIP

Syntax: **`isetShow isetShowByTN isetShowByIP`**

These commands list every IP Phone registered with the TPS. For each telephone, the IP Phone status, type of registration, time up (registered to TPS), virtual TN, MAC address, type of IP Phone, firmware and UNIStim signaling versions, and the RUDP ports for the IP Phone and TPS are shown. The isetShowByTN and isetShowByIP commands display the output list in order by TN and IP address, respectively, while the isetShow command lists the IP Phones in order of registration.

Enter the isetShow command at the CLI of any card in a VGMC node along with the TN or IP address of a particular IP Phone to print this IP Phone information, along with the identification of the card with which the IP Phone is registered. This is useful when you need to identify which card to enable a message monitor on, or to connect a sniffer to, when you debug a particular IP Phone problem. You can also achieve this by using the IDU command from LD 32 on the Call Server, if you know the TN.

If you enter a particular IP address or TN but no card responds with the information, an error message prints after the "wait for card responses" timeout expires.

The regType field indicates the type of registration:

- Regular: default registration; non-branch office Internet terminal registered with its "home" TPS (the TPS defined by the telephone S1/S2 configuration).
- Virtual: virtual office registration; Internet terminal "home" TPS is another system but its user has invoked the virtual office feature causing the telephone to register on this TPS.
- Branch: branch office Internet terminal registered at the main office. The main office TPS displays this type of registration.
- Local: branch office IP Phone registered at the branch office. Internet terminal is in local mode; the branch office TPS displays this type of registration.

You can check the Up Time to see if an IP Phone or group of IP Phones is resetting (the Up Time is less than the other telephones). This may indicate a network problem if a group of phones in a specific subnet reboot at about the same time.

Ensure that the firmware version is the same on all IP Phones. Compare the version shown to the output of the umsPolicyShow command.

An IP Phone MAC address is in the middle of the Hardware ID, separated by dashes from the remainder of the Hardware ID.

A single letter indicates the NAT type detected for an IP Phone. The NAT column value is valid when the State column indicates the telephone is registered to the CS 1000. Possible values are: C = Cone NAT S = Symmetric NAT U = Unknown: behind a NAT of unknown type (response received from only ES1) P - Pending: waiting on response from the telephone or the telephone never received a response from ES1 " " (space) = the IP Phone is not behind any NAT (normal case)

IP Phones with NAT type S are unregistered from the CS 1000.

```
VGMC> isetShow
IP Address Type RegType State Up Time TN HWID FWVsn
UNIStimVsn SrcPort DstPort
------------------ ------- ------- -----------
------------- ----------- ------------------- -------
---------- ------ -------
10.1.1.5 i2004 Regular online 0 02:03:17 061-01
180060387641f36600 0602B39 2.5 5100 5000
10.1.1.4 i2004 Regular online 0 00:01:00 061-00
180060387641c16600 0602B39 2.5 5100 5000
Total sets = 2
value = 0 = 0x0
VGMC> isetShow "47.11.213.114"
IP Address Type RegType State Up Time TN HWID FWVsn
UNIStimVsn SrcPort DstPort
------------------ ------- ------- -----------
------------- ----------- ------------------- -------
---------- ------ -------
10.1.1.5 i2004 Regular online 0 02:03:17 061-01
180060387641f36600 0602B39 2.5 5100 5000
10.1.1.4 i2004 Regular online 0 00:01:00 061-00
180060387641c16600 0602B39 2.5 5100 5000
> Found on Card TN 010-00 , ELAN IP 47.11.216.48, TLAN IP
47.11.215.53
47.11.213.114 i2001 Regular online 0 21:37:14 061-04 061-04
1800-oae402e283-6602 0604A307 5100 5000
> Found on Card TN 009-00 , ELAN IP 47.11.217.21, TLAN IP
47.11.215.185
47.11.113.114 C i2004 Regular online 0 04:20:34 061-00
061-00 1800-6038b689a9-6600 0602B59 5100 6123
VGMC> isetShow "61 1"
value = 0 = 0x0
VGMCIP
Address Type RegType State Up Time TN HWID FWVsn
UNIStimVsn SrcPort DstPort
------------------ ------- ------- -----------
------------- ----------- ------------------- -------
---------- ------ -------
10.1.1.5 i2004 Regular online 0 02:03:24 061-01
180060387641f36600 0602B39 2.5 5100 5000
VGMC> isetShow "61 23"
value = 0 = 0x0
VGMC>
**** Node Information Request time out Alert ****
Request #1 Type: get set info
Variables[1]: TN 061-23
```

itgA07TraceHelp

Syntax: **`itgA07TraceHelp`**

This command displays the CLI commands and parameters.

itgA07TraceSettings

Syntax: **`itgA07TraceSettings`**

Print the current trace settings.

itgA07TraceSetOutput

Syntax: **`itgA07TraceSetOutput trace_output, "file_name"`**

This command assigns the output destination for the trace tool. The parameter trace_output is an integer value specifying the trace output destination: 1 = TTY 2 = SYSLOG 3 = File 4 = File and TTY

The file_pathname is a string encapsulated in quotation marks that specifies the file to output to if trace_output = 3 or 4. You can enter the entire path name, or only the file name (in which case the default path is C:/file_name).

```
->  itgA07TraceSetOutput 1, "trace.txt"
value = 0 = 0x0
```

itgA07TraceOff

Syntax: **`itgA07TraceOff chNum`**

This command turns off the trace for the specific channel number chNum.

itgA07TraceAllOff

Syntax: **`itgA07TraceAllOff`**

This command turns off the trace for all channels.

itgA07TraceOn

Syntax: **`itgA07TraceOn chNum`**

This command turns on the trace for one channel.

```
 -> itgA07TraceOn 10 value = 0 = 0x0
```

itgAlarmTest

Syntax: **`itgAlarmTest alarm`**

Create and send a dummy SNMP alarm for one or more ITGnnnn alarms. To send dummy SNMP alarm messages for all ITS alarms, assign *alarm* a value less than 0. To send a dummy SNMP alarm message for the specified alarm, assign *alarm* a value from 0 to 35.

```
VGMC> itgAlarmTest 35
value = 0 = 0x0 VGMC>
FEB 16 15:58:11 tShell: Notice ITG6035 Encountered an unexepected open DSP chann el,
closed it: 11 (202)
VGMC>
```

itgCardShow

Syntax: **`itgCardShow`**

Display the card role, TLAN IP addresses, system information and location, status, and up time.

The following table describes the data parameters printed by this command.

Table 41: Data output

Parameter	Description
Leader IP	An IP address on the TLAN interface. If Leader IP is 0.0.0.0, either the BOOTP.TAB file is missing or does not parse properly. Ensure that the file is in the CONFIG directory. Look for alarms or error messages on the TTY console.
Card IP	An IP address on the TLAN interface. If card IP is 0.0.0.0, the card cannot locate or communicate with the BOOTP server or Leader card. Ensure that the Leader card has the Follower entry with the correct management MAC address in the BOOTP.TAB file. If correct, check the TLAN and ELAN cable connections. Next, check for errors or alarms on the TTY console and on MAT.
ELAN (InIsa) stat ELAN (ixpMac1) stat	Interface speed and carrier status of the ELAN interface.
TLAN (InPci) stat TLAN (ixpMac0)	Interface speed and carrier status of the TLAN interface. If the carrier is not OK for an interface, check the cable and switch connected to that interface.
Card State	ENBL = The card is configured and operational DSBL = The card is configured but out of service. Enable from Call Server LD 32. UNEQ = The card is not configured in the Call Server.
Card TN	The VGMC TN prints. This field is omitted for the Signaling Server.

The following example shows output on an ITG-P card.

```
VGMC> itgCardShow
Index        : 1
Type         : EXUT
Role         : Leader
Node         : 888
Leader IP    : 47.11.254.2
Card IP      : 47.11.254.3
Card TN      : Slot 20
Card State   : ENBL
Uptime       : 0 days, 7 hours, 59 mins, 20 secs  (28760 secs)
Codecs       : G711Ulaw(default), G711Alaw, G729AB, G723_5, G711CC, T38FAX
ELAN (lnIsa) stat : 10 Mbps, Half duplex (Carrier OK)
```

```
TLAN (lnPci) stat : 100 Mbps, Full duplex  (Carrier OK)
value = 1 = 0x1
```

Example of the data printed on the SMC:

```
-> itgCardShow
Index        : 2
Type         : EXUT
Role         : Leader
Node         : 123
Leader IP    : 47.11.215.216
Card IP      : 47.11.215.214
Card TN      : Slot 3
Card State   : ENBL
Uptime       : 0 days, 0 hours, 9 mins, 34 secs  (574 secs)
Codecs       : G711Ulaw(default), G711Alaw, G729AB, G711CC, T38FAX ELAN (ixpMac1)
stat: 10 Mbps, Half duplex  (Carrier OK)
TLAN (ixpMac0) stat: 100 Mbps, Full duplex  (Carrier OK)
```

The following example shows output printed on the Signaling Server.

```
-> itgCardShow
Index        : 1
Role         : Leader
Node         : 777
Leader IP    : 47.11.249.105
Card IP      : 47.11.249.106
Uptime       : 0 days, 0 hours, 9 mins, 10 secs  (550 secs)
Codecs       : G711Ulaw(default), G711Alaw, G729A, G729AB, G723_5, G711CC, T38FAX
value = 1 = 0x1
```

itgChanStateShow

Syntax: **`itgChanStateShow`**

List the state (busy, idle, disabled, or unequipped) of all channels on a VGMC. You can use this command to check if there are active calls on the card, or to see which channel is being used by the call. A channel is marked busy when a call is active on it.

```
VGMC> itgChanStateShow
Channel  0 : Busy
Channel  1 : Disabled
Channel  2 : Busy
Channel  3 : Unequipped
Channel  4 : Idle
Channel  5 : Idle
...  (one line per card channel)
Channel 22 : Idle
Channel 23 : Idle

value = 1 = 0x1
```

itgMemShow

Syntax: **itgMemShow**

Print general information about the memory available on the VGMC. On the Signaling Server, this command displays the same information as the memShow command. This command displays free memory and the blocks it is composed of, memory in use, and cumulative allocated memory.

```
VGMC> itgMemShow
status   bytes    blocks   avg block  max block
------ --------- -------- ---------- ----------
current
free  49448328       77     642186  49292668
alloc  12667292     2395       5289         -
cumulative
alloc  40264460   311809        129         -
value = 0 = 0x0

VGMC>
```

itgMsgQShow

Syntax: **itgMsgQShow**

Print general information about the various message queues used by the VGMC application:

- queue ID
- task in the queue
- number of messages sent over the queue
- number of lost messages

The following example shows command output on the ITG-P card.

```
-> itgMsgQShow
|QID |Nbr of Use|Pipe FD|Queue Name |Pipe Name |Desc(h) |Nbr Msgs
|High Mark |Lost Msgs |
+-----+----------+-------+------------+----------------+
-----------+----------+----------+---------+
|6  |1 |23 |/msgq.6  |/pipe/srv.6  |0x1870afc |0 |1 |0 |
|30 |1 |-1 |/msgq.30 |/pipe/srv.30 |0x17daebc |0 |1 |0 |
|31 |1 |-1 |/msgq.31 |/pipe/srv.31 |0x18703c8 |0 |2 |0 |
|32 |1 |-1 |/msgq.32 |/pipe/srv.32 |0x18702c0 |0 |35|0 |
|33 |1 |-1 |/msgq.33 |/pipe/srv.33 |0xfb3c4c  |0 |3 |0 |
|35 |1 |-1 |/msgq.35 |/pipe/srv.35 |0x1856ad8 |0 |2 |0 |
|38 |1 |46 |/msgq.38 |/pipe/srv.38 |0x17c4778 |0 |3 |0 |
|39 |1 |38 |/msgq.39 |/pipe/srv.39 |0x1831958 |0 |2 |0 |
|40 |1 |-1 |/msgq.40 |/pipe/srv.40 |0xfb79d8  |0 |1 |0 |
|41 |1 |-1 |/msgq.41 |/pipe/srv.41 |0xfb7e5c  |0 |2 |0 |
|42 |1 |-1 |/msgq.42 |/pipe/srv.42 |0x17c5ca0 |0 |2 |0 |
|43 |1 |-1 |/msgq.43 |/pipe/srv.43 |0x183eb44 |0 |30|0 |
|57 |1 |-1 |/msgq.57 |/pipe/srv.57 |0xfb8ec0  |0 |0 |0 |

value = 2079 = 0x81f
->

OCT 24 13:37:51 tShell: Info
OCT 24 13:37:51 tShell: Info +----------+----------+----------+
OCT 24 13:37:51 tShell: Info |Category  |Cat ID(h) |MsgQ ID(d)|
OCT 24 13:37:51 tShell: Info +----------+----------+----------+
OCT 24 13:37:51 tShell: Info |LOG       |0xc00     |3         |
OCT 24 13:37:51 tShell: Info |RUDP      |0x1800    |6         |
OCT 24 13:37:51 tShell: Info |MYCAT     |0x2000    |8         |
OCT 24 13:37:51 tShell: Info |VTM       |0x7800    |30        |
OCT 24 13:37:51 tShell: Info |VTI       |0x7c00    |31        |
OCT 23 13:37:51 tShell: Info |DSET      |0x8000    |32        |
OCT 23 13:37:51 tShell: Info |VGW       |0x8400    |33        |
OCT 23 13:37:51 tShell: Info |MAM       |0x8c00    |35        |
OCT 23 13:37:51 tShell: Info |TPS       |0x9800    |38        |
OCT 23 13:37:51 tShell: Info |ELC       |0x9c00    |39        |
OCT 23 13:37:51 tShell: Info |UMSClientS|0xa000    |40        |
OCT 23 13:37:51 tShell: Info |UMSServerS|0xa400    |41        |
OCT 23 13:37:51 tShell: Info |CSV       |0xa800    |42        |
OCT 23 13:37:51 tShell: Info |OMM       |0xac00    |43        |
OCT 23 13:37:51 tShell: Info |TPSAR     |0xe000    |56        |
OCT 23 13:37:51 tShell: Info |UMSFwBk   |0xe400    |57        |
OCT 23 13:37:51 tShell: Info +----------+----------+----------+
->
```

Example SMC output:

```
     -> itgMsgQShow
|QID |Nbr of Use|Pipe FD|Queue Name |Pipe Name |Desc(h) |Nbr
Msgs |High Mark |Lost Msgs |
+-----+---------+-------+-----------+--------------+
----------+---------+---------+----------+
|6  |1 |20 |/msgq.6  |/pipe/srv.6  |0x2c03f3c |0 |2 |0 |
|30 |1 |-1 |/msgq.30 |/pipe/srv.30 |0x2b68c78 |0 |1 |0 |
|31 |1 |-1 |/msgq.31 |/pipe/srv.31 |0x2b62248 |0 |1 |0 |
|32 |1 |-1 |/msgq.32 |/pipe/srv.32 |0x2b58408 |0 |1 |0 |
|33 |1 |-1 |/msgq.33 |/pipe/srv.33 |0x23166e0 |0 |3 |0 |
|35 |1 |-1 |/msgq.35 |/pipe/srv.35 |0x2be8e84 |0 |2 |0 |
|38 |1 |44 |/msgq.38 |/pipe/srv.38 |0x2b4b2cc |0 |8 |0 |
|39 |1 |34 |/msgq.39 |/pipe/srv.39 |0x2bbff54 |0 |1 |0 |
|40 |1 |-1 |/msgq.40 |/pipe/srv.40 |0x231e8c4 |0 |1 |0 |
|41 |1 |-1 |/msgq.41 |/pipe/srv.41 |0x2343e94 |0 |4 |0 |
|42 |1 |-1 |/msgq.42 |/pipe/srv.42 |0x2b53a88 |0 |5 |0 |
|43 |1 |-1 |/msgq.43 |/pipe/srv.43 |0x2bcd160 |0 |2 |0 |
|56 |1 |-1 |/msgq.56 |/pipe/srv.56 |0x2b4c7e0 |0 |0 |0 |
|57 |1 |-1 |/msgq.57 |/pipe/srv.57 |0x23452f8 |0 |0 |0 |
value = 100 = 0x64 = 'd'
->
OCT 24 13:49:34 tShell: Info
OCT 24 13:49:34 tShell: Info +----------+----------+----------+
OCT 24 13:49:34 tShell: Info |Category  |Cat ID(h) |MsgQ ID(d)|
OCT 24 13:49:34 tShell: Info +----------+----------+----------+
OCT 24 13:49:34 tShell: Info |LOG       |0xc00     |3         |
OCT 24 13:49:34 tShell: Info |RUDP      |0x1800    |6         |
OCT 24 13:49:34 tShell: Info |MYCAT     |0x2000    |8         |
OCT 24 13:49:34 tShell: Info |VTM       |0x7800    |30        |
OCT 24 13:49:34 tShell: Info |VTI       |0x7c00    |31        |
OCT 24 13:49:34 tShell: Info |DSET      |0x8000    |32        |
OCT 24 13:49:34 tShell: Info |VGW       |0x8400    |33        |
OCT 24 13:49:34 tShell: Info |MAM       |0x8c00    |35        |
OCT 24 13:49:34 tShell: Info |TPS       |0x9800    |38        |
OCT 24 13:49:34 tShell: Info |ELC       |0x9c00    |39        |
OCT 24 13:49:34 tShell: Info |UMSClientS|0xa000    |40        |
OCT 24 13:49:34 tShell: Info |UMSServerS|0xa400    |41        |
OCT 24 13:49:34 tShell: Info |CSV       |0xa800    |42        |
OCT 24 13:49:34 tShell: Info |OMM       |0xac00    |43        |
OCT 24 13:49:34 tShell: Info |TPSAR     |0xe000    |56        |
OCT 24 13:49:34 tShell: Info |UMSFwBk   |0xe400    |57        |
OCT 24 13:49:34 tShell: Info +----------+----------+----------+
```

The following example shows command output on the ITG-P card.

```
-> itgMsgQShow
0xaada058 (tShell):
0xaada058 (tShell): +----------+----------+----------+
0xaada058 (tShell): |Category  |Cat ID(h) |MsgQ ID(d)|
0xaada058 (tShell): +----------+----------+----------+
0xaada058 (tShell): |LOG       |0xc00     |3         |
0xaada058 (tShell): |RUDP      |0x1800    |6         |
0xaada058 (tShell): |MYCAT     |0x2000    |8         |
0xaada058 (tShell): |MAM       |0x8c00    |35        |
0xaada058 (tShell): |ELC       |0x9c00    |39        |
0xaada058 (tShell): |OMM       |0xac00    |43        |
0xaada058 (tShell): |GKNPM     |0xc400    |49        |
0xaada058 (tShell): |GKHTTP    |0xc800    |50        |
0xaada058 (tShell): |GKDBM     |0xcc00    |51        |
0xaada058 (tShell): |GKOMM     |0xd000    |52        |
0xaada058 (tShell): |HTTP      |0xd400    |0         |
0xaada058 (tShell): |HTTP      |0xd800    |0         |
0xaada058 (tShell): +----------+----------+----------+

|QID |Nbr of Use|Pipe FD|Queue Name |Pipe Name |Desc(h) |Nbr
Msgs |High Mark |Lost Msgs |
+-----+----------+-------+------------+---------------+
----------+----------+----------+----------+
|6  |1 |20 |/msgq.6  |/pipe/srv.6  |0xba10ef4 |0 |10|0 |
|35 |1 |-1 |/msgq.35 |/pipe/srv.35 |0xb9f51a0 |0 |1 |0 |
|39 |1 |28 |/msgq.39 |/pipe/srv.39 |0xb9df6e4 |0 |1 |0 |
|43 |1 |-1 |/msgq.43 |/pipe/srv.43 |0xb9f04a4 |0 |1 |0 |
|49 |1 |29 |/msgq.49 |/pipe/srv.49 |0xb89528c |0 |1 |0 |
|51 |1 |-1 |/msgq.51 |/pipe/srv.51 |0xb9c03b0 |0 |40|0 |
|52 |1 |-1 |/msgq.52 |/pipe/srv.52 |0xb9a2898 |0 |1 |0 |

value = 100 = 0x64 = 'd'
```

itgPLThreshold

Syntax: **`itgPLThreshold threshold`**

Assign the threshold for packet loss which, if exceeded during a call, generates an alarm at the end of the call. The parameter threshold is a value from 1 to 1000 in units of a tenth of a percent. The default threshold is 10 (that is, 1 percent).

When a call through the VGMC gateway is released, the application compares the number of packets lost with the total number of packets. The Transmit (TX) and Receive (RX) streams (to and from the terminal, respectively) are checked individually. If the percentage exceeds the configured threshold value, an alarm occurs.

The alarm can be reported from two tasks: tRTP logs packet loss for data through the gateway, and tVTM logs packet loss reported by the IP Phone. The alarm shows the channel number, the percentage of packets lost, the direction of the packet stream (RX is IP Phone to VGMC), the IP Phone IP address and the alarm cause field (26 is alarmCauseCongestion).

```
VGMC> itgPLThreshold 50
value = 0 = 0x0
VGMC>
SEP 22 11:17:48 tRTP: Warning ITG4028 Voice packet loss: 0 6.4% rx 47.147.75.81 (26)
SEP 22 11:17:50 tVTM: Warning ITG4028 Voice packet loss: 0 6.6% tx 47.147.75.81 (26)
```

itgShell

Syntax: **`itgShell`**

Returns to the VGMC command line interface prompt (VGMC>). This command applies to VGMC only and is not supported on MC32S.

```
-> itgShell
VGMC>
```

itsAlarmTest

Syntax: **`itsAlarmTest alarm`**

Creates and sends a dummy SNMP alarm for one or more ITSnnnn alarms.

To send dummy SNMP alarm messages for all ITS alarms, assign *alarm* a value less than 0. To send a dummy SNMP alarm message for the specified alarm, assign *alarm* a value from 0 to 10.

```
VGMC> itsAlarmTest 2
value = 0 = 0x0
VGMC>
FEB 16 15:51:29 tShell: Notice ITS6002 Connect service activation: Call server i s
upside down (202)
VGMC>
```

lastResetReason

Syntax: **`lastResetReason`**

Display the reason for the last reset of the VGMC.

The following table describes the data parameters printed by this command.

Table 42: Data output

Parameter	Description
Reboot command issued	Output after card reset using the CLI command cardReboot.
Watchdog Timer Expired	Output after card reset due to watchdog timer expiration.
Manual reset	Output after card reset after faceplate reset button is pressed or after a power cycle to the card.
Unknown	Output after card reset because the card firmware does not support the reset reason, or the reset reason code is corrupt.

```
VGMC> lastResetReason
Last Reset Reason: Unknown
value = 1 = 0x1
VGMC>
```

ll

Syntax: **`ll`**

List the contents of the current directory with timestamp and size information. In addition to comparing file timestamps, this command is useful to check for zero-length files, which may indicate disk corruption.

```
-> ll
size          date       time       name
--------       ------     ------     --------
512    JAN-01-1996  12:06:34   .                 <DIR>
512    JAN-01-1996  12:06:34   ..                <DIR>
1001    JAN-01-1996  12:15:14   CONFIG.INI
958    JUL-26-2000  15:07:52   CONFIG.BAK
225    JAN-01-1996  16:08:54   BOOTP.TAB
225    JAN-01-1996  16:12:50   BOOTP.BAK
197    JAN-01-1996  14:25:38   UMS.INI
```

logConsoleOff, logConsoleOn

Syntax: **`logConsoleOff logConsoleOn`**

These commands control message printing to the VGMC Maintenance serial port. The commands do not apply to the Signaling Server. The current status of the Maintenance port logging is shown by the logShow command output for Console logging. The default is On.

The following example shows these commands in use.

```
 VGMC> logConsoleOff
Console logging disabled
value = 25 = 0x19

VGMC> logConsoleOn
Console logging enabled
value = 24 = 0x18
```

logFileOff, logFileOn

Syntax: **`logFileOff logFileOn`**

These commands control the log message output to the SYSLOG.n file. The commands do not apply to the Signaling Server. The current status of the file logging is shown by the logShow command output for File logging. The default is On.

logPrintOff, logPrintOn

Syntax: **`logPrintOff, logPrintOn`**

These commands control message printing to the active logon session. The commands do not apply to the Signaling Server. The active session is wherever the user has logged on to, that is, the serial port (console) or a Telnet session. The current status of the active session logging is shown by the logShow command output for TTY logging. The default is On.

The following example shows how only the active session is disabled when the user logs in through Telnet.

```
VGMC> logPrintOff
Log message printing disabled
value = 30 = 0x1e
VGMC>

VGMC> logPrintOn
Log message printing enabled
value = 29 = 0x1d
```

The following example demonstrates how both the console and active session logging are disabled when the user logs in through the VGMC serial port (console).

```
VGMC> logPrintOff
Console logging disabled
Log message printing disabled
value = 30 = 0x1e

VGMC> logPrintOn
Console logging enabled
Log message printing enabled
value = 29 = 0x1d
```

logShow

Syntax: **logShow**

Print the current status of the message printing for all tasks on the VGMC. Although you can run the command on the Signaling Server, it does not provide the same kind of information. Therefore, Avaya recommends that you use the syslogShow command instead.

When the Level is none, the task is not registered with the syslog function. The parameter Syslog file is the SYSLOG file used for output. Use this command with the syslogLevelSet command.

The following example shows command output on the ITG-P card.

```
-> logShow
TTY logging:       on
File logging:      off
Console logging:   on
Syslog file:       /C:/log/SYSLOG.0
Space remaining:   0
Excption file:     /C:/log/EXCPLOG.1
Space remaining:   0

Task          Level
-------------------- -------
tExcTask             none
tLogTask             Info
tAioWait             none
tAioIoTask1          none
tAioIoTask0          none
tPcmciad             none
tTffsPTask           none
tNetTask             Info
tTelnetd             none
tPortmapd            none
tRdbTask             none
tFtpdTask            none
tTftpdTask           none
tSnmpd               none
tSyslogd             Info
tMonTask             none
tPxTimer             none
tbootpd              Info
tSNTPC               Info
baseMMintTask        none
tXA                  Info
tA07                 Info
tRDP                 Info
tMAM                 Info
tMVX_XSPY            Info
tMVX_DIM             Info
tOMM                 Info
tRPCMGMT             none
tELC                 Info
tVTM                 Info
tVTI                 Info
tSET                 Info
tCSV                 Info
tTPS                 Info
```

```
tfwBk                Info
tUMS                 Info
tUMC                 Info
tVGW                 Info
tRTP                 Info
tRTCP                Info
midnightTask         none
tTelnetOutTask       none
tTelnetInTask        none
tyLstnr              none
tShell               none
value = 5 = 0x5
```

The following example shows command output on the SMC.

```
-> logShow
TTY logging:       on
File logging:      off
Console logging:   on
Syslog file:       /C:/log/syslog.3
Space remaining:   4651
Excption file:     /C:/log/excplog.0
Space remaining:   4096

Task          Level
-------------------- -------
tExcTask             none
tLogTask             none
tAioWait             none
tAioIoTask1          none
tAioIoTask0          none
tPcmciad             none
tDcacheUpd           none
tNetTask             none
tTelnetd             none
tPortmapd            none
tFtpdTask            none
tTftpdTask           none
tSnmpd               none
tSyslogd             none
tMonTask             none
tPxTimer             none
tbootpd              none
tSNTPC               none
baseMMintTask        none
tXA                  Info
tA07                 Info
tRDP                 Info
tMAM                 Info
tMVX_XSPY            none
tMVX_DIM             Info
tOMM                 Info
tPBX                 Info
tELC                 Info
tVGW                 Info
tRTP                 Info
tRTCP                Info
tXMSG                Info
midnightTask         none
tShell               none
tTelnetOutTask       none
tTelnetInTask        none
tyLstnr              none
value = 5 = 0x5
```

lossPlanClr

Syntax: **`lossPlanClr`**

Clears the gain adjustment made by the \UKLossPlanSet and lossPlanSet commands and returns the IP Phones to the TIA-810A levels. Any adjustments made to the handset, headset, or handsfree are cleared.

Enter this command on the node Leader card while it is the node master to ensure the data correctly propagates to all cards in the node. When you install a new Leader card on a node with modified levels, always enter the loss plan command on the CLI even if the command was previously entered on the CLI for another card.

```
VGMC> lossPlanClr
value = 0 = 0x0
VGMC>
IP client loss plan set to default values
```

lossPlanPrt

Syntax: **`lossPlanPrt`**

Displays the current loss plan settings for the IP Phones. Three columns are displayed. The Default column shows the design default in the IP Phones. The Offset column shows the current adjustment entered through the UKLossPlanSet or lossPlanSet commands. The Result column shows the resulting loss levels in the IP Phones.

```
VGMC> lossPlanPrt
Parameter          Default    Offset    Result
---------------    -------    ------    ------
HandsetRLR               2         0         2
HandsetSLR              11        -5         6
HeadsetRLR               0         0         0
HeadsetSLR              11        -5         6
HandsfreeRLR            13         0        13
HandsfreeSLR            16         0        16
```

lossPlanSet

Syntax: **`lossPlanSet "transducer", rlrOffset, slrOffset`**

Change the gain settings on the IP Phone from the volume levels specified by the TIA-810A and TIA-912. The parameter transducer specifies the transducer name that requires a gain adjustment: handset, headset, or handsfree. The parameter rlrOffset specifies the amount of receive-level adjustment (the level for the IP Phone user), while the parameter slrOffset specifies the amount of transmit level adjustment (the level for the far-end user). Values for both are in the range –8 to 8 (in dB). Negative values (–8 to –1) increase the volume (gain).

Enter the command once for each transducer level requiring adjustment. Adjustments are not cumulative; the last one entered for a particular transducer replaces prior offset for the transducer.

Enter this command on the node Leader card while it is the node master to ensure that the data ipropagates correctly to all cards in the node. When you install a new leader card on a node with modified levels, always enter the loss plan command on the CLI even if the command was previously entered on the CLI on another card.

After you enter this command, the gain adjustment is downloaded to all registered telephones. When phones register, they are downloaded the new gain values. The gain adjustment is also saved to a disk file (/c:/config/loss.ini) so the adjusted gains are retained when the card reboots.

When a node has a modified loss plan (that is, when you use this command or UKLossPlanSet), a new card added to the node is updated with the modified loss plan 30 seconds after it boots. Prior to that being received, calls made by IP Phones registered to the new card have the default loss plan levels.

Note:

If the gain of the IP Phones is raised from the default levels, those phones can experience increased occurrence of echo and other audio issues related to the increased volume.

```
VGMC> lossPlanSet "headset",0,-3
value = 6 = 0x6
VGMC>
Headset loss changed to RLR = 0 SLR = 8
```

mac21440BroadcastShow

Syntax: **`mac21440BroadcastShow`**

Displays the sum of broadcast IP packets received each second on an SMC ELAN and TLAN interfaces for the past 60 seconds. This command is available only on the SMC. This output is the combined count for the ELAN and TLAN. The total number of broadcast messages received on the interface since the card was booted also appears.

```
-> mac21440BroadcastShow
Broadcasts per second, last 60 second
-0:    6
-1:    36
-2:    6
-3:    43
-4:    43
-5:    8
-6:    20
-7:    10
```

```
-8:    10
-9:    14
-10:   14
-11:   16
-12:   30
-13:   10
-14:   6
-15:   18
-16:   6
-17:   10
-18:   8
-19:   8
-20:   8
-21:   4
-22:   12
-23:   12
-24:   18
-25:   8
-26:   10
-27:   20
-28:   16
-29:   18
-30:   20
-31:   28
-32:   41
-33:   41
-34:   26
-35:   41
-36:   8
-37:   12
-38:   12
-39:   24
-40:   42
-41:   34
-42:   41
-43:   28
-44:   10
-45:   8
-46:   6
-47:   10
-47:   1342177296
-48:   40
-49:   28
-50:   20
-51:   18
-52:   28
-53:   12
-54:   8
-55:   4
-56:   8
-57:   32
-58:   28
-59:   18
Total number of broadcasts: 2260970
value = 36 = 0x24 = '$'
```

mac21440BroadcastThreshold = threshold

This variable applies to the SMC only. Assigning this variable controls the threshold (in packets per second) at which a message prints when the mac21440ShowLostBroadcast variable is assigned. The default threshold is 40.

```
-> mac21440BroadcastThreshold = 100
mac21440BroadcastThreshold = 0x345604: value = 100 = 0x64 = 'd'
```

mac21440ShowLostBroadcast = 1/0

This variable applies to the SMC only. Assigning a value of 1 prints a message whenever the broadcast threshold (assigned using the mac21440BroadcastThreshold variable) is exceeded by the sum of the broadcasts on the SMC ELAN and TLAN interfaces. The default is off (0); the state is not saved and returns to off if the card is reset or reboots. The example shown was generated when the threshold was set to the default of 40.

```
-> mac21440ShowLostBroadcast = 1
mac21440ShowLostBroadcast = 0x34555c: value = 1 = 0x1
->
NOV 26 14:10:40 tLogTask: Info Time 104457 mac21440: 41 broadcasts in last second
NOV 26 14:10:44 tLogTask: Info Time 104461 mac21440: 43 broadcasts in last second
NOV 26 14:11:00 tLogTask: Info Time 104477 mac21440: 44 broadcasts in last second
NOV 26 14:11:05 tLogTask: Info Time 104482 mac21440: 41 broadcasts in last second
NOV 26 14:11:09 tLogTask: Info Time 104486 mac21440: 41 broadcasts in last second
NOV 26 14:11:10 tLogTask: Info Time 104487 mac21440: 41 broadcasts in last second
NOV 26 14:11:11 tLogTask: Info Time 104488 mac21440: 42 broadcasts in last second
NOV 26 14:11:15 tLogTask: Info Time 104492 mac21440: 44 broadcasts in last second
```

mbufShow

Syntax: **`mbufShow`**

Display statistics and the distribution of the low-level buffers used by the IP stack.

```
-> mbufShow
type        number
---------   ------
FREE    :    6400
DATA    :      0
HEADER  :      0
SOCKET  :      0
PCB     :      0
RTABLE  :      0
HTABLE  :      0
ATABLE  :      0
SONAME  :      0
ZOMBIE  :      0
SOOPTS  :      0
FTABLE  :      0
RIGHTS  :      0
IFADDR  :      0
CONTROL :      0
OOBDATA :      0
IPMOPTS :      0
IPMADDR :      0
IFMADDR :      0
MRTABLE :      0
TOTAL   :    6400
number of mbufs: 6400
number of times failed to find space: 0
number of times waited for space: 0
number of times drained protocols for space: 0
__________________
CLUSTER POOL TABLE
________________________________________________________________________________
size     clusters  free      usage
--------------------------------------------------------------------------------
64       1024      1024      1756686
128      1024      1024      2890311
256      512       512       2331
512      512       512       3
1024     512       512       0
2048     512       512       0
--------------------------------------------------------------------------------
value = 80 = 0x50 = 'P'
```

The following example shows the output on an idle Signaling Server.

```
->mbufShow
type        number
---------   ------
FREE    :    36858
DATA    :      4
HEADER  :      2
SOCKET  :      0
PCB     :      0
RTABLE  :      0
HTABLE  :      0
ATABLE  :      0
SONAME  :      0
ZOMBIE  :      0
SOOPTS  :      0
FTABLE  :      0
RIGHTS  :      0
IFADDR  :      0
CONTROL :      0
OOBDATA :      0
IPMOPTS :      0
IPMADDR :      0
IFMADDR :      0
MRTABLE :      0
TOTAL   :    36864
number of mbufs: 36864
number of times failed to find space: 0
number of times waited for space: 0
number of times drained protocols for space: 0
__________________
CLUSTER POOL TABLE
________________________________________________________________________________
size     clusters  free      usage
--------------------------------------------------------------------------------
64       4096      4092      149613
128      4096      4096      178567
256      4096      4096      2350
512      4096      4096      18
1024     1024      1024      452
2048     1024      1024      0
--------------------------------------------------------------------------------
value = 80 = 0x50 = 'P'
```

memShow

Syntax: **`memShow`**

Display the following memory statistics on the Signaling Server:

- free memory and the blocks that it is composed of
- memory in use
- cumulative amount of memory allocated

The command itgMemShow prints the same data as memShow.

```
-> memShow
status   bytes    blocks   avg block  max block
------ --------- -------- ---------- ----------
current
free  72563664      135     537508  72261852
alloc  60945568    18235       3342        -
cumulative
alloc  1036327240  1444501        717        -
value = 0 = 0x0
```

memShowPatch

Syntax: **`memShowPatch`**

This command displays the memory statistics for the patch memory partition on the SMC card, including:

- free memory and the blocks that it is composed of
- memory in use
- cumulative amount of memory allocated

```
-> memShowPatch
status   bytes    blocks   avg block  max block
------ --------- -------- ---------- ----------
current
free   3122496        1    3122496   3122496
alloc     23216        3       7738        -
cumulative
alloc     46024        4      11506        -
value = 0 = 0x0
```

mkdir

Syntax: **`mkdir "dirName"`**

Creates a new subdirectory of the current directory.

```
-> ll
size          date       time       name
--------       ------     ------    --------              512    JUN-06-2000
08:28:44   LOG  <DIR>
512    JUN-06-2000  08:28:46   OM     <DIR>
512    JUN-06-2000  08:28:50   CONFIG <DIR>
512    JUN-06-2000  08:33:34   FW     <DIR>
512    JAN-01-1996  12:00:22   DATA   <DIR>
512    JAN-01-1996  12:00:22   ETC    <DIR>
512    JAN-01-1996  12:00:22   LOCALE <DIR>
value = 0 = 0x0
-> mkdir "temp"
value = 0 = 0x0
-> ll
size          date       time       name
--------       ------     ------    --------              512    JUN-06-2000
08:28:44   LOG  <DIR>
512    JUN-06-2000  08:28:46   OM     <DIR>
512    JUN-06-2000  08:28:50   CONFIG <DIR>
512    JUN-06-2000  08:33:34   FW     <DIR>
512    JAN-01-1996  12:00:22   DATA   <DIR>
512    JAN-01-1996  12:00:22   ETC    <DIR>
512    JAN-01-1996  12:00:22   LOCALE <DIR>
512    FEB-22-2001  15:10:00   TEMP <DIR>
value = 0 = 0x0
```

mRouteAdd

Syntax: **`mRouteAdd "destIPaddr", "gwIPaddr", 0xdestNetMask, ToS, 0`**

This command is similar to routeAdd, but allows multiple routes to the same destination, differentiated by the ToS or gateway fields. The parameter destIPaddr is the destination IP address; gwIPaddr is the gateway IP address; 0xdestNetMask is the destination net mask in hexadecimal format; ToS is the Type of Service for this route. This change is temporary; rebooting the card rebuilds the routing table from the data in the CONFIG.INI file.

```
 -> mRouteAdd "192.168.1.128","192.168.1.140",0xffffff80,0,0
value = 0 = 0x0
```

mRouteDelete

Syntax: **`mRouteDelete "destIPaddr", 0xdestNetMask, ToS`**

This command is similar to routeDelete, but specifies the route using the destination address, netmask and ToS. The parameter destIPaddr is the destination IP address; 0xdestNetMask is the destination net mask in hexadecimal format; ToS is the Type of Service for this route. This change is temporary; rebooting the card rebuilds the routing table from the data in the CONFIG.INI file.

```
-> mRouteDelete "192.168.1.128",0xffffff80,0
value
```

mRouteShow

Syntax: **`mRouteShow`**

Similar to routeShow, but also displays the ToS bit and mask settings.

```
-> mRouteShow
Destination    Mask      TOS  Gateway        Flags RefCnt Use Interface Proto
0.0.0.0        0         0    192.168.1.200  3     0      0    lnPci1       0
127.0.0.1      0         0    127.0.0.1      5     0      0       lo0       0
192.168.1.0    ffffff80  0    192.168.1.14   101   0      0    lnIsa0       0
192.168.1.128  ffffff80  0    192.168.1.140  101   0      0    lnPci1       0
192.168.1.128  ffffff80  18   192.168.1.140  101   0      0    lnPci1       1
value = 0 = 0x0
```

nd debugOn

Syntax: **`nd debugOn`**

Enable printing of Unicode Name directory debug logs to the current terminal. Used to get information about Unicode Name Directory feature operations. Printing can be disabled by *CTL + C* combination.

Note:

Be cautious using this command during peak hours. It may print too many messages, and will be hard to identify which message belongs to which call.

The following is an example of the output.

```
[admin2@bvw1 ~]$ nd debugOn
=== PD ===
Name Directory debug enabled.
```

Related Commands

none

nd getDbInfo

Syntax: **`nd getDbInfo`**

Used to print information about the size of the Unicode Name Directory database, total number of user names (up to 7 names written in different languages per each user) and total number of phone numbers (associated with different dialing plans – CDP,UDP etc.) stored in DB.

The following is an example of the output.

```
[admin2@bvw1 ~]$ nd getDbInfo
=== PD ===
Name records:564
Phone accounts:237
Database size:1097728 bytes
```

Related Commands

nd help getDbInfo nd ldapSync

nd getQualityInfo

Syntax: **`nd getQualityInfo`**

Print quality statistics gathered for Unicode Name Directory feature. This command prints the following information:

- Total number of Unicode Name Directory database lookups since statistics gathering was started by ‘nd statOn’
- Number of successful lookups (i.e. when localized name is found)
- Number of lookups per minute
- Time since statistics gathering was started. Duration of statistics gathering in hours/ minutes/seconds.

The following is an example of the output.

```
[admin2@bvw1 ~]$ nd getQualityInfo
=== PD ===
Request count:0
Successes database requests:0
Request per minute:0.000000
Statistics gathering is started at 12:43:00.
Duration 1 h 32 min 45 sec.Name records:564
```

Related Commands

nd statOff nd statOn

nd help

Syntax: **`nd help <command name>`**

Show help info on various Unicode Name Directory shell commands. If invoked without parameters then show a list of the available commands.

The following is an example of the output.

```
[admin2@bvw1 ~]$ nd help
=== PD ===
use:
statOn
statOff
getDbInfo
getQualityInfo
ldapSync
selectName
```

Use help <command name> for details

```
[admin2@und~]$ nd help statOn
=== PD ===
This command enables quality statistic on Name Directory Server Used without
parameters
```

Related Commands

nd statOn nd statOff nd getDbInfo nd getQualityInfo nd ldapSync nd selectName

nd ldapSync

Syntax: **`nd ldapSync`**

Invoke manual LDAP data synchronization between Unicode Name Directory server and Common Network Directory server. Information about successful or unsuccessful completion of synchronization is printed.

Note:

It is not recommended to invoke this command during peak hours because it increases usage of RAM and MySQL database loading. Slowdown of call scenarios is expected.

The following is an example of the output.

```
[admin2@bvw1 ~]$ nd ldapSync
=== PD ===
LDAP synchronization is started
Ldap synchronization finished successfully!
```

Related Commands

nd getDbInfo nd ldapSyncStatus

nd ldapSyncStatus

Syntax: **`nd ldapSyncStatus`**

This command checks the result of latest LDAP data synchronization between Unicode Name Directory and Common Network Directory (scheduled or manual) and prints sync. status and appropriate information. This command can be used to determine the cause of a synchronization failure, check how many user accounts are downloaded from CND, or check the number of corrupted or invalid accounts. The following customer scenarios can be handled by this command:

Table 43: Synchronization is successful.

Customer Scenario	Expected behavior		
	Sync. status	**Information**	**Data integrity**
Sync. is successful	Success	TBD	New account are added into DB. Existing accounts are updated if necessary. Accounts removed from CND will be removed from UND DB as well.

Table 44: Synchronization is in progress

Customer Scenario	Expected behavior		
	Sync. status	Information	Data integrity
Authentication with CND LDAP server is successful	In progress	TBD	Data is not changed
Retrieving subscriber accounts	In progress	<# of subs.> subscribers are downloaded	Data is not changed
Retrieving phone accounts	In progress	Accounts for <# of subs.> of <total # of subs.> handled. <#> phone accounts are ignored.	Data is updated for each specific account if necessary, other accounts remain unchanged

Table 45: Errors occurred during synchronization

Customer Scenario	Expected behavior		
	Sync. status	Information	Data integrity
No link with CND LDAP server when establishing connection	Failed	Link is down	Data is not changed
Authentication with CND LDAP server is failed	Failed	Authentication failed	Data is not changed
Link is dropped when retrieving subscriber accounts	Failed	Connection is lost when retrieving subscribers	Data is not changed
Link is dropped when retrieving phone accounts	Failed	Connection is lost when retrieving phone accounts. Accounts for <# of subs.> of <total # of subs.> subscribers are handled. <#> phone accounts are ignored.	Data is updated for subscribers which are downloaded successfully. Other accounts remain unchanged.
Network issues when retrieving subscriber accounts (packet loss, delays etc.)	TBD	TBD	Data is not changed

Customer Scenario	Expected behavior		
	Sync. status	Information	Data integrity
Network issues when retrieving phone accounts.	TBD	TBD	Data is updated for subscribers which are downloaded successfully. Other accounts remain unchanged.
CND server outage when retrieving subscriber accounts	Failed	Connection is lost when retrieving subscribers	Data is not changed
CND server outage when retrieving phone accounts	Failed	Connection is lost when retrieving phone accounts. Accounts for <# of subs.> of <total # of subs.> subscribers are handled. <#> phone accounts are ignored.	Data is updated for subscribers which are downloaded successfully. Other accounts remain unchanged.
Corruption of subscriber account	In progress	<# of subs.> subscribers are downloaded	Data is not changed. Corrupted subscriber account is ignored. Appropriate error message is printed into log file.
Corruption of phone account	In progress	Accounts for <# of subs.> of <total # of subs.> subscribers are handled. <#> phone accounts are ignored.	Data is not changed. Corrupted phone account is ignored. Appropriate error message is printed into log file. Subscriber account, this phone account belongs to, is ignored as well in case there are no other valid phone account associated with this subscriber
UND application is restarted	Failed	TBD	Data is updated for subscribers which are downloaded successfully. Other accounts remain unchanged.

Customer Scenario	Expected behavior		
	Sync. status	Information	Data integrity
MySQL task failure	Failed	TBD (same as for previous row)	Data is updated for subscribers which are downloaded successfully. Other accounts remain unchanged.
Other application failure	Failed	TBD (same as for previous row)	Data is updated for subscribers which are downloaded successfully. Other accounts remain unchanged.

Table 46: UND application start/restart

Customer Scenario	Expected behavior		
	Sync. status	Information	Data integrity
First UND application start	Undefined	No data	Data does not exist
UND application restart (previous LDAP sync. is successful)	Success	UND restart	All subscribers and phone accounts are updated
UND application restart (previous LDAP sync. is failed)	Failed	UND restart	Data is updated for subscribers which are downloaded successfully. Other accounts remain unchanged.

The following is an example of the output.

```
[admin2@bvw1 ~]$ nd ldapSync
=== PD ===
Result: Success
Info: TBD
```

Related Commands

nd ldapSync

nd selectName

Syntax: **`nd selectName -dn <DN> -ct <CALLTYPE> -p <PNI> -cn <CUST#> -l <LANG> -sys <SYS#>`**

> **Note:**
>
> Syntax of nd selectName depends on the call type associated with passed phone number. See nd help selectName command for details.

This command can be used to check if a specific user exists in the Unicode Name Directory database or not. The command will print subscriber's user name for the defined lookup parameters (phone number, language identifier, Private Network Identifier, System ID). The following parameters can be used:

- -dn for phone number (i.e. -dn 5555)
- -cn for customer number(f.e. -cn 0)
- -p for Private Network Identifier(i.e. -p 1)
- -ct for call type (0=UNKNOWN or EXTERNAL, 1=e164international, 2=e164national, 3=e164local, 4=UDP, 5=CDP, 6=local)
- -sys for system ID (f.e. -sys 333244) System ID can be retrieved from LD22 on Call Server (REQ = tid)
- -cdp for own DN(used for CDP call only)
- -l for language (i.e. -l en) The following language identifiers are supported:

  - en - English
  - fr - French
  - sv - Swedish
  - da - Danish
  - nn - Norwegian
  - de - German
  - nl - Dutch
  - cs - Czech
  - fi - Finnish
  - hu - Hungarian
  - it - Italian
  - pl - Polish
  - ru - Russian
  - es - Spanish

- tr - Turkish
- kana - Japanese Katakana
- hani - Japanese Kanji
- lv - Latvian
- zh-hant - Chinese traditional
- zh-hans - Chinese simplified
- ko - Korean
- el - Greek
- ar - Arabic
- he - Hebrew
- pt - Portuguese

The following is an example of the output.

```
[admin2@bvw1 ~]$ nd selectName -dn 2033 -ct 6 -p 10 -=== PD ===
Found:
Name Sergey Agapov
SUBID Subscr_2033
```

Related Commands

none

nd statOff

Syntax: **`nd statOff`**

Disable quality statistics gathering for the Unicode Name Directory feature.

The following is an example of the output.

```
[admin2@bvw1 ~]$ nd statOff
=== PD ===
Name Directory statistic Off
```

Related Commands

nd getQualityInfo nd statOn

nd statOn

Syntax: **nd statOn**

Enable quality statistics gathering for the Unicode Name Directory feature. Use this command to help to analyze the performance of Unicode Name Directory feature. The command nd getQualityInfo should be invoked to show statistics gathered. Use nd statOff to disable quality statistics gathering for the Unicode Name Directory feature.

The following is an example of the output.

```
[admin2@bvw1 ~]$ nd statOn
=== PD ===
Name Directory statistic ON
```

Related Commands

nd getQualityInfo nd statOff

netHelp

Syntax: **netHelp**

Display a help screen synopsis of often used network routines.

The following is an example of the output.

```
-> netHelp  (itg P2 , SA and SS the same)
hostAdd   "hostname","inetaddr"    - add a host to remote host table;
"inetaddr" must be in standard Internet address format e.g. "90.0.0.4"
hostShow                           - print current remote host table
netDevCreate "devname","hostname",protocol                                      -
create an I/O device to access files                                       on the
specified host                                     (protocol 0=rsh, 1=ftp)
routeAdd     "destaddr","gateaddr" - add route to route table
routeDelete  "destaddr","gateaddr" - delete route from route table
routeShow                          - print current route table
iam         "usr"[,"passwd"]      - specify the user name by which you will be known
to remote hosts(and optional password)
whoami                             - print the current remote ID  rlogin
"host"                - log in to a remote host; "host" can be inet address or host
name in remote host table

Type <CR>to continue, Q<CR>to stop:

ifShow       ["ifname"]            - show info about network interfaces
inetstatShow                       - show all Internet protocol sockets
tcpstatShow                        - show statistics for TCP
```

```
udpstatShow                        - show statistics for UDP
ipstatShow                         - show statistics for IP
icmpstatShow                       - show statistics for ICMP

arptabShow                         - show a list of known ARP entries
mbufShow                           - show mbuf statistics

EXAMPLE:   -> hostAdd "wrs", "90.0.0.2"
-> netDevCreate "wrs:", "wrs", 0
-> iam "fred"
-> copy <wrs:/etc/passwd   /* copy file from host "wrs"
*/
-> rlogin "wrs"            /* rlogin to host "wrs" */

value = 1 = 0x1
```

nodePwdEnable, nodePwdDisable

Syntax: **nodePwdEnable nodePwdDisable**

Enable or disable node password checking.

The following example is the output for the VGMC but the same data prints on the Signaling Server.

```
VGMC> nodePwdDisable
value = 0 = 0x0

VGMC> nodePwdShow
value = 0 = 0x0

NodeID  PwdEna  Pwd             TmpPwd          Uses        TimeOut
======  ======  ==============  ==============  ==========  =================
1  No                                               0     0d
0h  0m  0s

VGMC> nodePwdEnable
value = 0 = 0x0

VGMC> nodePwdShow
value = 0 = 0x0

NodeID  PwdEna  Pwd             TmpPwd          Uses        TimeOut
======  ======  ==============  ==============  ==========  =================
1  Yes                                              0     0d
0h  0m  0s
```

nodePwdSet

Syntax: **nodePwdSet**

Assign the node password. If you enter a non-zero length password, all IP Phones that attempt to register prompts the user for a node password before the TN can be modified.

The following example is the output for the VGMC, but the same data prints on the Signaling Server.

```
nodePwdSet - with password:  VGMC> nodePwdSet "1234567890" value = 0 = 0x0  VGMC>
nodePwdShow value = 0 = 0x0  NodeID  PwdEna  Pwd           TmpPwd         Uses
TimeOut ======  ======  ==============  ==============  ==========
=================      1  Yes     1234567890                            0     0d
0h  0m  0s nodePwdSet -without password:  VGMC> nodePwdSet "" value = 0 = 0x0  VGMC>
nodePwdShow value = 0 = 0x0 VGMC>  NodeID  PwdEna  Pwd             TmpPwd
Uses        TimeOut ======  ======  ==============  ==============  ==========
=================      1  Yes                                           0     0d
0h  0m  0s
```

nodePwdShow

Syntax: **nodePwdShow**

Print the node password settings.

The following example is the output for the VGMC, but the same data prints on the Signaling Server.

```
VGMC> nodePwdShow value = 0 = 0x0 VGMC>  NodeID  PwdEna  Pwd           TmpPwd
Uses        TimeOut ======  ======  ==============  ==============  ==========
=================      1  Yes     1234567890                            0     0d
0h  0m  0s
```

nodeTempPwdClear, nodeTempPwdSet

Syntax: **nodeTempPwdClear "Password", "Uses", "Timeout" nodeTempPwdSet "Password", "Uses", "Timeout"**

The nodeTempPwdSet command sets the node level TN entry temporary password. The nodeTempPwdClear command deletes the temporary password and resets its uses and time to zero.

The following example is the output for the VGMC, but the same data prints on the Signaling Server.

```
VGMC> nodeTempPwdSet "1234567", 20, 1 value = 0 = 0x0  VGMC> nodePwdShow value = 0
= 0x0 VGMC> NodeID PwdEna Pwd                              TmpPwd          Uses
TimeOut ====== ====== ============== ============== ===== ================= 555
Yes     12345678      1234567        20     0d 1h 0m 0s VGMC>
```

One telephone registers using the temporary password. The Timeout and Uses values decrease.

```
JUL 10 04:04:01 tCSV: Info 192.168.20.100 Connecting to node555, TN:61.23, 0x6147
JUL 10 04:04:08 tVTM: Info ITS5008 Terminal connection status: 192.168.20.100 ok
(20) JUL 10 04:04:08 tSET: Info 192.168.20.100 TN 61-23 Registered with CS  VGMC>
```

```
nodePwdShow value = 0 = 0x0 VGMC> NodeID PwdEna Pwd             TmpPwd         Uses
TimeOut ====== ====== ============== ============== ===== ================= 555
Yes     12345678       1234567       19   0d 0h 58m 20s VGMC> VGMC> nodeTempPwdClear
value = 0 = 0x0  VGMC> nodePwdShow value = 0 = 0x0 VGMC> NodeID PwdEna Pwd
TmpPwd         Uses   TimeOut ====== ====== ============== ============== =====
================= 555      Yes    12345678                           0d 0h 0m 0s
```

NVRClear

Syntax: **`NVRClear`**

Erase the VGMC ELAN IP data and Leader flag and returns the shell logon and shell timeout to the default values. This command applies only to the VGMCs. Use caution with this command because the card appears as a Follower, but you do not require a BOOTP request. Use the clearLeader command to return a Leader card to Follower status or the command shellTi to reset the shell password. If you use the NVRClear command to clean up the NVRAM, follow it with the clearLeader or setLeader command.

```
VGMC> NVRIPShow IP address : 192.168.1.14 Gateway    : 192.168.1.1 Subnet Mask:
255.255.255.128 Set as Leader. Set to use IP address parameters in NVRAM. value =
43 = 0x2b = '+'  VGMC> NVRClear value = 0 = 0x0  VGMC> NVRIPShow IP address :
255.255.255.255 Gateway    : 0.0.0.0 Subnet Mask: 0.0.0.0 Set as Follower. Warning :
Set as Follower, but will boot using IP parameters in NVRAM instead of  bootp. value
= 88 = 0x58 = 'X'
```

NVRGWSet

Syntax: **`NVRGWSet "gwIPaddr"`**

Assign the card ELAN gateway IP address in the NVRAM. This command applies only to the VGMCs.

NVRIPSet

Syntax: **`NVRIPSet "IPaddr"`**

Assign the card ELAN IP address in the NVRAM. This command applies only to the VGMCs.

NVRIPShow

Syntax: **`NVRIPShow`**

Print the information programmed in the card NVRAM. This command applies only to the VGMCs. This command is useful to determine whether the data configured using the setLeader command is correct on the card.

```
-> NVRIPShow IP address : 192.168.1.14 Gateway    : 192.168.1.1 Subnet Mask:
255.255.255.128 Set as Leader. Set to use IP address parameters in NVRAM. value =
43 = 0x2b = '+'
```

NVRSMSet

Syntax: **`NVRSMSet "subnetMask"`**

Assign the card ELAN subnet mask in the NVRAM. This command applies only to the VGMCs.

ommShow

Syntax: **`ommShow`**

Display the current value of OM counters. Enter this command to view the OM statistics; it does not affect the counter values or the content of the OMREPORT.nnn file.

```
-> ommShow collection_time : 2/23/2001 5:03  i2004Reg_Att: 0 i2004Reg_Fail: 0
i2004Unreg_Att: 0 i2004Aud_Setup: 4 i2004Jitter_Avg: 3.7 i2004Jitter_Max: 13
i2004Pkt_Lost: 0.00 i2004Voice_Time: 1 mins 20 secs ChanAud_Setup: 4
ChanJitter_Avg: 6.0 ChanJitter_Max: 52 ChanPkt_Lost: 0.00 ChanVoice_Time: 1 mins 20
secs  value = 271 = 0x10f
```

osClockShow

Syntax: **`osClockShow`**

Display the date and time as known by the VxWorks OS clock.

```
-> osClockShow
OS Time:  Date (12/02/2001) Time (16:42:31)
value = 44 = 0x2c = ','
```

pbxLibResetLink

Syntax: **`pbxLibResetLink`**

Reset the link between the VGMC/Signaling Server and the Call Server. The link is released and link reestablishment attempted.

The following example shows the SMC output.

```
-> pbxLibResetLink
value = 35970160 = 0x224dc70
-> 47.11.216.184 (47.11.216.184) deleted-> 47.11.216.184 (47.11.216.184) deleted

OCT 31 10:24:56 tpbxResetMain: Alert ITS1009 Call server communication link:
47.11.216.184 down (20)
OCT 31 10:24:56 tpbxResetMain: Warning Elan link down, call election after 2 minutes
OCT 31 10:24:56 tpbxResetMain: Info pbxTcpLinkStop: send shutdown msg to tcp recv
task
OCT 31 10:24:56 tpbxResetMain: Info pbxTcpLinkClose: Close the tcp socket
OCT 31 10:24:56 tPBX: Info TCP close msg received
OCT 31 10:24:56 tpbxResetMain: Info TCP msg pipe closed
OCT 31 10:24:56 tpbxResetMain: Info Attempting to establish PBX link with link 0
OCT 31 10:24:56 TPS: Info ELAN connection down, refuse further registration
OCT 31 10:24:56 VGW: Info GW OffLine msg received from pbxLib, close all dsp
channels and unregister gateways after 600 seconds OCT 31 10:24:56 VGW: Info
Flushing registration queue because the ELAN link is down
OCT 31 10:24:56 SET: Info PBX Link down, reset all registered set after 600 seconds
OCT 31 10:24:56 SET: Info Flushing 0 DSET regsitration requests because ELAN link
is down
OCT 31 10:24:56 SET: Info Flushing 0 keymap download requests becauses of ELAN link
down
->
->
OCT 31 10:25:11 tpbxResetMain: Info Sending request msg to get Call Server S/W
information
OCT 31 10:25:31 tpbxResetMain: Info Sending request msg to get Call Server S/W
information
OCT 31 10:25:31 RDP: Info Parsing the call server supportability information
OCT 31 10:25:32 tpbxResetMain: Info PBX UDP link established for link 0
OCT 31 10:25:32 tpbxResetMain: Info Successfully got call server information
OCT 31 10:25:32 tpbxResetMain: Info TCP msg pipe to 47.11.216.184:15000 established
OCT 31 10:25:32 tPBX: Info TCP msg read task started...
OCT 31 10:25:32 tpbxResetMain: Info PBX TCP link established OCT 31 10:25:32
tpbxResetMain: Info ITS5009 Call server communication link: 47.11.216.184 up (20)
OCT 31 10:25:32 TPS: Info ELAN connection up, accept set registration
OCT 31 10:25:32 VGW: Info GW OnLine msg received from pbxLib
OCT 31 10:25:32 VGW: Info vgwSyncReqReceive: freq 0, rlsCall 1, callServer 2 OCT 31
10:25:32 VGW: Info sending TN call Proc status request for VGW
OCT 31 10:25:32 VGW: Info Registering 32 channels
OCT 31 10:25:32 MAM: Info itgMsgPBXTimeRequest send: Day/Month/Year 31/10/2002, hrs/
min/sec 10/25/32
OCT 31 10:25:32 CSV: Info call server  using the short TN format
OCT 31 10:25:32 CSV: Info call server  using the short TN format
OCT 31 10:25:32 SET: Info dsetSyncReqReceive: freq 0, rlsCall 1, callServer 2
OCT 31 10:25:32 SET: Info sending TN call Proc status request for DSET
OCT 31 10:25:32 VGW: Info Channel 0, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 1, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 2, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 3, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 4, already registered with CS (?)
OCT 31 10:25:32 SET: Info tone table replaced
OCT 31 10:25:32 VGW: Info Channel 5, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 6, already registered with CS (?) OCT 31 10:25:32
SET: Info cadence table replaced
OCT 31 10:25:32 SET: Info server <vxTarget> node <7812> online announce
OCT 31 10:25:32 VGW: Info Channel 7, already registered with CS (?)
OCT 31 10:25:32 SET: Info ServerStatus OK
OCT 31 10:25:32 VGW: Info Channel 8, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 9, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 10, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 11, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 12, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 13, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 14, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 15, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 16, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 17, already registered with CS (?)
OCT 31 10:25:32 VGW: Info Channel 18, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 19, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 20, already registered with CS (?)
OCT 31 10:25:33 tNetTask: Info mac21440Send: Pkt 64 byte multiple. tfifosRequired =
2l
OCT 31 10:25:33 VGW: Info Channel 21, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 22, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 23, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 24, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 25, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 26, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 27, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 28, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 29, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 30, already registered with CS (?)
OCT 31 10:25:33 VGW: Info Channel 31, already registered with CS (?)
OCT 31 10:25:35 ELC: Notice Election won, master = 192.168.20.5
OCT 31 10:25:35 TPS: Info Security Check is Enabled
```

The following example shows command output on the Signaling Server.

```
-> pbxLibResetLink
value = 176095708 = 0xa7f01dc
-> 47.11.216.184 (47.11.216.184) deleted
31/10/02 10:27:15 LOG0001 tpbxResetMain: ITS1009 Call server communication link:
47.11.216.184 down (20)
31/10/02 10:27:15 LOG0003 tpbxResetMain: itgMsgSend to task 0xbc00
31/10/02 10:27:15 LOG0004 tpbxResetMain: Elan link down, call election after 2
minutes
31/10/02 10:27:15 LOG0006 tpbxResetMain: pbxTcpLinkStop: send shutdown msg to tcp
recv task
31/10/02 10:27:15 LOG0006 tpbxResetMain: pbxTcpLinkClose: Close the tcp socket
31/10/02 10:27:15 LOG0006 tPBX: TCP close msg received
31/10/02 10:27:15 LOG0006 tpbxResetMain: TCP msg pipe closed
31/10/02 10:27:15 LOG0006 tpbxResetMain: Attempting to establish PBX link with link 0
31/10/02 10:27:15 LOG0006 TPS: ELAN connection down, refuse further registration
31/10/02 10:27:15 LOG0006 SET: PBX Link down, reset all registered set after 600
seconds
31/10/02 10:27:15 LOG0006 SET: Flushing 0 DSET regsitration requests because ELAN
link is down
31/10/02 10:27:15 LOG0006 SET: Flushing 0 keymap download requests becauses of ELAN
link down
31/10/02 10:27:30 LOG0006 tpbxResetMain: Sending request msg to get Call Server S/W
information
31/10/02 10:27:50 LOG0006 tpbxResetMain: Sending request msg to get Call Server S/W
information
31/10/02 10:27:50 LOG0006 RDP: Parsing the call server supportability information
31/10/02 10:27:50 LOG0006 RDP: Companding Law set to MuLaw 31/10/02 10:27:50 LOG0006
RDP: notifyConfigReadDone for 0 channels
31/10/02 10:27:51 LOG0006 tpbxResetMain: PBX UDP link established for link 0
31/10/02 10:27:51 LOG0006 tpbxResetMain: Successfully got call server information
31/10/02 10:27:51 LOG0006 tpbxResetMain: TCP msg pipe to 47.11.216.184:15000
```

```
established
31/10/02 10:27:51 LOG0006 tPBX: TCP msg read task started...
31/10/02 10:27:51 LOG0006 tpbxResetMain: PBX TCP link established
31/10/02 10:27:51 LOG0003 tpbxResetMain: itgMsgSend to task 0xbc00
31/10/02 10:27:51 LOG0006 tpbxResetMain: ITS5009 Call server communication link:
47.11.216.184 up (20)
31/10/02 10:27:51 LOG0003 tpbxResetMain: itgMsgSend to task 0xbc00
31/10/02 10:27:51 LOG0006 TPS: ELAN connection up, accept set registration
31/10/02 10:27:51 LOG0006 MAM: itgMsgPBXTimeRequest send: Day/Month/Year
31/10/2002, hrs/min/sec
10/27/51 31/10/02 10:27:51 LOG0006 CSV: call server  using the short TN format
31/10/02 10:27:51 LOG0006 SET: dsetSyncReqReceive: freq 0, rlsCall 1, callServer 2
31/10/02 10:27:51 LOG0006 SET: sending TN call Proc status request for DSET 31/10/02
10:27:51 LOG0006 MAM: system time synchronized with call server time: THU OCT 31
10:27:51 2002

31/10/02 10:27:51 LOG0006 SET: tone table replaced
31/10/02 10:27:51 LOG0006 SET: cadence table replaced
31/10/02 10:27:51 LOG0006 SET: server <jimfan> node <7812>online announce
31/10/02 10:27:51 LOG0006 SET: ServerStatus OK
```

pbxLinkShow

Syntax: **`pbxLinkShow`**

Displays the status of the link with the Call Server (Link state), the Call Server ELAN IP address and the protocol used for the communication.

The VGMC and Signaling Servers communicate with the Call Server using TCP. Even when you use TCP, the heartbeat between the VGMC/Signaling Server and the Call Server occurs over RUDP.

```
-> pbxLinkShow
Active CS type = Succession CSE 1K
Active CS S/W Release = 300
Supported Features: CorpDir  UserKeyLabel  VirtualOffice  UseCSPwd  I2001  I2004
Ph2  I2002 Ph2
CS Main: ip = 47.11.216.85, ConnectID = 0xb9ddc34, BroadcastID = 0xb9ddd30, Link is
up
CS Signaling Port = 15000
CS Broadcast Port = 15001
Broadcast PortID = 0xb9ddeb8
RUDP portID = 0xb9dde2c
Tcp Link state = up Tcp
Signaling Port:  15000
Tcp socket fd:       40
Tcp msgs sent:       175248
Tcp msgs recd:       2319379
value = 23 = 0x17
```

ping

Syntax: **`ping "IPaddr", [numPings]`**

This command sends an ICMP ECHO_REQUEST packets to a network host, specified by the parameter IPaddr in dotted notation. The host that matches the destination address in the packets responds to the request. If a response is not returned in less than 5 seconds, the sender times out. You can use this command to determine whether other hosts or VGMCs are properly communicating with the sender card. The command also works on the Signaling Server.

The parameter numPings specifies the number of packets to receive; if omitted, pings continue until you type Ctrl+C. Otherwise, pings are sent until the specified number of responses are received. The percentage of packet loss is then calculated from the ratio of received to sent messages.

```
VGMC> ping "10.0.0.2",5
PING 10.0.0.2: 56 data bytes
64 bytes from 10.0.0.2: icmp_seq=0. time=0. ms
64 bytes from 10.0.0.2: icmp_seq=1. time=0. ms
64 bytes from 10.0.0.2: icmp_seq=2. time=0. ms
64 bytes from 10.0.0.2: icmp_seq=3. time=0. ms
64 bytes from 10.0.0.2: icmp_seq=4. time=0. ms
----10.0.0.2 PING Statistics----
5 packets transmitted, 5 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/0/0
value = 0 = 0x0
```

pdPipeShow

Syntax: **pdPipeShow**

This command displays the detail configuration and run-time data for the smart pipe.

```
-> pdPipeShow  Smart Pipe [PD Smart Pipe]  -------------- Run Time Data
-------------  Pending Pipe Reqs ..... 0  HTTP Req pending ...... no  Pipe Timer
active ..... no  Peak .................. 2  Maximum RTT ........... 384 (ms)  Pipe
Enabled .......... yes  Pipe Error Count ...... 0 Comm Error Count ...... 0 <-- this
parameter indicates how many times has the SPIPE failed communicating with the
application server   ------- Configuration ------------------
Application ........... http://47.11.217.18/cgi/pdpipe.cgi  Default timeout ......
250 (ms)  Maximum timeout ...... 20000 (ms)  Maximum Elements ...... 44000 (reqs)
Maximum Resp Size...... 20000 (bytes)  Maximum Req one shot .. 100 (reqs)
```

pdWebCount

Syntax: **pdWebCount**

Print the hit count for all major CGIs.

```
-> pdWebCount pdperdir.cgi ...... 6780 pdcaller.cgi ...... 7890 pdredial.cgi ......
2322 pdchgmod.cgi ...... 1245
```

pwd

Syntax: **pwd**

Show the current directory path. On the VGMC, if the path shown is only host, you must change to the C: drive to make the other directories visible.

```
-> pwd
host: value = 6 = 0x6
-> cd "/C:"
value = 0 = 0x0
-> pwd
/C:
value = 4 = 0x4
```

The result is different on the Signaling Server because of the difference in directory structures.

```
-> pwd
/u/config
value = 10 = 0xa
```

rdxxxx commands (Signaling Server only)

The Signaling Server supports the same report log mechanism employeed on the CS 1000. Instead of using SYSLOG.n files as on the VGMCs, the information, warning, and error messages are stored in RPT files. You can access these files using the same rdxxxx commands used from the PDT shell on the CS 1000.

To print a list of commands, enter the following commands:

```
pdt> help rdtools
rdtools
Help for rd tools:

rdopen                  Open a report log file
rdgo                    Go to a specific record
rd                      Display records
rds                     Display records with symbolic dump
rdshow                  Show general log file info
rdall                   Display all records
rdtail                  Display newest records
rdhead                  Display oldest records
pdt>
```

The following example shows command output.

```
pdt> rdshow
File Name            : "/u/rpt/LOG00012.RPT"            Capacity in bytes    :
1000000                        Capacity in records  : 1315
Number of records = 1315                                Oldest record = 0, logged
at 26/11/02 04:49:21         Newest record = 1314, logged at 26/11/02 17:08:22
```

```
Current Record = 0 Display Increment = 10 records

pdt> rdtail
[1314] 26/11/02 17:08:22 LOG0006 tRootTask: Task umsClientStubInit initialization
succeeded
[1313] 26/11/02 17:08:21 LOG0006 VTM: VTM received notification that UMC is
initialized.
[1312] 26/11/02 17:08:21 LOG0006 CSV: Node 3918 registering for terminal connections
on 47.11.215.43:4100
[1311] 26/11/02 17:08:21 LOG0006 CSV: CSV enable
[1310] 26/11/02 17:08:21 LOG0006 CSV: UMC is initialized.  Enable CSV from pending.
[1309] 26/11/02 17:08:21 LOG0006 VTM: Client logged on 0xB13DD8C
[1308] 26/11/02 17:08:19 LOG0006 TPS: Firmware download for Terminal i2002
completed. Sending broadcast message from IP:47.11.215.44
[1307] 26/11/02 17:08:19 LOG0006 tRootTask: Task umsInit initialization succeeded
[1306] 26/11/02 17:08:19 LOG0006 tRootTask: Resync IniFile from version 3003B20 to
0603B39 for terminal i2002.
[1305] 26/11/02 17:08:19 LOG0006 tRootTask: Successfully downloaded i2002 firmware
from /u/fw/i2002.fw
pdt>
pdt> rdhead
[0000] 26/11/02 04:49:21 LOG0005 ELC: Election won, master = 47.11.215.44
[0001] 26/11/02 04:49:21 LOG0006 TPS: Security Check is Enabled
[0002] 26/11/02 04:49:21 LOG0006 TPS: Overriding password to <123456>
[0003] 26/11/02 04:59:46 LOG0006 GKDBM: gkDbmMaintDynamicSync: PRIMARY_GK in
GK_ACTIVE
[0004] 26/11/02 04:59:46 LOG0006 GKDBM: gkDbmMaintDynamicSync: Saved 0 Deleted 0
[0005] 26/11/02 04:59:49 LOG0006 GKOMM: Updating /u/gk/omm/cur_omm.txt: hour 19
[0006] 26/11/02 05:27:56 LOG0005 ELC: Election called by 47.11.215.30, reason
<Timeout>
[0007] 26/11/02 05:27:58 LOG0006 ELC: VTRK: This signal server is master
[0008] 26/11/02 05:27:58 LOG0006 ELC: gkNpmCardEventHandler: unhandled event 0x4
[0009] 26/11/02 05:27:58 LOG0004 VTRK: vtrkStateHandler: event 0 ignored ; state =
VtrkActive
pdt>
```

reboot

Syntax: **`reboot type`**

Reboot the Signaling Server. This command does not apply to the VGMCs. When you leave the parameter type blank, the Signaling Server performs a warm start. When you assign it a value of –1, the Signaling Server performs a cold start.

rename

Syntax: **`rename "sourceFile", "destFile"`**

On the VGMC or Signaling Server, this command can be used to rename the file specified by sourceFilename to the name destFilename.

resetOM

Syntax: **`resetOM`**

Write the current OM counter values to the OMREPORT.nnn file and reset the counters to zero.

The following example is shown for a VGMC but also applies to the Signaling Server vxshell or oam prompts.

```
VGMC> resetOM
value = 0 = 0x0
VGMC>
FEB 23 05:06:58 tMAM: Info mamProcResetOm()
VGMC>
```

rm

Syntax: **`rm "filename"`**

Delete a file from the A: or C: drives. The A: drive is the faceplate PC card port on the VGMC, or the floppy drive on the Signaling Server.

```
-> ll
size          date       time       name
--------       ------     ------    --------
512    JUN-06-2000  08:28:50   .                 <DIR>
512    JUN-06-2000  08:28:50   ..                <DIR>
840    JAN-26-2001  13:00:38   CONFIG.INI
840    JAN-26-2001  13:17:40   CONFIG.BAK
238    JAN-23-2001  12:55:12   BOOTP.TAB
238    FEB-12-2001  17:26:12   BOOTP.BAK
205    FEB-12-2001  17:48:02   UMS.INI
21    NOV-14-2000  09:35:16   ITG.INI
value = 0 = 0x0
-> rm "ITG.INI"
value = 0 = 0x0
-> ll
size          date       time       name
--------       ------     ------    --------
512    JUN-06-2000  08:28:50   .                 <DIR>
512    JUN-06-2000  08:28:50   ..                <DIR>
840    JAN-26-2001  13:00:38   CONFIG.INI
840    JAN-26-2001  13:17:40   CONFIG.BAK
238    JAN-23-2001  12:55:12   BOOTP.TAB
238    FEB-12-2001  17:26:12   BOOTP.BAK
205    FEB-12-2001  17:48:02   UMS.INI
value = 0 = 0x0
```

rmdir

Syntax: **`rmdir "dirName"`**

Delete the specified directory.

```
-> ll
size     date        time       name
-----  -----------  --------   ---------------
512    JUN-06-2000  08:28:44   LOG        <DIR>
512    JUN-06-2000  08:28:46   OM         <DIR>
512    JUN-06-2000  08:28:50   CONFIG     <DIR>
512    JUN-06-2000  08:33:34   FW         <DIR>
512    JAN-01-1996  12:00:22   DATA       <DIR>
512    JAN-01-1996  12:00:22   ETC        <DIR>
512    JAN-01-1996  12:00:22   LOCALE     <DIR>
512    FEB-22-2001  15:10:00   TEMP       <DIR>
value = 0 = 0x0
-> rmdir "temp"
value = 0 = 0x0


-> ll
size     date        time       name
-----  -----------  --------   ---------------
512    JUN-06-2000  08:28:44   LOG        <DIR>
512    JUN-06-2000  08:28:46   OM         <DIR>
512    JUN-06-2000  08:28:50   CONFIG     <DIR>
512    JUN-06-2000  08:33:34   FW         <DIR>
512    JAN-01-1996  12:00:22   DATA       <DIR>
512    JAN-01-1996  12:00:22   ETC        <DIR>
512    JAN-01-1996  12:00:22   LOCALE     <DIR>
value = 0 = 0x0
```

routeAdd

Syntax: **`routeAdd "destIPaddr", "gwIPaddr"`**

Add a route to the network routing tables. The parameter destIPaddr is the destination IP address; gwIPaddr is the gateway IP address. This change is temporary; rebooting the card rebuilds the routing table from the data in the CONFIG.INI file.

```
-> routeAdd "192.168.1.128","192.168.1.140"
value = 0 = 0x0
```

routeDelete

Syntax: **`routeDelete "destIPaddr", "gwIPaddr"`**

Deletes a route from the network routing tables. The parameter destIPaddr is the destination IP address in dotted notation; gwIPaddr is the gateway IP address in dotted notation. This change is temporary; rebooting the card rebuilds the routing table from the data in the CONFIG.INI file.

```
-> routeDelete "192.168.1.128","192.168.1.140"
value = 0 = 0x0
```

routeShow

Syntax: **`routeShow`**

Prints the card IP network and host routing tables. Verify the configured routes and the dynamic routes are in the table. The command also applies to the Signaling Server from the Signaling Server vxshell or oam prompts.

```
VGMC> routeShow
ROUTE NET TABLE
destination      gateway              flags  Refcnt  Use           Interface
----------------------------------------------------------------------------
0.0.0.0          10.0.0.1             3      1       302727        lnPci1
10.0.0.0         10.0.0.9             101    0       0             lnPci1
192.169.0.0      192.169.0.11         101    0       0             lnIsa0
----------------------------------------------------------------------------

ROUTE HOST TABLE
destination      gateway              flags  Refcnt  Use           Interface
----------------------------------------------------------------------------
127.0.0.1        127.0.0.1            5      0       34235         lo0
----------------------------------------------------------------------------
value = 77 = 0x4d = 'M'
```

rPing

Syntax: **`rPing "source, "destination", "count"`**

Ping the destination from a remote source. Run this command from the VGMC> prompt.

The source parameter is the IP address or TN of the device requested to ping a destination IP address. The parameter destination is the IP address the source pings to. The count parameter is the number of successful attempts. If count is not specified, it is assigned a value of 4.

The following example shows command output on the VGMC.

```
VGMC> rPing "47.11.239.230", "47.11.213.216", "3"
value = 79 = 0x4f = ’O’

47.11.213.216 is the IP address of an IP set registered to the SS.
47.11.239.230 is the IP address of the SS.
```

The following example shows command output on the Signaling Server.

```
PING 47.11.213.216 : 56 data bytes
64 bytes from 47.11.213.216: icmp_seq=0. time=0. ms
64 bytes from 47.11.213.216: icmp_seq=1. time=0. ms
64 bytes from 47.11.213.216: icmp_seq=2. time=0. ms
64 bytes from 47.11.213.216: icmp_seq=3. time=0. ms
----47.11.213.216  PING Statistics----
4 packets transmitted, 4 packets received, 0% packet loss round-trip (ms)  min/avg/
max = 0/0/0
```

47.11.213.216 is the IP address of a Phase 2 IP Phone.

```
->  rPing "47.11.213.216", "47.11.239.230", "5"

value = 247379504 = 0xebeb630
->rPing Report from set (47.11.213.216):

64 bytes packets received from IP 47.11.239.230
ICMP sequence is 0
round trip time in ms: 0
rPing Report from set (47.11.213.216):

64 bytes packets received from IP 47.11.239.230
ICMP sequence is 1
round trip time in ms: 0

rPing Report from set (47.11.213.216):

64 bytes packets received from IP 47.11.239.230
ICMP sequence is 2
round trip time in ms: 0

rPing Report from set (47.11.213.216):

64 bytes packets received from IP 47.11.239.230
ICMP sequence is 3
round trip time in ms: 0

rPing Report from set (47.11.213.216):

64 bytes packets received from IP 47.11.239.230
ICMP sequence is 4
round trip time in ms: 0

rPing Report from set (47.11.213.216):

64 bytes packets received from IP 47.11.239.230
5 packets transimitted, 5 packets received, 0 packets lost
minimum round trip time in ms: 0
average round trip time in ms: 0
maximum round trip time in ms: 0
```

rPingStop

Syntax: **`rPingStop "source"`**

This command stops the rPing command from the source IP address or TN. Phase 2 IP Phones and the Avaya 2050 IP Softphone support this command. Run this command from the VGMC> prompt.

```
-> rPingStop "47.11.213.216"
value = 247379504 = 0xebeb630
```

rtClockShow

Syntax: **rtClockShow**

Display the date and time as known by the RTC chip. This command does not apply to the Signaling Server.

```
-> rtClockShow
RTC Time: Date (12/02/2001) Time (16:42:29)
value = 44 = 0x2c = ','
```

rTraceRoute

Syntax: **rTraceRoute "source", "destination", "max_hops"**

Request one IP Phone to trace route destination IP address. Phase 2 IP Phones and the Avaya 2050 IP Softphone support this command. Run this command from the VGMC> prompt.

The parameter source is the IP address or TN of the IP Phone requested to ping a destination IP address. The parameter destination is the IP address the source pings to. The parameter max_hops is the maximum number of hops.

The following example is the output after the trace route report is received from the IP Phone.

```
rTraceRouteReport from Set (47.11.215.153)
1 -- 47.11.181.3 1.079ms 0.768ms 0.744ms
2 -- 47.11.174.10 2.861ms 2,654ms 2.690md
3 -- * * *
4 -- * * *
5 -- * * *
6 -- last packet

pdt>  rTraceRoute "47.11.213.216", "47.11.239.230", "5"
pdt> 25/11/04 14:15:24 LOG0006 VTM: rTraceRoute Report from set (47.11.213.216):
25/11/04 14:15:24 LOG0006 VTM: rTraceRoute Report from set (47.11.213.216):
25/11/04 14:15:24 LOG0006 VTM: 1 -- 47.11.213.1: 0ms  30ms  10ms
25/11/04 14:15:24 LOG0006 VTM: rTraceRoute Report from set (47.11.213.216):
25/11/04 14:15:24 LOG0006 VTM: 2 -- 47.11.248.221: 80ms  110ms  120ms
25/11/04 14:15:24 LOG0006 VTM: rTraceRoute Report from set (47.11.213.216):
25/11/04 14:15:24 LOG0006 VTM: 3 -- 47.11.224.17: 10ms  0ms  0ms
25/11/04 14:15:24 LOG0006 VTM: rTraceRoute Report from set (47.11.213.216):
25/11/04 14:15:24 LOG0006 VTM: 4 -- 47.11.239.230: 10ms  0ms  0ms
25/11/04 14:15:24 LOG0006 VTM: rTraceRoute completed !
```

rTraceRouteStop

Syntax: **`rTraceRouteStop "source"`**

Stop the previous trace route command through the VGMC. The IP Phone sends the response back to the VGMC. Phase 2 IP Phones and the Avaya 2050 IP Softphone support this command. Run this command from the VGMC> prompt.

```
pdt>  rTraceRouteStop "47.11.213.216"
pdt>
```

RTPStatShow

Syntax: **`RTPStatShow "source"`**

Print the most recent copy of RTCP statistics report. Run this command from the vxWorksShell.

This command works regardless of whether the phone is active or inactive. If the phone is active and you run this command before the first RTCP statistics report is received, then the last RTCP statistics report from the previous call print. If the phone is not active and a prior call is made on this phone, the last RTCP statistics report from the previous call print. If no prior call is made on this phone before, all zero contents print.

The parameter source is the IP address or TN of the telephone being requested to show RTCP statistics.

RTPTraceShow

Syntax: **`RTPTraceShow "source", "number of polling period"`**

Use this command for expert support (vxWorksShell level). Use this command to obtain RTP/RTCP statistics for the specific IP end point with refreshing values in real time. Run this command from the vxWorksShell.

This command works regardless of whether the phone is active or inactive. If the phone is active, then the RTCP or RTCP-XR statistics prints for the specified period. If the phone is not active and a prior call is made on this phone, the last RTCP statistics report from the previous call print. If no prior call is made on this phone, all zero contents print.

The parameter source is the IP address of TN of the telephone being requested to show RTCP statistics. The parameter number of polling period is the number of times polling period RTCP statistics are displayed. If this parameter is not specified, the default is until the end of the call.

```
->  RTPTraceShow "47.11.213.216", "47.11.239.230", "5"
value = 0 = 0x0
```

RTPTraceStop

Syntax: **`RTPTraceStop "source"`**

Stop the previous command, RTPTraceShow. Phase 0/1 IP Phones, Phase 2 IP Phones, and Avaya 2050 IP Softphone support this command. Run this command from the vxWorksShell.

source is the IP address of TN of the telephone being requested to show RTCP statistics.

rudpConfigShow

Syntax: **`rudpConfigShow`**

This command displays the current configuration parameters for the RUDP connections.

```
-> rudpConfigShow            Mode               RUDP
Max retries        10
Timeout            400 ms
Bundle mode        Off
Keep Alive         60000 ms
Payload ID         0xff
Window size        0
value = 21 = 0x15
```

rudpShow

Syntax: **`rudpShow`**

Show the status of all RUDP links on the VGMC/Signaling Server, including the link to the Call Server and all IP Phones registered with this card.

```
-> rudpShow
RUDP Port Summary
Port ID       Src IP     Src Port
+----------+---------------+--------+
0x039bff98        10.1.1.1     5100
0x039bf0e0         0.0.0.0    15001
0x039c0d88   192.168.1.201    15000
```

```
0x035a1d74        10.1.1.1     7300
0x03a88190       10.1.1.10     4100

RUDP Connection Summary

Src IP     Src Port Connect ID      Dst IP     Dst Port      Status       Msg rcv
Msg sent    Retries
+---------------+--------+----------+---------------+--------+----------------
+----------+----------+----------+
10.1.1.1     5100 0x03a88098        10.1.1.2    5000   ESTABLISHED <->       44
1730         81
10.1.1.1     5100 0x035919d0        10.1.1.3    5000   ESTABLISHED <->       13
1679         79
0.0.0.0    15001 0x039befe8   192.168.1.200   15000      DUDP              0
0          0
192.168.1.201    15000 0x039c0c90   192.168.1.200   15000   ESTABLISHED <->
10820        538          1
value = 0 = 0x0
```

RUDPStatShow

Syntax: **`RUDPStatShow "source"`**

Display the information received from the IP endpoint, including number of messages sent, number of messages received and number of retries. Run this command from the VGMC> prompt.

The parameter source is the IP address or TN of the telephone being requested to provide the UNIStim/RUDP statistics.

The following example shows the RUDP/UNIStim statistic report output.

```
RUDP/UNIStim Statistic Report from Set (47.11.215.153)
Messages sent: 309
Messages received: 321
Number of retries: 10
Uptime of current TPS registration: 2 hour 24 minutes 35 seconds
```

Note:

Uptime is not cleared even if parameter clear is set in the command sent from Signaling Server/ VGMC to the telephone.

RUDPStatShow

Syntax: **`RUDPStatShow "source", "clear"`**

Clear the UNIStim/RUDP statistics counts when clear is assigned a value of 1. The uptime of Current TPS Registration is not cleared whether clear is assigned a value of 1 or not.

```
-> RUDPStatShow "47.11.213.216"
value = 247379504 = 0xebeb630
->

RUDPStatShow Report from set (47.11.213.216):
Number of Message Sent: 4878
Number of Message Received: 114977
Number of Retries: 4404
Number of Resets: 26
Uptime of Current TPS Registration: 0days 0hours 54minutes 34seconds
```

serialNumShow

Syntax: **`serialNumShow`**

Display the VGMC serial number data.

```
-> serialNumShow
Serial Number = NNTM1017213N 200023
```

Example output on Signaling Server:

```
-> serialNumShow
No serial number support.
value = 26 = 0x1a
```

setClocks

Syntax: **`setClocks yyyy, mm, dd, hh, mm, ss`**

Assign the time for the VGMC or MC32S realtime clock chip (RTC) and the VxWorks OS clock. The time and date is downloaded to Meridian 1 systems, or from the CS 1000. This command can be useful to remotely log on to a card on a Meridian 1 system. You must configure the time and date to a specific value be able to synchronize trace information. On CS 1000 systems, the time and data on the VGMC and Signaling Servers should already be synchronized with the CS 1000.

The VGMC application takes the time from the VxWorks OS clock. Normally that clock initializes from the RTC when the card boots up, when EM downloads the time (on the Leader card), or when the SNTP response returns the time (on the Follower card). This command updates them both to the date and time entered by using the parameters yyyy, mm, dd, hh, mm, ss.

```
-> setClocks 2001,02,12,16,38,30
value = 0 = 0x0
```

setLeader

Syntax: **setLeader "IPaddr","gwIPaddr","subnetMask"**

Store all necessary information in the VGMC or MC32S card NVRAM so that on reboot the card starts up as a Leader 0. This command is not available on the Signaling Server. The parameter IPaddr is the card ELAN IP address, gwIPaddr is the ELAN gateway IP address and subnetMask is the ELAN subnet mask. This command sets the Leader flag and the BOOTP flag to retrieve the IP information from the NVRAM instead of sending a BOOTP request.

```
VGMC> setLeader "192.168.1.14","192.168.1.1","255.255.255.128"
IP address : 192.168.1.14
Gateway    : 192.168.1.1
Subnet Mask: 255.255.255.128
Set as Leader.
Set to use IP address parameters in NVRAM.
Settings will take effect on card reboot.
value = 43 = 0x2b = '+'
```

shellTimeoutDisable

Syntax: **shellTimeoutDisable**

Keep the shell from timing out and allow unlimited access. This command is only available on the VGMC.

```
-> shellTimeoutDisable value = 0 = 0x0
```

shellTimeoutEnable

Syntax: **shellTimeoutEnable**

Restore the timeout function of the shell. The actual duration of the timeout can be assigned using the shellTimeoutSet command. This command is only available on the VGMC.

```
-> shellTimeoutEnable value = 0 = 0x0
```

shellTimeoutGet

Syntax:

Display the currently configured idle shell timeout value in seconds. This command is only available on the VGMC.

```
-> shellTimeoutGet value = 1200 = 0x4b0
```

shellTimeoutSet

Syntax: **`shellTimeoutSet timeout`**

Assign the VGMC idle shell timeout value in seconds. This command is not available on the Signaling Server. The valid range for timeout is 30 to 4095. The default timeout is 1200 (20 minutes). The value is persistent: it is stored in NVRAM. The new timeout value takes effect immediately.

```
-> shellTimeoutSet 30 value = 0 = 0x0
```

showMemConfig

Syntax: **`showMemConfig`**

Display the size of the VGMC DRAM memory. This command is not available on the Signaling Server. Can be executed from the BIOS or VxWorks shells.

```
-> showMemConfig  Memory Configuration: Bank0:  64MB  value = 0 = 0x0
```

sockShow

Syntax: **`sockShow`**

Display a list of sockets in use.

The following example is from an ITG-P card.

```
-> sockShow
5 TCP AF_UNSPEC         0.0.0.0 : 21
6 TCP AF_UNSPEC         0.0.0.0 : 23
```

```
7 TCP AF_UNSPEC         0.0.0.0 : 1009
9 UDP AF_UNSPEC         0.0.0.0 : 69
10 UDP AF_UNSPEC         0.0.0.0 : 111
11 TCP AF_UNSPEC         0.0.0.0 : 111
12 UDP AF_UNSPEC    192.168.1.14 : 161
17 UDP AF_UNSPEC         0.0.0.0 : 67
19 UDP AF_UNSPEC         0.0.0.0 : 20000
21 UDP AF_UNSPEC         0.0.0.0 : 514
31 TCP AF_UNSPEC         0.0.0.0 : 1006
32 UDP AF_UNSPEC         0.0.0.0 : 15001
33 UDP AF_UNSPEC    192.168.1.14 : 15000
35 UDP AF_UNSPEC         0.0.0.0 : 16550
42 UDP AF_UNSPEC   192.168.1.140 : 7300
43 UDP AF_UNSPEC         0.0.0.0 : 16540
47 UDP AF_UNSPEC   192.168.1.149 : 4100
49 TCP AF_UNSPEC    192.168.1.14 : 23
51 UDP AF_UNSPEC   192.168.1.140 : 5100
value = 66775540 = 0x3fae9f4
->
```

The following example is from the Signaling Server.

```
-> sockShow
6 TCP AF_UNSPEC         0.0.0.0 : 21
7 UDP AF_UNSPEC         0.0.0.0 : 69
8 UDP AF_UNSPEC         0.0.0.0 : 111
9 TCP AF_UNSPEC         0.0.0.0 : 111
10 UDP AF_UNSPEC   10.11.216.166 : 161
15 UDP AF_UNSPEC         0.0.0.0 : 162
16 TCP AF_UNSPEC         0.0.0.0 : 513
17 TCP AF_UNSPEC         0.0.0.0 : 23
18 UDP AF_UNSPEC         0.0.0.0 : 67
21 UDP AF_UNSPEC         0.0.0.0 : 20031
23 TCP AF_UNSPEC         0.0.0.0 : 1009
24 UDP AF_UNSPEC         0.0.0.0 : 15001
25 UDP AF_UNSPEC   10.11.216.166 : 15000
26 UDP AF_UNSPEC         0.0.0.0 : 16550
28 UDP AF_UNSPEC         0.0.0.0 : 16501
29 UDP AF_UNSPEC    192.168.0.50 : 7300
30 UDP AF_UNSPEC         0.0.0.0 : 16540
32 UDP AF_UNSPEC    192.168.0.50 : 5100
35 UDP AF_UNSPEC    192.168.0.50 : 1719
36 UDP AF_UNSPEC    192.168.0.50 : 1718
37 TCP AF_UNSPEC    192.168.0.50 : 1720
38 UDP AF_UNSPEC         0.0.0.0 : 16500
39 TCP AF_UNSPEC         0.0.0.0 : 80
40 TCP AF_UNSPEC   10.11.216.166 : 1662
42 UDP AF_UNSPEC    192.168.0.51 : 1719
43 TCP AF_UNSPEC    192.168.0.51 : 1720
46 UDP AF_UNSPEC    192.168.0.51 : 4100
->
```

SIPCallTrace on

Syntax: **`SIPCallTrace on`**

Turn on tracing for all channels.

SIPCallTrace off

Syntax: **`SIPCallTrace off`**

Turn off tracing for all channels.

SIPCallTrace ch channelNum MsgRecv MsgRecv

Syntax: **`SIPCallTrace ch channelNum MsgRecv MsgRecv`**

Turn SIP tracing on or off.

The following table describes the command parameters.

Table 47: Command parameters

Parameter	Value	Description
channelNum	0 to maximum channel number	Channel number of the virtual trunk to trace.
MsgRecv	ON OFF	Specify whether to trace the messages sent to the specified channels.
MsgSend	ON OFF	Specify whether to trace the messages sent from the specified channels.

```
oam> SIPCallTrace ch 033 on on
oam> 11/01/05 15:22:11 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:11 Recv chid:33
ip:192.168.19.50:5060 SIP INVITE
11/01/05 15:22:11 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:11
Send chid:33 ip:192.168.19.51:5060 SIP response 100

11/01/05 15:22:11 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:11
Send chid:33 ip:192.168.19.51:5060 SIP response 180

11/01/05 15:22:11 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:11
Recv chid:33 ip:192.168.19.50:5060 SIP method PRACK(7)

11/01/05 15:22:11 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:11
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:22:19 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:19
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:22:19 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:19
Recv chid:33 ip:192.168.19.50:5060 SIP method ACK(1)

11/01/05 15:22:19 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:19
Recv chid:33 ip:192.168.19.50:5060 SIP method other/unknown(6)

11/01/05 15:22:19 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:19
Send chid:33 ip:192.168.19.51:5060 SIP response 200
```

```
11/01/05 15:22:23 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:23
Send chid:33 ip:192.168.19.51:5060 SIP method BYE(2)

11/01/05 15:22:23 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:23
Recv chid:-1 ip:192.168.19.50:5060 SIP response 200

11/01/05 15:22:33 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:33
Recv chid:33 ip:192.168.19.50:5060 SIP INVITE

11/01/05 15:22:33 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:33
Send chid:33 ip:192.168.19.51:5060 SIP response 100

11/01/05 15:22:33 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:33
Send chid:33 ip:192.168.19.51:5060 SIP response 180

11/01/05 15:22:33 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:33
Recv chid:33 ip:192.168.19.50:5060 SIP method PRACK(7)

11/01/05 15:22:33 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:33
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:22:36 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:36
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:22:36 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:36
Recv chid:33 ip:192.168.19.50:5060 SIP method ACK(1)

11/01/05 15:22:36 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:36
Recv chid:33 ip:192.168.19.50:5060 SIP method other/unknown(6)

11/01/05 15:22:36 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:22:36
Send chid:33 ip:192.168.19.51:5060 SIP response 200
```

SIPCallTrace ch start_chNum end_chNum MsgRecv MsgSend

Syntax: **`SIPCallTrace ch start_chNum end_chNum MsgRecv MsgSend`**

Enable tracing of a range of virtual trunk channels.

The following table describes the command parameters.

Table 48: Command parameters

Parameter	Value	Description
start_chNum	0 to maximum channel number	Channel number to trace.
end_chNum	0 to maximum channel number	Channel number to trace. Must be greater than start_chNum.
MsgRecv	ON OFF	Specify whether to trace the messages sent to the specified channels.

Parameter	Value	Description
MsgSend	ON OFF	Specify whether to trace the messages sent from the specified channels.

```
oam> SIPCallTrace ch 033  38 on on
oam> 11/01/05 15:23:30 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:23:30 Send chid:33
ip:192.168.19.51:5060 SIP method BYE(2)

11/01/05 15:23:30 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:23:30
Recv chid:-1 ip:192.168.19.50:5060 SIP response 200

11/01/05 15:23:40 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:23:40
Recv chid:33 ip:192.168.19.50:5060 SIP INVITE

11/01/05 15:23:40 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:23:40
Send chid:33 ip:192.168.19.51:5060 SIP response 100

11/01/05 15:23:40 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:23:40
Send chid:33 ip:192.168.19.51:5060 SIP response 180

11/01/05 15:23:40 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:23:40
Recv chid:33 ip:192.168.19.50:5060 SIP method PRACK(7)

11/01/05 15:23:40 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:23:40
Send chid:33 ip:192.168.19.51:5060 SIP response 200    oam>

11/01/05 15:24:00 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:24:0
Recv chid:33 ip:192.168.19.50:5060 SIP method CANCEL(8)

11/01/05 15:24:00 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:24:0
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:24:00 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:24:0
Send chid:33 ip:192.168.19.51:5060 SIP response 487
```

SIPCallTrace num calling_number MsgRecv MsgSend

Syntax: **`SIPCallTrace num calling/called_number MsgRecv MsgSend`**

Enable tracing of SIP messages using the called and calling numbers. If the called or calling number of a virtual trunk session matches the number specified, then the messages to and from the virtual trunk are traced.

The following table describes the command parameters.

Table 49: Command parameters

Parameter	Value	Description
calling_number	1–32	The telephone number to trace on. May be a partial calling or called number.
MsgRecv	ON OFF	Specify whether to trace the messages sent to the specified channels.

Parameter	Value	Description
MsgSend	ON OFF	Specify whether to trace the messages sent from the specified channels.

```
oam> SIPCallTrace 5500 on on
oam> 11/01/05 15:19:56 LOG0006 SIPNPM: SIPCallTrace:

11/1/5 15:19:56
Recv chid:33 ip:192.168.19.50:5060 SIP INVITE

11/01/05 15:19:56 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:56
Send chid:33 ip:192.168.19.51:5060 SIP response 100

11/01/05 15:19:56 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:56
Send chid:33 ip:192.168.19.51:5060 SIP response 180

11/01/05 15:19:56 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:56
Recv chid:33 ip:192.168.19.50:5060 SIP method PRACK(7)

11/01/05 15:19:56 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:56
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:20:00 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:0
Recv chid:33 ip:192.168.19.50:5060 SIP method CANCEL(8)

11/01/05 15:20:00 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:0
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:20:00 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:0
Send chid:33 ip:192.168.19.51:5060 SIP response 487

11/01/05 15:20:16 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:16
Recv chid:33 ip:192.168.19.50:5060 SIP INVITE

11/01/05 15:20:16 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:16
Send chid:33 ip:192.168.19.51:5060 SIP response 100

11/01/05 15:20:17 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:17
Send chid:33 ip:192.168.19.51:5060 SIP response 180

11/01/05 15:20:17 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:17
Recv chid:33 ip:192.168.19.50:5060 SIP method PRACK(7)

11/01/05 15:20:17 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:17
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:20:21 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:21
Recv chid:33 ip:192.168.19.50:5060 SIP method CANCEL(8)

11/01/05 15:20:21 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:21
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:20:21 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:21
Send chid:33 ip:192.168.19.51:5060 SIP response 487

11/01/05 15:20:26 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:26
Recv chid:33 ip:192.168.19.50:5060 SIP INVITE

11/01/05 15:20:26 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:26
Send chid:33 ip:192.168.19.51:5060 SIP response 100

11/01/05 15:20:26 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:26
Send chid:33 ip:192.168.19.51:5060 SIP response 180

11/01/05 15:20:26 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:26
Recv chid:33 ip:192.168.19.50:5060 SIP method PRACK(7)
```

```
11/01/05 15:20:26 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:26
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:20:30 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:30
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:20:30 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:30
Recv chid:33 ip:192.168.19.50:5060 SIP method ACK(1)

11/01/05 15:20:30 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:30
Recv chid:33 ip:192.168.19.50:5060 SIP method other/unknown(6)

11/01/05 15:20:30 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:30
Send chid:33 ip:192.168.19.51:5060 SIP response 200

11/01/05 15:20:33 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:33
Recv chid:33 ip:192.168.19.50:5060 SIP method BYE(2)

11/01/05 15:20:33 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:20:33
Send chid:33 ip:192.168.19.51:5060 SIP response 200
```

SIPCallTrace num calling_num NPI TON MsgRecv MsgSend

Syntax: **`SIPCallTrace num calling_number NPI TON MsgRecv MsgSend`**

Trace SIP messages using the called and calling numbers. If the called or calling number of a virtual trunk session matches the number specified and the specified NPI and TON values match the call type, then the messages to and from the virtual trunk are traced.

The following table describes the command parameters.

Table 50: Command parameters

Parameter	Value	Description
calling_number	1–32	The telephone number to trace on. May be a partial calling or called number.
NPI	0–7	Specify the numbering plan identifier for which to trace calls. 0 = ALL NPIs 1 = Unknown 2 = ISDN/ telephone numbering plan (E.164) 3 = Private numbering plan 4 = E.163 5 = Telex numbering plan 6 = Data numbering plan 7 = National standard numbering plan
TON	–	Specify the type of number to use as a filter for tracing. Only calls using this TON setting will be traced. 0 = All TONs 1 = Unknown Number 2 = International Number 3 = National Number 4 = Network Specific Number 5 = Subscriber Number 6 = L1 Regional Number 7 = L0 Regional Number

Parameter	Value	Description
MsgRecv	ON OFF	Specify whether to trace the messages sent to the specified channels.
MsgSend	ON OFF	Specify whether to trace the messages sent from the specified channels.

```
oam> SIPCallTrace num 5500 3 7 on on

The trace settings for Num: 5500,  NPI: Private and TON: CDP were already available
as follows:
Number : 5500
NPI    : Undefined
TON    : Undefined
MsgRecv: On
MsgSend: On

oam> 11/01/05 15:19:19 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:19 Recv chid:33
ip:192.168.19.50:5060 SIP INVITE

11/01/05 15:19:19 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:19 Send chid:33 ip:
192.168.19.51:5060 SIP response 100

11/01/05 15:19:19 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:19 Send chid:33 ip:
192.168.19.51:5060 SIP response 180

11/01/05 15:19:19 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:19 Recv chid:33 ip:
192.168.19.50:5060 SIP method PRACK(7)

11/01/05 15:19:19 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:19 Send chid:33 ip:
192.168.19.51:5060 SIP response 200

11/01/05 15:19:21 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:21 Send chid:33 ip:
192.168.19.51:5060 SIP response 200

11/01/05 15:19:21 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:21 Recv chid:33 ip:
192.168.19.50:5060 SIP method ACK(1)

11/01/05 15:19:21 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:21 Recv chid:33 ip:
192.168.19.50:5060 SIP method other/unknown(6)

11/01/05 15:19:21 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:21 Send chid:33 ip:
192.168.19.51:5060 SIP response 200

11/01/05 15:19:23 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:23 Recv chid:33 ip:
192.168.19.50:5060 SIP method BYE(2)

11/01/05 15:19:23 LOG0006 SIPNPM: SIPCallTrace: 11/1/5 15:19:23 Send chid:33 ip:
192.168.19.51:5060 SIP response 200
```

SIPGwShow

Syntax: **`SIPGwShow`**

This command provides a snapshot summary of the state of the virtual trunk settings. This command assigns the channel ID a value of –1 by default. It does not show the virtual trunk status.

Note:

Channel ID must be a non-zero value.

```
oam> SIPGwShow
SIPNPM Status                : Active
Primary   Proxy IP address   : 192.168.19.51
Secondary Proxy IP address   : 192.168.19.61
Primary   Proxy port         : 5060
Secondary Proxy port         : 5060
Active    Proxy          : Primary  :Registered
Time To Next Registration    : 2013 Seconds
Channels Busy / Idle / Total : 0 / 6 / 6
Stack version             : 3.0.4.7
Channel tracing            : -1
Chan Direction CallState SIPState         MediaState  Codec                AirTime
FS  Fax DestNum RemoteIP
---- --------- --------- ---------------- ----------- ---------------------
------- --- --- ------- ---------------
```

SIPGwShow ch channelNum

Syntax: **`SIPGwShow ch channelNum`**

Prints a snapshot summary of the state of the virtual trunk settings, plus the snapshot of the active call on the specified channel if the call exists.

The following table describes the command parameters.

Table 51: Command parameters

Parameter	Value	Description
channelNum	0 to maximum channel number	Channel number to trace.

```
oam> SIPGwShow ch 33
SIPNPM Status                : Active
Primary   Proxy IP address   : 192.168.19.51
Secondary Proxy IP address   : 192.168.19.61
Primary   Proxy port         : 5060
Secondary Proxy port         : 5060
Active    Proxy          : Primary  :Registered
Time To Next Registration    : 1943 Seconds
Channels Busy / Idle / Total : 1 / 5 / 6
Stack version             : 3.0.4.7
Channel tracing            : -1
Chan Direction CallState SIPState         MediaState  Codec                AirTime
FS  Fax DestNum RemoteIP
---- --------- --------- ---------------- ----------- ---------------------
------- --- --- ------- ---------------
33   Terminate BUSY     Invite Received   SendRecv   G_711_u_law_20MS_NOVAD 61
Yes  No   5801     192.168.19.155
```

SIPGwShow num calling_number

Syntax: **SIPGwShow num calling_number**

Print a snapshot summary of the state of the virtual trunk settings plus the snapshot of the active calls using the calling, called, or partial number specified.

The following table describes the command parameters.

Table 52: Command parameters

Parameter	Value	Description
calling_number	0–32	Telephone number to trace.

```
oam> SIPGwShow num 5500
SIPNPM Status                : Active
Primary   Proxy IP address   : 192.168.19.51
Secondary Proxy IP address   : 192.168.19.61
Primary   Proxy port         : 5060
Secondary Proxy port         : 5060
Active    Proxy          : Primary  :Registered
Time To Next Registration    : 1583 Seconds
Channels Busy / Idle / Total : 1 / 5 / 6
Stack version             : 3.0.4.7
Channel tracing            : -1
Calling/Called Party Number: 5500
Numbering Plan Indicator: Undefined
Type Of Number: Undefined
Chan Direction CallState SIPState         MediaState  Codec                 AirTime
FS  Fax DestNum RemoteIP
---- --------- --------- ---------------- ----------- ----------------------
------- --- --- ------- ---------------
33   Terminate BUSY     Invite Received   SendRecv    G_711_u_law_20MS_NOVAD 10
Yes  No   5801     192.168.19.155
```

SIPGwShow num calling_number NPI TON

Syntax: **SIPGwShow num calling_number NPI TON**

Prints a snapshot summary of the state of the virtual trunk settings, plus the snapshot of the active calls using the calling or called number or partial number with the specified NPI and TON values.

The following table describes the command parameters.

Table 53: Command parameters

Parameter	Value	Description
calling_number	1–32	The telephone number to trace on. May be a partial calling or called number.
NPI	0–7	Specify the numbering plan identifier for which to trace calls. 0 = ALL NPIs 1 = Unknown 2 = ISDN/ telephone numbering plan (E.164) 3 = Private numbering plan 4 = E.163 5 = Telex numbering plan 6 = Data numbering plan 7 = National standard numbering plan
TON	0–7	Specify the type of number to use as a filter for tracing. Only calls using this TON setting are traced. 0 = All TONs 1 = Unknown Number 2 = International Number 3 = National Number 4 = Network Specific Number 5 = Subscriber Number 6 = L1 Regional Number 7 = L0 Regional Number
MsgRecv	ON OFF	Specify whether to trace the messages sent to the specified channels.
MsgSend	ON OFF	Specify whether to trace the messages sent from the specified channels.

```
oam> SIPGwShow num 5500 3 7
SIPNPM Status                : Active
Primary   Proxy IP address   : 192.168.19.51
Secondary Proxy IP address   : 192.168.19.61
Primary   Proxy port         : 5060
Secondary Proxy port         : 5060
Active    Proxy          : Primary  :Registered
Time To Next Registration    : 1524 Seconds
Channels Busy / Idle / Total : 1 / 5 / 6
Stack version             : 3.0.4.7
Channel tracing            : -1
Calling/Called Party Number: 5500
Numbering Plan Indicator: Private
Type Of Number: CDP
Chan Direction CallState SIPState         MediaState  Codec                AirTime
FS  Fax DestNum RemoteIP
---- --------- --------- ---------------- ---------- ---------------------
------- --- --- ------- --------------
33   Terminate BUSY     Invite Received   SendRecv   G_711_u_law_20MS_NOVAD 69
Yes  No   5801     192.168.19.155
```

SIPOutput

Syntax: **`SIPOutput output_destination "file_pathname"`**

Specify where to direct the output for the trace tool.

The following table describes the command parameters.

Table 54: Command parameters

Parameter	Value	Description
output_destinatio n	1–3	Specify where to direct all trace messages for the SIPCallTrace. 1 = TTY 2 = RPTLOG 3 = file
file_pathname	"string"	Specify the file to output to, if output_destination = 3. Enclose the string in quotation marks.

SIPTraceShow

Syntax: **SIPTraceShow**

Display trace settings, including the output destination, file name, and all active traces for the SIPCallTrace trace tool.

spyHelp

Syntax: **spyHelp**

Display the VxWorks help menu for the spy functions. The VxWorks spy function displays the task activity (real time usage) by monitoring the tasks and printing a summary at the specified interval. This command can help you determine if one task is running constantly and using all the CPU real time for the card. The monitoring and report printing itself uses some real time, so it is usually turned on, measurements taken, and then turned off.

```
-> spyHelp
spyHelp                       Print this list
spyClkStart [ticksPerSec]     Start task activity monitor running at ticksPerSec
ticks per second
spyClkStop                    Stop collecting data
spyReport                     Prints display of task activity statistics
spyStop                       Stop collecting data and reports
spy [freq[,ticksPerSec]]  Start spyClkStart and do a report every freq seconds

ticksPerSec defaults to 100.  freq defaults to 5 seconds.
value = 0 = 0x0
```

ssdShow

Syntax: **ssdShow**

Displays the state of the SSD message trace.

```
-> ssdShow

Trace all input  = off
Trace all output = off

Channel     TN     Handle   I O
---------- ------ ---------- - -
0x3a873ac  0x6005 0x033cad78 0 0 0x33cd708  0x6006 0x033c9560 0 0
value = 33 = 0x21 = '!'
```

ssdTrace

Syntax: **`ssdTrace 0xSetTN, inMsg, outMsg`**

Controls the printing of SSD messages exchanged between the TPS and the Call Server CPU for a terminal. The default is off for both incoming and outgoing messages; the state is not saved and returns to off if the card is reset or reboots.

The following table describes the command parameters.

Table 55: Command parameters

Parameter	Value	Description
0xSetTN	–	TN of the IP Phone, in hexadecimal format (preceded by "0x"). To get a telephone TN, use the dsetShow command.
inMsg	0 1	0 = disables printing of SSD messages to the TPS 1 = enables printing of SSD messages to the TPS
outMsg	0 1	0 = disables printing of SSD messages from the TPS card 1 = enables printing of SSD messages from the TPS card

Note:

The enable all TN option (–1) on a busy TPS with caution due to the number of messages printed for each call. Remember, not only are call processing messages printed, and all lamp audit messages are printed.

You can temporarily turn off the lamp audit function from LD 77 (the password is 9950). Enter dlmp=1 to turn off lamp audit and dlmp=0 to turn it on. You can also turn on SSD messages at the Call Server side (for comparison) through LD 77. To turn on the messaging, enter **`dmtn <tag #><TN>`**. To turn off the messaging, enter **`kill <tag #>`**.

Entering only some of the parameters is the same as setting those not entered to zero, so **`ssdTrace 0xTN`** turns off printing in both directions, while **`ssdTrace 0xTN,1`** turns on printing for incoming messages and turn off outgoing message printing. A partial entry with "all TN" -1 provides a quick way to disable all printing: enter "ssdTrace -1".

Comparing the captured SSD trace with the one produced from LD 77 on the Call Server can identify if any SSD messages are lost. The point of reference for the direction of the messages is reversed when comparing the two log files: SSDO on the Call Server trace is SSDI on the ITG trace.

For each message, the following prints:

- task receiving or sending message
- timestamp when message was processed by the TPS
- syslog priority of this printout (all are Info messages)
- TN of the IP Phone sending or receiving the message
- direction of message flow relative to ITG (SSDI for incoming messages from the Call Server, or SSDO for outgoing messages to Call Server)
- a hexadecimal word of the SSD message contents

```
-> ssdTrace 0x6005,1,1
value = 56170928 = 0x35919b0
->

SEP 05 17:43:49 tSET: Info SSDO 6005 91FF
SEP 05 17:43:49 tSET: Info SSDI 6005 9404
SEP 05 17:43:49 tSET: Info SSDI 6005 9404
SEP 05 17:43:49 tSET: Info SSDI 6005 94C1
SEP 05 17:43:49 tSET: Info SSDI 6005 90F0
SEP 05 17:43:49 tSET: Info SSDI 6005 1401
SEP 05 17:43:51 tSET: Info SSDO 6005 91D4
SEP 05 17:43:51 tSET: Info SSDI 6005 1134
SEP 05 17:43:51 tSET: Info SSDO 6005 9114
SEP 05 17:43:52 tSET: Info SSDO 6005 91D0
SEP 05 17:43:52 tSET: Info SSDI 6005 1130
SEP 05 17:43:52 tSET: Info SSDO 6005 9110
SEP 05 17:43:52 tSET: Info SSDO 6005 91D0
SEP 05 17:43:52 tSET: Info SSDI 6005 1130
SEP 05 17:43:52 tSET: Info SSDO 6005 9110
SEP 05 17:43:52 tSET: Info SSDO 6005 91D0
SEP 05 17:43:52 tSET: Info SSDI 6005 1130
SEP 05 17:43:52 tSET: Info SSDI 6005 1406
SEP 05 17:43:52 tSET: Info SSDO 6005 9110
SEP 05 17:43:54 tSET: Info SSDI 6005 1408
SEP 05 17:43:58 tSET: Info SSDO 6005 913F
SEP 05 17:43:58 tSET: Info SSDI 6005 9401
SEP 05 17:43:58 tSET: Info SSDI 6005 9404
SEP 05 17:43:58 tSET: Info SSDI 6005 1400
SEP 05 17:43:58 tSET: Info SSDI 6005 1400
SEP 05 17:43:58 tSET: Info SSDI 6005 9000
```

syslogLevelSet

Syntax: **`syslogLevelSet task, level`**

Control the printing of detailed information from a task. To change information for multiple tasks, enter this command multiple times.

The following table describes the command parameters.

Table 56: Command parameters

Parameter	Value	Description
task	–	Specify the module for this entry of the command. The name of the task as printed by the logShow (VGMC), syslogShow or i (VGMC/Signaling Server) command is used. tSnmpd = SNMP daemon task tSntpsTask = SNTP Server task tXA, tA07, tRDP = SSD driver interface tMAM = Maintenance Admin Module tMVX_XSPY = Telogy SPY (debugger) tMVX_DIM = Telogy Dsp Interface Module tOMM = Operational Measurement Module tVTM = Virtual Terminal Manager tVTI = Virtual Terminal Interface tSET = Digital Set Emulator tCSV =Connect Server tTPS = Terminal Proxy Server tTCK = TPS Socket Task tUMS = UMS Server tUMC = UMS Client tVGW = Voice Gateway tRTP = Real Time Protocol tRTCP = Real Time Control Protocol tTelnetOutTask = Telnet output task tTelnetInTask = Telnet input task tyLstnr tShell = VxWorks Shell task
level	0–7	Determines the information printed. Assigning a level to a task ensures messages of that level and lower to print. 0 = Emergency, system is unusable 1 = Alert, action must be taken immediately 2 = Critical, critical conditions 3 = Error, error conditions 4 = Warning, warning conditions 5 = Notice, normal but significant condition 6 = Info, informational 7 = Debug, debug level messages By default, most tasks are set to Info. When troubleshooting a problem, it is often useful to set the level to Debug to get more detailed information from a task.

```
-> syslogLevelSet tMAM, 7
value = 6 = 0x6
```

syslogShow

Syntax: **`syslogShow`**

On the Signaling Server, logShow provides little information, so use this command to obtain the log output level for the task. On the VGMC, this command is similar to the logShow command, but prints only the task and level information and works only from the VxWorks shell. Use this command with the syslogLevelSet command.

The following example shows the Signaling Server output (includes not only LTPS tasks but also VTRK and Gatekeeper).

```
 -> syslogShow
Task          Level
-------------------- -------
tSysWork             none
tExcTask             none
tLogTask             none
tAioWait             none
tAioIoTask1          none
tAioIoTask0          none
tNetTask             none
tPortmapd            none
tFtpdTask            none
tTftpdTask           none
tWdbTask             none
tRptd                none
tLogin               none
tLogin               none
tRLogind             none
tTelnetd             none
tSnmpd               none
tPxTimer             none
tbootpd              none
tSNTPC               Info
tRDP                 Info
tMAM                 Info
tOMM                 Info
tELC                 Info
tVTM                 Info
tVTI                 Info
tSET                 Info
tCSV                 Info
tTPSAR               Info
tTPS                 Info
tTPSARReceive        none
tfwBk                Info
tUMS                 Info
tUMC                 Info
tVTK                 Info
tNPM                 Info
tXMSG                Info
tHTTPd               none
tHTTPd               none
tHTTPd               none
tHTTPd               none
shell                none
tPBX                 Info
tTelnets38           none
tLogin               none
tTelnetc38           none
shell                none
tShell               Info
value = 5 = 0x5
```

The following example shows command output for SMC.

```
-> syslogShow
Task          Level
-------------------- -------
tExcTask             none
tLogTask             none
```

```
tAioWait            none
tAioIoTask1         none
tAioIoTask0         none
tPcmciad            none
tDcacheUpd          none
tNetTask            none
tTelnetd            none
tPortmapd           none
tFtpdTask           none
tTftpdTask          none
tSnmpd              none
tSyslogd            none
tMonTask            none
tPxTimer            none
tbootpd             none
tSNTPC              none
baseMMintTask       none
tXA                 Info
tA07                Info
tRDP                Info
tMAM                Info
tMVX_XSPY           none
tMVX_DIM            Info
tOMM                Info
tPBX                Info
tELC                Info
tVGW                Info
tRTP                Info
tRTCP               Info
tXMSG               Info
midnightTask        none
tShell              none
tTelnetOutTask      none
tTelnetInTask       none
tyLstnr             none
value = 5 = 0x5
```

swVersionShow

Syntax: **swVersionShow**

Print the card VGMC application software version.

```
-> swVersionShow
Installed Image:     VGMC SSE-2.00.70_VGMC-3.00.70_10_07_2002.2099 (ITGSA) -
Monday October  7 13:44:38 EDT 2002
value = 0 = 0x0
```

The following example shows command output on the Signaling Server.

```
-> swVersionShow
sse-2.00.74 Wednesday October 16 2002 20:04:18 EDT
Loaded Modules:
share.obj           sse-2.00.74
line.obj            sse-2.00.74
trunk.obj           sse-2.00.74
gk.obj              sse-2.00.74
web.obj             sse-2.00.74
value = 0 = 0x0
```

tcpstatShow

Syntax: **`tcpstatShow`**

Display the TCP protocol statistics.

```
-> tcpstatShow
TCP:
0 packet sent
0 data packet (0 byte)
0 data packet (0 byte) retransmitted
0 ack-only packet (0 delayed)
0 URG only packet
0 window probe packet                 0 window update packet
0 control packet
0 packet received
0 ack (for 0 byte)
0 duplicate ack
0 ack for unsent data
0 packet (0 byte) received in-sequence
0 completely duplicate packet (0 byte)
0 packet with some dup. data (0 byte duped)
0 out-of-order packet (0 byte)
0 packet (0 byte) of data after window
0 window probe
0 window update packet
0 packet received after close
0 discarded for bad checksum
0 discarded for bad header offset field
0 discarded because packet too short
0 connection request
0 connection accept
0 connection established (including accepts)
0 connection closed (including 0 drop)
0 embryonic connection dropped
0 segment updated rtt (of 0 attempt)
0 retransmit timeout
0 connection dropped by rexmit timeout
0 persist timeout
0 keepalive timeout
0 keepalive probe sent
0 connection dropped by keepalive
0 pcb cache lookup failed
value = 27 = 0x1b
```

tLanDuplexSet

Syntax: **`tLanDuplexSet duplexMode`**

Configure the duplex mode of the TLAN interface while operating in 10BaseT mode. The command takes effect immediately. The duplex mode setting is saved in NVRAM and read at startup.

The following table describes the command parameters.

Table 57: Command parameters

Parameter	Value	Description
duplexMode	0 1	0 = enables full duplex mode 1 = enables half duplex mode

tLanSpeedSet

Syntax: **`tLanSpeedSet`**

Configure the speed of the TLAN interface. By default, this interface autonegotiates to the highest speed supported by the hub or switch; with a 10/100BaseT switch, the interface negotiates to 100BaseT. This command is useful to debug Ethernet speed-related problems and to force the interface to 10BaseT operation; the command takes effect immediately. The duplex mode setting is saved in NVRAM and read at startup.

Use the command CardShow to check the current speed of the TLAN interface.

The following table describes the command parameters.

Table 58: Command parameters

Parameter	Value	Description
speed	10 10100	10 = enable 10MB-only operation 10100 = enable autonegotiation

tpsARShow

Syntax: **`tpsARShow`**

Display information about the Gatekeeper address resolution task (tpsAR).

```
-> tpsARShow
Active Connect Server Type  : Primary
Active Connect Server IP    : 192.168.0.50
Active Connect Server port  : 16500
Currently there are 0 outstanding DN to IP translation requests
2 Connect Servers Configured
========================================
Primary Connect Server IP    : 192.168.0.50
Primary Connect Server Port  : 16500
Alternate Connect Server IP    : 23.24.25.26
Alternate Connect Server Port  : 16500
Connect Server Timeout       : 10
```

```
========================================
value = 41 = 0x29 = ')'
```

tpsARTrace

Syntax: **`tpsARTrace "type", "trace_id"`**

Turn on the trace for a specified identifier, trace_id. It allows the tracing of the tpsAR protocol used to determine where a telephone registers to.

The following table describes the command parameters.

Table 59: Command parameters

Parameter	Value	Description
type	ALL IP ID	Trace type. ALL = any trace type IP = search on an IP address ID = search on an identifier, such as DN or H323 alias
trace_id	"string"	Trace identifier, such as an IP address, DN, or alias.

The following example shows a search on an NCS, node, or TLAN IP address.

```
tpsARTrace "IP","192.168.2.2"
```

The following example shows a search on an H323 alias.

```
tpsARTrace "ID","MyH323Alias"
```

The following example shows a search on a DN that is logging in.

```
tpsARTrace "ID","7778"
```

tpsARTraceHelp

Syntax: **`tpsARTraceHelp`**

Print a list of all CLIs for tracing the tpsAR protocol messages. The output describes each CLI parameter.

tpsARTraceSettings

Syntax: **`tpsARTraceSettings`**

Display the current trace settings.

tpsAROutput

Syntax: **`tpsAROutput trace_output, "file_name"`**

Assign the output destination for the trace tool.

The following table describes the command parameters.

Table 60: Command parameters

Parameter	Value	Description
trace_output	1–4	An integer value specifying the trace output destination: 1 = TTY 2 = SYSLOG 3 = File 4 = File and TTY
filename	"string"	Specify the file to output to if trace_output = 3 or 4. You can enter the complete path name. If you enter only the file name, the default path is C:/ file_name. Enclose the string in quotation marks.

```
-> tpsAROutput 1, "trace.txt"
value = 0 = 0x0
```

tpsARTraceOff

Syntax: **`tpsARTraceOff "trace_id"`**

Turn off the trace for the specified trace identifier, trace_id.

```
-> tpsARTraceOff "7778"
value = 0 = 0x0
```

tpsARTraceAllOff

Syntax: **`tpsARTraceAllOff`**

Turn off the trace for all trace identifiers.

tpsRemoteShow

Syntax: **`tpsRemoteShow level`**

Display the current Gate Keeper query or Remote Monitoring query list under monitoring by TPS task for Virtual Office and Branch Office feature. The parameter level controls the amount of displayed information. The default value of 0 shows the basic GK query and RM query list. Values greater than 0 shows additional details about the GK and RM query.

```
-> tpsRemoteShow

TPS Remote Communication Manager
*********  GK Query List ***********
Outstanding Query:   0
TimeoutUnit:            500 ms
GK query timeout:       300
GK query timeout count: 0

*********  Remote TPS monitoring ***********
Outstanding Monitors:   0
TimeoutUnit:            500 ms
Num of Polls:           10
Monitor Interval        150000 ms
Next timeout in 250 msec
value = 25 = 0x19
->

-> tpsRemoteShow 4
TPS Remote Communication Manager
*********  GK Query List ***********
Outstanding Query:   1
TimeoutUnit:            500 ms
GK query timeout:       300
GK query timeout count: 22
requestNumber = 0xffff, ton = 4, DN = 2011, retry = 0xfefe, retryType = 0x100

*********  Remote TPS monitoring ***********
Outstanding Monitors:   0
TimeoutUnit:            500 ms
Num of Polls:           10
Monitor Interval        150000 ms
Next timeout in 400 msec value = 0 = 0x0
```

tpsShow

Syntax: **`tpsShow`**

List information relevant to the TPS. If more than one card in the system, then this table (on the Leader card only) lists all VGMC or Signaling Servers in the node with their IP addresses and TN. If a card does not appear that should, then the registration process between the Follower and Leader was not successful.

The following table describes the data parameters output by this command and how to interpret them.

Table 61: Data output

Parameter	Description
Node ID	Node to which this card belongs
Is master	Set to 1 if this card is the master
Up Time	Duration in seconds the card has been up
TN	Card physical TN (not displayed for Signaling Server)
IP TLAN	IP address of card on the TLAN
IP ELAN	IP address of card on the ELAN
ELAN Link	Status of ELAN link with Call Server (not port carrier status)
Sets Connected	Number of telephones registered with this TPS card including the amounts of phones registered with INSEC, USEC and DTLS signaling encryption
Sets Reserved	Sets with a spot reserved on this card but have not yet completed reservation process

The following example shows command output on the SMC.

```
VGMC> tpsShow
Node ID       : 3556
Is master     : 0
Up time       : 2 days, 22 hours, 23 mins, 35 secs  (253415 secs)
TN            : 05-00
Platform      : ITG SA
TPS Service   : Yes
IP TLAN       : 47.11.215.143
IP ELAN       : 47.11.216.174
ELAN Link     : Up
Sets Connected: 2 Sets
Reserved : 0
```

Example Signaling Server output:

```
 [admin2@bvw0 ~]$ tpsShow
=== TPS ===
Node ID       : 3671
Is master     : 1
Up time       : 4 days, 3 hours, 34 mins, 38 secs  (358478 secs)
Server Type   : Signaling Server
Platform      : HP DL320G4 TPS Service   : Yes
IP TLAN       : 192.168.25.130
IP ELAN       : 192.168.24.130
ELAN Link     : Up
Sets Connected: 85 (DTLS: 35    USec: 30    Insecure: 20)
Sets Reserved: 0
```

Field	Description
Node ID	Node this card belongs to
Is master	Set to 1 if this card is the master
Up Time	Duration in seconds the card has been up
TN	Card’s physical TN (not displayed for SS)
IP TLAN	IP address of card on the TLAN
IP ELAN	IP address of card on the ELAN
ELAN Link	Status of ELAN link with Call Server (not port carrier status)
Sets Connected	Number of sets registered with this TPS card including the amounts of phones registered with INSEC, USEC and DTLS signaling encryption.
Sets Reserved	Sets with a spot reserved on this card but have not yet completed reservation process

tpsSocketShow

Syntax: **`tpsSocketShow`**

Display information about the TPS sockets used for communication with other cards.

The following example shows output from the Master node.

```
-> tpsSocketShow  Communication Style: Broadcast
Tx port            : 16543
Tx Socket          : 40
Tx socket addr     : 192.168.1.255
Rx port            : 16543
Rx IP              : 0.0.0.0
Rx Socket          : 40
Rx socket addr     : 0.0.0.0
value = 29 = 0x1d
```

The following example shows output from a Follower node.

```
-> tpsSocketShow
Communication Style: Multicast
Tx port            : 16543
Tx Socket          : 41
Tx socket addr     : 192.168.1.140
Rx port            : 16543
Rx IP              : 0.0.0.0
Rx Socket          : 41
Rx socket addr     : 0.0.0.0
value = 29 = 0x1d
```

tpsSocketTraceSet

Syntax: **`tpsSocketTraceSet traceState`**

This message trace is useful for debugging Master election problems.

The following table describes the command parameters.

Table 62: Command parameters

Parameter	Value	Description
traceState	0 1	1 = enable printing of a message each time a message is received or transmitted from the TPS task 0 = disable the message printing (default)

The following example shows output from the Master node.

```
-> tpsSocketTraceSet 1
value = 1 = 0x1
->
FEB 23 12:36:49 tTPS: Info change comm style to Broadcast
FEB 23 12:36:49 tTCK: Info socket msg from 192.168.1.140, len 16
FEB 23 12:36:49 tTCK: Info socket msg from 192.168.1.140, len 16
FEB 23 12:36:49 tTPS: Info send msg from 192.168.1.140 to 192.168.1.255
```

tsm_set_rx_gain chNum, gain_value

Syntax: **`tsm_set_rx_gain chNum, gain_value`**

Assign a DSP channel receive gain (gain for audio in from the IP Phone) for the active call. This command applies only to the VGMCs.

After the call is dropped, the gain adjustment is reset. This command is intended for temporary problem debugging only, not for actual loss plan changes.

The following table describes the command parameters.

Table 63: Command parameters

Parameter	Value	Description
chNum	–	Channel number.
gain_value	–14 to 14	DSP gain, in the range of –14 to +14 dB. Positive values are louder.

```
-> tsm_set_rx_gain 0,6
value = 0 = 0x0
```

tsm_set_tx_gain chNum, txGain, txInGain

Syntax: **`tsm_set_tx_gain chNum, txGain, txInGain`**

This command sets a DSP channel transmit gain (gain for audio out towards the IP Phone) for the active call. This command applies only to the VGMCs.

The following table describes the command parameters.

Table 64: Command parameters

Parameter	Value	Description
chNum	–	Channel number of the call on the VGMC.
txInGain	–14 to 14	Gain register located between the TDM interface and the echo canceller. Assigns the DSP gain, in the range of –14 to +14 dB. Positive values are louder.
txGain	–14 to 14	Gain register located between the echo canceller and the IP network. Assigns the DSP gain, in the range of –14 to +14 dB. Positive values are louder. This parameter provides more control over the audio levels of the echo canceller.

```
-> tsm_set_tx_gain 0,-4, 6
value = 0 = 0x0
```

tsm_stat_req_ecdbg

Syntax: **`tsm_stat_req_ecdbg chNum`**

Return the echo canceller debug statistics for a channel. This command applies only to the VGMCs.

The following table describes the command parameters.

Table 65: Command parameters

Parameter	Value	Description
chNum	–	Channel number of the call on the VGMC.

The following table describes the data parameters printed by this command.

Table 66: Data output

Parameter	Description
Px level Py level Pe level	Instantaneous power level of far end (IP Phone talker), near end (remote) user, and error level (echo residual before NLP). Max value is 228 (268,435,456) = +3 dbm0 (All values are in Q4).
erl_estimate	Estimated ERL in Q4 (hybrid loss); dividing by 16 gives ERL in dB.
acom_estimate	Estimated ACOM in Q4
len	length [x] of internal use array
internal_use[0,x]	Values of internal use array

The following example shows the output for an application load with the version 7.0.6.38 Telogy code.

```
MAR 18 15:40:03 tMVX_DIM: Info TSG: 0 Echo Canceller Debug Stats
MAR 18 15:40:03 tMVX_DIM: Info   Px level            = -739
MAR 18 15:40:03 tMVX_DIM: Info   Py level            = -962
MAR 18 15:40:03 tMVX_DIM: Info   Pe level            = -963
MAR 18 15:40:03 tMVX_DIM: Info   acom_estimate       = 511
MAR 18 15:40:03 tMVX_DIM: Info   len                 = 25
MAR 18 15:40:03 tMVX_DIM: Info   ERLE estimate       = 521
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[0]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[1]    = 0x150
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[2]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[3]    = 0x110
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[4]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[5]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[6]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[7]    = 0x7
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[8]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[9]    = 0x1c
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[10]    = 0x1
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[11]    = 0x3f33
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[12]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[13]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[14]    = 0x2
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[15]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[16]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[17]    = 0xa
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[18]    = 0x7
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[19]    = 0xf24c
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[20]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[21]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[22]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[23]    = 0x0
MAR 18 15:40:03 tMVX_DIM: Info TCID 0, internal_use[24]    = 0x0
```

tsm_stat_req_magdbg

Syntax: **`tsm_stat_req_magdbg chNum, clear`**

Return the echo canceller MIPS agent debug statistics for a given channel. This command applies only to the VGMCs.

The following table describes the command parameters.

Table 67: Command parameters

Parameter	Value	Description
chNum	–	Channel number of the call on the VGMC.
clear	0 1	0 = Do not clear statistics after display. 1 = Clear statistics after display.

```
-> tsm_stat_req_magdbg 0,0
value = 0 = 0x0
->
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[0]    = 0x1
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[1]    = 0x7c00
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[2]    = 0x0
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[3]    = 0x11cd
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[4]    = 0x0
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[5]    = 0x0
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[6]    = 0x1
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[7]    = 0x6a33
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[8]    = 0x1
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[9]    = 0x5c3f
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[10]    = 0x0
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[11]    = 0x9a4
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[12]    = 0x0
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[13]    = 0x22ce
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[14]    = 0x0
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[15]    = 0x1446
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[16]    = 0x1
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[17]    = 0x1
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[18]    = 0xe24c
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[19]    = 0x400
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[20]    = 0x100
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[21]    = 0x100
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[22]    = 0x1
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[23]    = 0x1
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[24]    = 0x450
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[25]    = 0x11cd
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[26]    = 0x0
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[27]    = 0x0
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[28]    = 0x22ce
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[29]    = 0x1446
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[30]    = 0x9a4
MAR 19 09:30:07 tMVX_DIM: Info TCID 0, internal_use[31]    = 0x0
```

tsm_stat_req_error

Syntax: **`tsm_stat_req_error chNum`**

Return the current errors detected by the DSP for the specified channel. This command applies only to the VGMCs. The variable DimDspStat = must be assigned a value of 1 for this command to produce output.

The following data appears:

- Number of incoming voice packets dropped by the DSP due to invalid generic voice header syntax.
- Number of transmit voice packets dropped due to voice buffer overflow (buffer to micro was busy when DSP attempted to send packet).
- Estimated number of lost incoming enhancement voice packets (two core packets received without intervening enhancement). This is only for E-ADPCM, which is not used on this product.
- Number of dropped incoming enhancement voice packets due to absence of a core packet. This is only for E-ADPCM, which is not used on the CS 1000.
- Number of packets lost by the network, that is, from missing incoming RTP sequence numbers.

You can enter this command repeatedly during a call. The counter values are not reset until a new call is made.

The following table describes the command parameters.

Table 68: Command parameters

Parameter	Value	Description
chNum	–	Channel number of the call on the VGMC.

Example SMC output:

```
-> tsm_stat_req_error 0
value = 0 = 0x0
->
NOV 21 15:19:52 tMVX_DIM: Info TCID 0, invalid_header_count    = 0
NOV 21 15:19:52 tMVX_DIM: Info TCID 0, to_micro_overflow_count = 0
NOV 21 15:19:52 tMVX_DIM: Info TCID 0, rx_routing_dropped      = 0
NOV 21 15:19:52 tMVX_DIM: Info TCID 0, lost_enh_packet_count   = 0
NOV 21 15:19:52 tMVX_DIM: Info TCID 0, no_core_packet_count    = 0
NOV 21 15:19:52 tMVX_DIM: Info TCID 0, pkt_lost_by_network     = 0
NOV 21 15:19:52 tMVX_DIM: Info TCID 0, rc4key_update_lost_pkt_count = 0
NOV 21 15:19:52 tMVX_DIM: Info TCID 0, invalid_mac_header_count = 0
NOV 21 15:19:52 tMVX_DIM: Info TCID 0, invalid_ssrc_count      = 0  NOV 21 15:19:52
tMVX_DIM: Info TCID 0, invalid_payload_count   = 0 ->
```

tsm_stat_req_rx_tx

Syntax: **`tsm_stat_req_rx_tx chNum`**

Return data for the current call on the channel. This command applies only to the VGMCs. You must assign the variable DimDspStat = a value of 1 for this command to produce output.

You can repeat the query for the duration of the call. The counts are reset at the beginning of the next call.

Receive (RX) and Transmit (TX) are from the card perspective. Receive (RX) is from the telephone, and Transmit (TX) is to the telephone.

This command produces the following output:

- number of Receive (RX) packets sent for playout
- number of Transmit (TX) packets the DSP has written to the voice data buffer
- number of voice frames on Transmit (TX) side classified as silence
- minimum jitter
- maximum jitter

When VAD is disabled, the Receive (RX) and Transmit (TX) packet counts are close in value.

The following table describes the command parameters.

Table 69: Command parameters

Parameter	Value	Description
chNum	–	Channel number of the call on the VGMC.

Example ITG-P or SMC card output:

```
-> tsm_stat_req_rx_tx 0
value = 0 = 0x0
->
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, rx_packet_count      = 2979
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, tx_packet_count      = 2983
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, silence_packet_count = 0
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, min_jitter           = 18
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, max_jitter           = 22
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, rtp_average_jitter   = 0
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, tx_grant_sync_drop   = 0
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, tx_octets            = 477280
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, rx_octets            = 476640
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, aal2_cod_prof_chgs   = 0
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, dtmf_tx_octets       = 0
JAN 01 14:33:39 tMVX_DIM: Info TCID 0, dtmf_rx_octets       = 0
```

tsm_stat_req_tele_levels

Syntax: **`tsm_stat_req_tele_levels chNum`**

Return the current audio levels measured in the DSP for the specified gateway channel. This command applies only to the VGMCs. Receive (RX) and Transmit (TX) are from the VGMC perspective. Transmit (TX) means towards the TDM and Receive (RX) means from it. The following data is displayed:

- Receive (RX) power in 0.1 dBm units
- Transmit (TX) power in 0.1 dBm units
- Receive (RX) mean in 0.1 linear PCM units (ignore, apparently is not accurate)
- Transmit (TX) mean in 0.1 linear PCM units (ignore, apparently is not accurate)

You can repeat the query for the duration of the call. The counts are reset at the beginning of the next call.

The following table describes the command parameters.

Table 70: Command parameters

Parameter	Value	Description
chNum	–	Channel number of the call on the VGMC.

```
-> tsm_stat_req_tele_levels 0
value = 0 = 0x0
->
JAN 17 14:44:59 tMVX_DIM: Info TCID =0 rx_level = -610
JAN 17 14:44:59 tMVX_DIM: Info TCID =0 tx_level = -610
JAN 17 14:44:59 tMVX_DIM: Info TCID =0 rx_mean  = -40
JAN 17 14:44:59 tMVX_DIM: Info TCID =0 tx_mean  = -20  ->
```

tsm_stat_req_vp_delay

Syntax: **`tsm_stat_req_vp_delay chNum`**

Return the DSP Voice Playout Unit (VPU) statistics for the call on the channel specified. This command applies only to the VGMCs. The variable DimDspStat = must be assigned a value of 1 for this command to produce output. The VPU operates on segments of 10 milliseconds of voice. The following data prints:

- number of lost segments during the call based on the missing sequence number
- number of segments replayed due to the lost packets
- number of idle (noise) segments being played out due to either lost packets or voice playout FIFO buffer underrun
- number of voice segments dropped due to the voice playout FIFO buffer over-run
- total number of segments submitted by packetization unit for playout
- average frame jitter seen from network (in Telogy 7.01 output only).

You can repeat the query for the duration of the call. The counts are reset at the beginning of the next call.

The following table describes the command parameters.

Table 71: Command parameters

Parameter	Value	Description
chNum	–	Channel number of the call on the VGMC.

```
-> tsm_stat_req_vp_delay 0
value = 0 = 0x0
->
JAN 01 14:33:21 tMVX_DIM: Info TCID 0, avg_playout_delay    = 60
JAN 01 14:33:21 tMVX_DIM: Info TCID 0, lost_packet_count    = 0
JAN 01 14:33:21 tMVX_DIM: Info TCID 0, replay_packet_count  = 0
JAN 01 14:33:21 tMVX_DIM: Info TCID 0, idle_packet_count    = 0
JAN 01 14:33:21 tMVX_DIM: Info TCID 0, dropped_packet_count = 0
JAN 01 14:33:21 tMVX_DIM: Info TCID 0, rx_packet_count      = 4140
JAN 01 14:33:21 tMVX_DIM: Info TCID 0, avg_frame_jitter     = 0 ->
```

udpstatShow

Syntax: **`udpstatShow`**

Displays the UDP protocol statistics.

```
-> udpstatShow
UDP:
2880748 total packets
1443277 input packets
1437471 output packets
0 incomplete header
0 bad data length field
0 bad checksum
4186 broadcasts received with no ports
0 full socket
1433985 pcb cache lookups failed
968 pcb hash lookups failed
value = 29 = 0x1d
```

uftpFwDnldMon

Syntax: **`uftpFwDnldMon "IPAddr"`**

Debug the UFTP IP Telephone Firmware Download if you encounter a problem. This command provides detailed information about the UFTP download operation and helps you locate the source of the problem.

The following table describes the command parameters.

Table 72: Command parameters

Parameter	Value	Description
IPAddr	"string"	Optional. IP address of the telephone to monitor.

To enable the download monitor function, enter a valid IP address for the IP Phone. Example enabling the UFTP monitor for an IP Phone:

```
-> uftpFwDnldMon "47.11.217.20"
UFTP F/W Download monitor is enabled to monitor set with IP 47.11.217.20
```

To disable the monitor function, enter the command without passing any parameter.

The following example shows the output for disabling the UFTP monitor.

```
-> uftpFwDnldMon Input is empty. UFTP F/W Download monitor is disabled.
```

uftpNodeShow

Syntax: **`uftpNodeShow`**

Provide a complete UFTP IP Telephone Firmware Download Summary of each node. The output includes the cards in the node that are configured but do not respond.

Each node summary contains the following information:

- Index
- TN (in format l s c u)
- Host Type
- TLAN IP Address
- Active Download Count (Act)
- Server Up Time (Srv Up Time)

- Successful Download Count (Ok)
- Failure Download Count (Fail)

The following example shows command output.

```
oam> uftpNodeShow

Retrieving information form the peer(s), please wait!

--------- UFTP IP Phone Firmware Download Summary for Node 5488 ---------
Index  TN        Host Type   TLAN IP Addr      Act    Srv Up Time     Ok      Fail
01              ISP 1100    47. 11.213. 83    002    0000 01:36:12   00070   00001
02    100 1 15  SMC         47. 11.213. 79    001    0000 02:25:10   00050   00001
03    20  1  2  ITG-P       47. 11.213.103    001    0000 05:23:10   00048   00001
-----------------------------------------------------------------------------------
-----------------
Total                                         004                    00168   00003
-----------------------------------------------------------------------------------
------------------
------------- card in node configured that are not responding ------------------
Index  TN      Host Type   TLAN IP Addr
04    20 1 7  SMC         47. 11.213. 158
-----------------------------------------------------------------------------------
-----------------
```

uftpShow

Syntax: **`uftpShow`**

This command provides the following information:

- configuration information about the UFTP
- count of successful downloads after they start since the Signaling Server/SMC reboot
- count of downloads that failed or prematurely ended after they start since the Signaling Server/SMC reboot
- number of active downloads and list for each
    - Terminal Type
    - IP Address of the telephone being download
    - number of bytes sent for the download

The following example shows command output.

```
-> uftpShow
------ UFTP Server Configuration -----------------------
UFTP server IP address  ............ 47.11.24.158 (port : 5105)
Concurrent downloading limit ....... 15(sets)

Total IP Set firmware = 5

FirmWare   TermType   PolicyName    FileName
---------- ---------- ------------- ----------------
0602B59    i2004      DEFAULT_I2004 /ums/i2004.fw
0603B59    i2002      DEFAULT_I2002 /ums/i2002.fw
```

```
0604C00    i2001      DEFAULT_IPPH2 /ums/IPP2SETS.fw
0604C00    i2002 Ph2  DEFAULT_IPPH2 /ums/IPP2SETS.fw
0604C00    i2004 Ph2  DEFAULT_IPPH2 /ums/IPP2SETS.fw

-------------- Run Time Data -------------
Last UFTP reset       ......................... 19/12/03 18:50:18
Cumulation Period     .......................... 0000 19:07:22
Successful downloads  ..........................147
Fail   downloads      ........................  20
------------- Active downloads ---------
Current downloading sets   5
TermType  IP Address Downloaded[KByte]
--------- ---------- -----------------
i2004     47.11.2.157      122
i2004     47.11.2.168       71
i2004     47.11.2.215       41
i2002     47.11.5.157       26
i2001     47.11.3.158       15
```

uftpRunTimeDataReset

Syntax: **uftpRunTimeDataReset**

Reset the run time data field in the UFTP data block.

The following example shows command output.

```
oam> uftpRunTimeDataReset

Run time data reset OK.
----------------- Run Time Data ----------------
Successful downloads  .......................... 400
Fail   downloads      ........................  0
```

UKLossPlanClr

Syntax: **UKLossPlanClr**

Clear the gain adjustment made by the UKLossPlanSet and lossPlanSet commands and returns the IP Phones to the TIA-810A levels. This command is an alias to the lossPlanClr command.

Run this command on the node Leader card while it is the node master to ensure that the data propagates correctly to all cards in the node. When you install a new leader card on a node with modified levels, always enter the loss plan command on the CLI even if you previously entered the command on the CLI of another card.

The following example shows command output.

```
VGMC> UKLossPlanClr
value = 0 = 0x0
```

```
VGMC>
IP client loss plan set to default values
```

UKLossPlanSet

Syntax: **`UKLossPlanSet`**

Increase the handset and headset gain settings in the IP Phone by 5 dB to raise the volume levels beyond those specified by TIA-810A/TIA-912 to be closer to those used for the digital phones in the United Kingdom. No parameters are needed, as this command increases the gain by a fixed amount.

Run this command on the node Leader card while it is the node master, to ensure that the data propagates correctly to all cards in the node. When you install a new leader card on a node with modified levels, always enter the loss plan command on the CLI even if you previously entered the command on the CLI of another card.

After you enter this command, the gain adjustment is downloaded to all registered telephones. When phones register, they are downloaded the new gain values. The gain adjustment is also saved to a disk file (/c:/config/loss.ini) so the adjusted gains are retained when the card reboots.

When a node has a modified loss plan (that is, either this command or lossPlanSet was used), a new card added to the node is updated with the modified loss plan 30 seconds after it boots up. Prior to that being received, calls made by IP Phones registered to the new card have the default loss plan levels.

Note:

Systems with this command activated may experience increased occurrence of echo and other audio issues related to the increased volume.

The following example shows command output.

```
VGMC> UKLossPlanSet
value = 0 = 0x0
VGMC>
IP client loss plan adjusted to UK levels
```

umsKernelShowJobs

Syntax: **`umsKernelShowJobs "jobType"`**

Print current active and pending firmware update jobs. This is a useful consolidation of information; the prior version of the command displayed details of each IP Phone in the job list on the Signaling Server where up to 1000 IP Phones are registered.

The following table describes the command parameters.

Table 73: Command parameters

Parameter	Value	Description
jobType	active pending wait	Optional. If not included, all jobs are displayed. If a job type is specified, then only those jobs are displayed.

The following example shows the output with all jobs displayed.

```
-> umsKernelShowJobs
================================
Kernel Job Summary
================================
Jobs:
Tag         timeStamp  terminalID  Firmware  ipAddress        terminalType
jobStatus   waitReason  NewFirmware  retryCount
----------  ---------  ----------  --------  ---------------  ------------
----------  ----------  --------  ----------
0x022db908  1035383728 0x0230c13c  0602B38   47.11.243.198
i2004         Waiting     Aging      0602B40  0
0x022db878  1035383727 0x02308d10  0602B38   47.11.243.194
i2004         Waiting     Aging      0602B40  0                    0x02bbd6c4
1035383729 0x022ee928  0602B39   47.11.243.190
i2004         Waiting     Aging      0602B40  0                    0x02bbd634
1035383724 0x022f0018  0602B39   47.11.243.183
i2004         Waiting     Aging      0602B40  0                    0x02bbd5a4
1035383729 0x02309254  0602B38   47.11.243.197
i2004         Waiting     Aging      0602B40  0                    0x02bbd484
1035383724 0x022fe800  0602B38   47.11.243.97
i2004         Waiting     Aging      0602B40  0                    0x02bbd3f4
1035383728 0x022fe9d0  0602B38   47.11.243.195
i2004         Waiting     Aging      0602B40  0                    0x02bbd2d4
1035383714 0x022f7590  0603B39   47.11.243.31
i2002         Active      Noreason   0603B40  0                    0x02bbd208
1035383715 0x022e5dd0  0602B39   47.11.243.196
i2004         Active      Noreason   0602B40  0                    0x02bbd13c
1035383716 0x0231042c  0602B38   47.11.243.185
i2004         Active      Noreason   0602B40  0                    0x02bbd0ac
1035383724 0x022e53f0  0602B39   47.11.243.186
i2004         Active      Noreason   0602B40  0                    0x02bbcf70
1035383724 0x02e21aa0  0602B38   47.11.243.33
i2004         Active      Noreason   0602B40  0                    0x02bbcee0
1035383727 0x0231148c  0602B38   47.11.243.224
i2004         Active      Noreason   0602B40  0
--------------
Total Jobs=12

Active Main:
Server             MaxClients  JobTags
-----------------  ----------  -------
47.11.243.176      10          6
--------------
Total Server Queue Tiers=1

Wait Main:
Waitreason  JobTags
----------  -------
Aging       6
--------------
Total Waiting Queue Tiers=1

Pending Main:
TerminalType  Firmware  JobTags
```

```
------------  --------  -------
i2002         0603B40   0
i2004         0602B40   0
--------------
Total Pending Queue Tiers=2
value = 45 = 0x2d = '-'
->
```

umsPolicyShow

Syntax: **`umsPolicyShow`**

Displays information pertaining to the download of IP Phone firmware. Although the example is shown for the VGMC, it is applicable from the Signaling Server vxshell prompt.

The following example shows command output.

```
VGMC> umsPolicyShow

Total firmware = 2

FirmWare   TermType PolicyName    Server           FileName        Limit When
Upgrade    Protocol        Retry
---------- -------- ------------- ---------------- --------------- ----- ---------
---------- --------------- -----
0602B38    i2004    DEFAULT_I2004 192.168.1.140    /ums/i2004.fw   10    ALWAYS
ANY        TFTP            -1
3002B20    i2002    DEFAULT_I2002 192.168.1.140    /ums/i2002.fw   10    NEVER
ANY        TFTP            -1
value = 0 = 0x0
```

umsSetFirmwarePolicy

Syntax: **`umsSetFirmwarePolicy "fwVersion" "policy" "when" "upgradeType"`**

Enable the parameters of a UMS firmware upgrade policy to change.

The following table describes the command parameters.

Table 74: Command parameters

Parameter	Value	Description
fwVersion	–	The firmware version to use in the upgrade.
policy	DEFAULT_I2004 DEFAULT_I2002 DEFAULT_IPPH2	The ums upgrade policy to edit.
when	NEVER ALWAYS IDLE	When the upgrade is to perform.

Parameter	Value	Description
upgradeType	UPGRADE DOWNGRADE ANY	The direction considered for the upgrade.

The following example shows command output.

```
-> umsSetFirmwarePolicy "0302B59", "MINIMUM", "IDLE", "UPGRADE"
value = 1 = 0x1
->
```

umsUpdatePolicy

Syntax: **`umsUpdatePolicy`**

When you manually copy a firmware file to a card, this command notifies the UMS task of the new file so it can be processed.

The following example shows command output.

```
-> umsUpdatePolicy
value = 0 = 0x0
->
OCT 16 16:00:04 tShell: Info Resync IniFile from version 0602B38 to 0602B38 for
terminal i2004.
```

umsUpgradeAll

Syntax: **`umsUpgradeAll`**

Initiate a firmware download to all IP Phones requiring a firmware upgrade. In the following example, both regisatered IP Phones already have the latest firmware and thus are not upgraded. Although the example is shown for the VGMC, it is applicable from the Signaling Server vxshell prompt.

Note:

You must manually install the PC software for the Avaya 2050 IP Softphone. The VGMC/Signaling Server application does not check the firmware for the Avaya 2050 IP Softphone.

The following example shows command output.

```
VGMC> umsUpgradeAll
value = 0 = 0x0
VGMC>
FEB 16 15:25:36 tShell: Info ums Session download all
FEB 16 15:25:36 tUMS: Info try to upgrade all registered sets
FEB 16 15:25:36 tSET: Info Terminal offline 192.168.1.141   TN 0x6005
FEB 16 15:25:36 tSET: Info Terminal offline 192.168.1.142   TN 0x6006
FEB 16 15:25:36 tUMS: Info decision-bless "192.168.1.141"
FEB 16 15:25:36 tUMS: Info decision-bless "192.168.1.142"
FEB 16 15:25:36 tSET: Info 192.168.1.141   TN 61-01 Registered with M1
FEB 16 15:25:36 tSET: Info 192.168.1.142   TN 61-02 Registered with M1
VGMC>
```

umsUpgradeTimerCancel

Syntax: **`umsUpgradeTimerCancel`**

Cancel the firmware upgrade timer if it is running.

The following example shows the output from VGMC or Signaling Server vxshell prompt.

```
VGMC> umsUpgradeTimerCancel
value = 0 = 0x0
VGMC> umsUpgradeTimerShow
Upgrade Timer is not active.
value = 30 = 0x1e
```

umsUpgradeTimerSet

Syntax: **`umsUpgradeTimerSet delay`**

Assign the delay, in seconds, from the current time to when the IP Phone firmware upgrade will occur.

The following table describes the command parameters.

Table 75: Command parameters

Parameter	Value	Description
delay	–	Seconds of delay before the firmware upgrade occurs.

```
-> umsUpgradeTimerSet 3600
value = 0 = 0x0
->
FEB 16 14:26:49 tShell: Info Upgrade will happen after 3600 seconds
->
```

umsUpgradeTimerShow

Syntax: **`umsUpgradeTimerShow`**

Displays the time configured for a firmware upgrade. Although the example is shown for the VGMC, it is applicable from the Signaling Server vxshell prompt.

The following example shows the command output.

```
VGMC> umsUpgradeTimerShow
Now                  UpgradeTime          TimeDiff
-------------------- -------------------- ----------
FEB 16 02:27:47PM    FEB 16 03:26:49PM       0:59:02
value = 53 = 0x35 = '5'
```

usiGainTableShow

Syntax: **`usiGainTableShow transducer`**

Print the lookup table used to map the dB loss values calculated by the MAM task into the appropriate gain settings for the DSP and CODEC on the IP Phone. Each output line comprises four values: index (provided for reference), loss (dB), CODECgain, and DSPgain.

The following table describes the command parameters.

Table 76: Command parameters

Parameter	Value	Description
transducer	1–3	Specify the transducer gain table to print. 1 =Handset 2 =Headset 3 = Handsfree

The following example shows the output for the handset lookup table.

```
-> usiGainTableShow 1

=== RLR Map ===
30 12.0 0x31 0x00       31 11.5 0x30 0x00      32 11.0 0x2f 0x00       33 10.5 0x2e
0x00      34 10.0 0x2d 0x00
35 9.5 0x2c 0x00        36 9.0 0x2b 0x00        37 8.5 0x2a 0x00        38 8.0 0x29
0x00       39 7.5 0x28 0x00
40 7.0 0x29 0x00        41 6.5 0x28 0x01        42 6.0 0x29 0x02        43 5.5 0x28
0x02       44 5.0 0x29 0x03
45 4.5 0x28 0x03        46 4.0 0x29 0x04        47 3.5 0x28 0x04        48 3.0 0x29
0x05       49 2.5 0x28 0x05
50 2.0 0x29 0x06        51 1.5 0x28 0x06        52 1.0 0x29 0x07        53 0.5 0x28
0x07       54 0.0 0x29 0x08
55 -0.5 0x28 0x08       56 -1.0 0x29 0x09      57 -1.5 0x28 0x09       58 -2.0 0x29
0x0a      59 -2.5 0x28 0x0a
60 -3.0 0x29 0x0b       61 -3.5 0x28 0x0b      62 -4.0 0x29 0x0c       63 -4.5 0x28
0x0c      64 -5.0 0x29 0x0d
65 -5.5 0x28 0x0d       66 -6.0 0x29 0x0e      67 -6.5 0x28 0x0e       68 -7.0 0x29
0x0f      69 -7.5 0x28 0x0f
70 -8.0 0x29 0x10       71 -8.5 0x28 0x10      72 -9.0 0x29 0x11       73 -9.5 0x28
0x11      74 -10.0 0x29 0x12

=== SLR Map ===
70 17.5 0x00 0x02       71 17.0 0x01 0x03      72 16.5 0x00 0x00       73 16.0 0x01
0x04      74 15.5 0x00 0x04
75 15.0 0x01 0x05       76 14.5 0x00 0x05      77 14.0 0x01 0x06       78 13.5 0x00
0x06      79 13.0 0x01 0x07
80 12.5 0x00 0x07       81 12.0 0x01 0x08      82 11.5 0x00 0x08       83 11.0 0x01
```

```
0x09      84 10.5 0x00 0x09
85 10.0 0x01 0x0a       86 9.5 0x00 0x0a        87 9.0 0x01 0x0b        88 8.5 0x00
0x0b       89 8.0 0x01 0x0c
90 7.5 0x00 0x0c        91 7.0 0x01 0x0d        92 6.5 0x00 0x0d        93 6.0 0x01
0x0e       94 5.5 0x00 0x0e
95 5.0 0x01 0x0f        96 4.5 0x00 0x0f        97 4.0 0x01 0x10        98 3.5 0x00
0x10       99 3.0 0x01 0x11
100 2.5 0x00 0x11      101 2.0 0x01 0x12       102 1.5 0x00 0x12       103 1.0 0x01
0x13      104 0.5 0x00 0x13
105 0.0 0x01 0x14

=== STMR Map ===
00 12.0 0x00 0x00      01 15.0 0x00 0x00       02 18.0 0x00 0x00       03 21.0 0x00
0x00       04 24.0 0x00 0x00
05 27.0 0x00 0x00       06 30.0 0x00 0x00       07 33.0 0x00 0x00
```

usiLibTraceHelp

Syntax: **`usiLibTraceHelp`**

This command displays syntax and information for available commands.

usiLibTraceSettings

Syntax: **`usiLibTraceSettings`**

Print the current trace settings.

usiTraceSetOutput

Syntax: **`usiTraceSetOutput trace_output, "file_name"`**

Assign the output destination for the trace tool.

The following table describes the command parameters.

Table 77: Command parameters

Parameter	Value	Description
trace_output	1–4	Trace output destination, where 1 = TTY 2 = SYSLOG 3 = File 4 = File and TTY
file_pathname	"string"	File to output to if trace_output = 3 or 4. You can enter the entire path name or only the file name. If you enter only the file name, the default

Parameter	Value	Description
		path is C:/file_name. Enclose the string in quotation marks.

The following example shows command output.

```
-> usiTraceSetOutput 1, "/C:/trace.txt"
value = 0 = 0x0
```

usiLibTraceOff

Syntax: **`usiLibTraceOff "ipAddr"`**

This command turns off the trace for the specified IP Address of a telephone.

The following example shows command output.

```
-> usiLibTraceOff "47.11.213.216"
value = 0 = 0x0
```

usiLibTraceAllOff

Syntax: **`usiLibTraceAllOff`**

This command turns off the trace for all IP addresses (for all telephones).

usiLibTraceOn

Syntax: **`usiLibTraceOn "ipAddr" , to_set, from_set`**

Turn on the trace for one telephone.

The following table describes the command parameters.

Table 78: Command parameters

Parameter	Value	Description
to_set	–	Message types sent to the telephone to trace, where 0 = Off 1 = Broadcast Manager messages 2 = Audio Manager messages 4 = Display Manager messages 8 = Key/Indicator Manager messages 16 = Basic Manager messages 32 =

Parameter	Value	Description
		Network Manager messages 64 = Accessory Manager messages 128 = Accessory Devices messages 255 = All messages To track multiple message types but not all message types, add together the values for the message types you wish to track (for example, to track Key/Indicator Manager and Display Manager messages, add 4+8, and assign to_set a value of 12).
from_set	–	Message types to trace from the telephone, where 0 = Off 1 = Broadcast Manager messages 2 = Audio Manager messages 4 = Display Manager messages 8 = Key/Indicator Manager messages 16 = Basic Manager messages 32 = Network Manager messages 64 = Accessory Manager messages 128 = Accessory Devices messages 255 - All messages To track multiple message types but not all message types, add together the values for the message types you wish to track (for example, to track Key/Indicator Manager and Display Manager messages, add 4+8, and assign to_set a value of 12).

The following example shows the output for tracing network and basic manager messages sent to the telephone displayed on the TTY.

```
-> usiLibTraceOn "47.11.213.216", 48, 0
value = 0 = 0x0
```

usiQueryAPB

Syntax: **`usiQueryAPB SetBlkAddr, transducer`**

This command triggers a query to the specified IP Phone and retrieves the current levels for the specified transducer.

The various gain blocks on the IP Phone have the following step sizes:

- Receive (RX) CODEC gain (0.5 dB step)
- Tx CODEC gain (0.5 dB step)
- Receive (RX) DSP gain (1 dB step)
- Tx DSP gain (1 dB step)
- Sidetone gain (3 dB step)

You can look up the value for each gain block in the printed output to determine the dB level on the telephone for the transducer.

The following table describes the command parameters.

Table 79: Command parameters

Parameter	Value	Description
SetBlkAddr	–	Pointer value of the telephone given by the usiShow command.
transducer	1–3	Specify the transducer data to retrieve, where 1 = Handset 2 = Headset 3 = Handsfree

The following example shows command output.

```
-> usiQueryAPB 0x03a876fc,1

value = 0 = 0x0
->                               APB Number = 1
Return to Default Disabled
Automatic Gain Control Disabled
APB for Volume Control Enabled = 0x03
Listener Sidetone Enabled
Acoustic Echo Canceller Disabled
Step Size = 0x00
Max Volume = 0x08
Min Volume = 0x0b
Rx Codec Gain = 0x29
Tx Codec Gain = 0x01
Rx DSP Gain = 0x06
Tx DSP Gain = 0x09
Sidetone Gain = 0x02
AEC Length in number of taps = 0x00 0x80
Microphone noise threshold = 0x19
Line Delay Length = 0x01
Max Return Loss TG = 0x0c
Switched Loss when AEC Off = 0x08
NormDelta = 0x0c
TxREF_LEVEL Compensation when AEC Off = 0x04
TxREF_LEVEL Compensation when AEC On = 0x08
Noise Wait Counter = 0x4b
APS (Audio Processing Shell)  = 0x48 0x0b 0x50 0x06 0x32 0x80 0xc4 0x01
0x11 0x0c 0x57 0x08 0x40 0x00 0x24 0x07 0x02 0x89 0x28 0x00 0x00 0x4b
Default Volume = 0x01
Current Volume = 0x01
Sampling Rate = 0x00
HIP Filter = 0x00
AGC Threshold = 0x17
LST Threshold = 0x0e

-> usiQueryAPB 0x03a876fc,2
value = 0 = 0x0

->                               APB Number = 2
Return to Default Disabled
Automatic Gain Control Disabled
APB for Volume Control Enabled = 0x03
Listener Sidetone Enabled
Acoustic Echo Canceller Disabled
Step Size = 0x00
Max Volume = 0x08
Min Volume = 0x0b
Rx Codec Gain = 0x25
```

```
Tx Codec Gain = 0x04
Rx DSP Gain = 0x10
Tx DSP Gain = 0x01
Sidetone Gain = 0x01
AEC Length in number of taps = 0x00 0x80
Microphone noise threshold = 0x19
Line Delay Length = 0x01
Max Return Loss TG = 0x0c
Switched Loss when AEC Off = 0x0c
NormDelta = 0x04
TxREF_LEVEL Compensation when AEC Off = 0x04
TxREF_LEVEL Compensation when AEC On = 0x08
Noise Wait Counter = 0x4b
APS (Audio Processing Shell)  = 0x0b 0x8b 0x50 0x10 0x32 0x80 0xc4 0x01 0x11
0x84 0x57 0x08 0x40 0x00 0x24 0x07 0x02 0x89 0x28 0x00 0x00 0x4b
Default Volume = 0x01
Current Volume = 0x01
Sampling Rate = 0x00
HIP Filter = 0x00
AGC Threshold = 0x17
LST Threshold = 0x0e

-> usiQueryAPB 0x03a876fc,3
value = 0 = 0x0

->                               APB Number = 3
Return to Default Disabled
Automatic Gain Control Disabled
APB for Volume Control Enabled = 0x03
Listener Sidetone Disabled
Acoustic Echo Canceller Disabled
Step Size = 0x00
Max Volume = 0x08
Min Volume = 0x0b
Rx Codec Gain = 0x49
Tx Codec Gain = 0x08
Rx DSP Gain = 0x1a
Tx DSP Gain = 0x07
Sidetone Gain = 0x00
AEC Length in number of taps = 0x01 0x80
Microphone noise threshold = 0x14
Line Delay Length = 0x02
Max Return Loss TG = 0x0d
Switched Loss when AEC Off = 0x1a
NormDelta = 0x08
TxREF_LEVEL Compensation when AEC Off = 0x0c
TxREF_LEVEL Compensation when AEC On = 0x01
Noise Wait Counter = 0x4b
APS (Audio Processing Shell)  = 0x3b 0x8b 0xdf 0x5a 0x29 0x80 0xd2 0x42 0x33
0x48 0x57 0xc1 0x5d 0x91 0x04 0xc5 0x02 0x89 0x28 0xff 0x00 0x4b
Default Volume = 0x01
Current Volume = 0x01
Sampling Rate = 0x00
HIP Filter = 0x00
AGC Threshold = 0x17
LST Threshold = 0x00
->
```

usiQueryResetReason

Syntax: **`usiQueryResetReason "phone IP address"`**

Send a request to the IP Phone as to the reason for the last reset. The response from the IP Phone appears on the console. This command is supported only by IP Phone firmware Release 1.26 or later.

The following table describes the command parameters.

Table 80: Command parameters

Parameter	Value	Description
phone IP address	"string"	IP address of the IP Phone. Enclose the string in quotation marks.

The following example shows the output where the query is not supported by the IP Phone (firmware 1.25).

```
    -> isetShow
IP Address       Type    State       Up  Time         TN             HWID
FWVsn  SrcPort
------------------ ------- ----------- ------------ ------------
------------------ ------- -------
192.168.1.143      i2004   online        1 01:29:21    061-03    1800802ddcd4c66600
3002B25 5100

Total sets = 1
value = 0 = 0x0
->
-> usiQueryResetReason "192.168.1.143"
value = 0 = 0x0
->
FEB 28 15:15:57 VTM: Info 192.168.1.143: Last Reset Reason 127 (Not Supported)
```

The following example shows the output where the first IP Phone queried has power cycled to it (that is, the adapter is unplugged), and the second IP Phone had been trying to register for some time prior to being connected to the TPS.

```
    -> isetShow
IP Address       Type    State       Up  Time         TN             HWID
FWVsn  SrcPort
------------------ ------- ----------- ------------ ------------
------------------ ------- -------
192.168.1.142      i2004   online        0 00:12:33    061-02    180060387621a96600
C902B26 5100

192.168.1.141      i2004   online        1 01:12:32    061-01    180060387621af6600
C902B26 5100
Total sets = 2
value = 0 = 0x0
->
-> usiQueryResetReason "192.168.1.142"
value = 0 = 0x0
->
FEB 28 15:18:17 VTM: Info 192.168.1.142: Last Reset Reason 0 (Power up)

-> usiQueryResetReason "192.168.1.141"
value = 0 = 0x0
->
FEB 28 15:19:01 VTM: Info 192.168.1.141: Last Reset Reason 2 (Soft reset: RUDP retry
attempts have been exhausted)
```

The following table describes possible values for the Reset Reason parameter for this command.

Table 81: Reset Reason values

Code	Reset reason	SYSLOG output message	Notes
0xff	Not Supported	Last Reset Reason Not Supported	–
0x7f	Not Supported	Last Reset Reason Not Supported	–
0	Power up: code =0, Also covers $	Power up	–
1	Soft reset: Watchdog timeout	Soft Reset: Watchdog timeout	–
2	Soft reset: RUDP retry attempts have been exhausted	Soft Reset: RUDP retry exhausted	–
*	Soft reset: by UNISTIM from TPS (network.c:116)	–	Does not need to be recorded, or cannot be recorded.
*	Soft reset: by server switch (network.c:280)	–	Does not need to be recorded, or cannot be recorded.
5	Hard reset: by UNISTIM from TPS (Ged.c:995) or by a DSP interrupt reset caused by SKS used to reset the phone ([mute][up][down][up][down][up][9][release]) or bad AB06 chip) (Ged.c:995)	Hard reset by TPS	–
$	Hard reset: by DTEV UART DSR interrupt (DTEVuart.c:585)	DTEV UART DSR interrupt	Cannot be recorded, and is covered by Reset Reason 5.
7	Hard reset: by software upgrade: command had bad data (network.c:571)	Upgrade: command had bad data	–
#	Hard reset: by software upgrade: unknown download protocol (not TFTP or UFTP) (dwnloadr.c:124)	Upgrade: unknown download protocol	Can never happen or is covered by other error codes.

Code	Reset reason	SYSLOG output message	Notes
9	Hard reset: by software upgrade: read from TFTP/UFTP failed. For example, server is stopped in middle of downloading (dwnloadr.c:207)	Upgrade: TFTP/UFTP failed.	–
10	Hard reset: by software upgrade: unrecognized Flash Manufacturer ID (dwnloadr.c:251)	Upgrade: Bad Flash Manufacturer Id	–
11	Hard reset: by S/W upgrade: download finished	Upgrade: download finished	–
12	Hard reset: by DHCP: IP Phone has bound an IP address, but the MAC address in ACK message does not match the IP Phone (cl_dhcp.c:915)	DHCP: Bad MAC in ACK Msg	–
13	HardReset: by DCHP: Bad ACK parameter, like FULL DHCP, but parameter is bad (cl_dhcp.c:968)	DHCP: Bad parameter in ACK Msg	–
14	HardReset: by DHCP: Address lost, lease is up or extension refused. (cl_dhcp.c:996)	DHCP: Address lost	–
15	Hard Reset: by DHCP: Address failed (cl_dhcp.c:1033)	DHCP: Add address failed	–
16	Hard Reset: IP check: duplicated IP address (Winmgr.c:925)	Duplicated IP address	–
17	Hard Reset: IP check: cannot check IP address (winmgr.c:929)	cannot check IP address	–
18	Hard Reset: Startup: Current Server is secondary, retry attempts have been exhausted	Startup: S2 Retry Exhausted	–

Code	Reset reason	SYSLOG output message	Notes
#	Hard reset: Startup: Primary server action code is invalid (winmgr.c: 1231)	Startup: Invalid S1	–
#	Hard reset: Startup: Secondary server action code is invalid (winmgr.c: 1238)	Startup: S2 action code is invalid	–
21	Hard reset: Startup: Manual Configuration: Softkey 3: CANCEL function (winmgr.c:2099)	Startup: Manual config cancelled	–
22	Hard reset: Close Audio Stream, pSOS cannot delete the tx task	O/S: Cannot delete Tx Task	–
23	Hard reset: Close Audio Stream, pSOS cannot delete the rx task.	O/S: Cannot delete Rx task	–

usiShow

Syntax: **`usiShow`**

Print terminal-related information. You can use this command to obtain the IP Phone block address (SetBlkAddr) for a telephone. The parameter SetBlkAddr is a pointer to a data structure for the telephone used by the command usiQueryAPB.

The output data is broken into three blocks: general information, a list of ports, and a list of terminals with active RUDP connections.

The following table describes the data parameters printed by this command.

Table 82: Data output

Parameter	Description
General information parameters	
Num of sets	Number of telephones with RUDP links on this card.
DebugTrace	On/Off indication of UNIStim message trace (see the usi commands).

Parameter	Description
Tos byte	Value of ToS byte sent in RUDP messages
RudpWinSize	Number of outstanding RUDP frames allowed before an Ack is received. Configurable in the tps.ini file. For more information about configuring this parameter, see RUDP windowing control on page 340.
UsiSetList	Pointer to head of terminal list.
UsiPortList	Pointer to head of port list.
Port parameters	
Port ID	Software ID of a port. Is the pointer to the port control block.
IPAddress	IPAddress used by the port.
Port	UDP port number.
TaskID	Internal number identifying the task that processes the messages from the port
Terminals	Number of terminals messaging with the port.
Terminal parameters	
Set	Software ID of a port. Is the pointer to the port control block.
SetBlkAddr	Pointer to the telephone control block.
Connect	Yes/No whether the IP Phone RUDP link is active.
ConnectID	ID of the IP Phone RUDP connection.
FwVsn	Firmware version on the terminal.Firmware version on the terminal.
IPAddress	IP Address of the terminal.
SrcPort	UDP port used on the TPS card for the RUDP link.
DestPort	UDP port used on the terminal for the RUDP link.

You can modify the RudpWinSize parameter by changing the TPS.INI file. For more information, see RUDP windowing control on page 340.

The following example shows command output.

```
-> usiShow
usiLib
======
Num of sets  2
```

```
DebugTrace   Off
Tos byte     0x00
RudpWinSize  10
UsiSetList   0x003b6064
UsiPortList  0x003b6070

PortID     IPAddress       Port TaskID Terminals
---------- --------------- ---- ------ ---------
0x037f7abc 192.168.1.140   5100 0x7800         2
0x037e2cdc 192.168.1.140   7300 0x9800         0
0x03a88398 192.168.1.149   4100 0xa800         0

Set SetBlkAddr Connect ConnectID  FwVsn   IPAddress       SrcPort DestPort
--- ---------- ------- ---------- ------- --------------- ------- --------
1 0x03a87504 yes     0x03a87584 3002B00 192.168.1.141      5100     5000
2 0x03a87760 yes     0x03a877e0 3002B00 192.168.1.142      5100     5000
value = 0 = 0x0
->
```

vgwAudioTraceHelp

Syntax: **`vgwAudioTraceHelp`**

This command describes the CLI commands and required parameters.

vgwAudioTraceSettings

Syntax: **`vgwAudioTraceSettings`**

Print the current trace settings.

The following example shows command output.

```
-> vgwAudioTraceSettings
Monitor is off
value = 0 = 0x0
```

vgwAudioTraceAllOff

Syntax: **`vgwAudioTraceAllOff`**

Turn off the trace for all channels.

vgwAudioTraceoff

Syntax: **`vgwAudioTraceoff chNum`**

Turn off the trace for the specified channel.

The following table describes the command parameters.

Table 83: Command parameters

Parameter	Value	Description
chNum	–	Channel number

vgwAudioTraceOn

Syntax: **`vgwAudioTraceOn chNum`**

Initiate audio message tracing. The channel number specifies which gateway or channel on which to perform ACP or audio message tracing.

The following table describes the command parameters.

Table 84: Command parameters

Parameter	Value	Description
chNum	–	Channel number

The following example shows command output.

```
-> vgwAudioTraceOn 10
value = 0 = 0x0
```

vgwAudioTraceSetOutput

Syntax: **`vgwAudioTraceSetOutput trace_output, "file_pathname"`**

Assign the output destination for the trace tool.

The following table describes the command parameters.

Table 85: Command parameters

Parameter	Value	Description
trace_output	1–4	Trace output destination, where: 1 = TTY 2 = SYSLOG 3 = File 4 = File and TTY
file_pathname	"string"	Specify the file to output to if trace_output = 3 or 4. Enclose the string in quotation marks. You can enter the entire path name, or the file name only. If you enter only the file name, the default path is "C:/file_name".

The following example shows command output.

```
-> vgwAudioTraceSetOutput 3, "trace.txt"
value = 0 = 0x0
```

vgwChStat

Syntax: **`vgwChStat chNum`**

Print the statistics for a channel on the SMC card. This command applies only to the SMC card. The MAC layer statistics, both the general and channel-specific microEngine statistics are printed. If you assign a DimDspStat = 1 prior to using this command (see DimDspStat = 1/0 on page 87), the channel DSP statistics also print.

Note:

When DimDspStat is assigned a value of 1, the DSP statistics print at the end of every gateway channel call. Consider how busy the card is before you enable this, as a block of data prints every time a call completes until the variable is reset to 0. Be sure to assign DimDspStat = 0 after you use the vgwChStat command.

The following example shows command output.

```
-> vgwChStat 6
###Net Stats: Base = 0x38410800#########
TxUniOkCnt       = 7163   - The number of unicast packets transmitted without any
errors.
TxMltOkCnt       = 0      - The number of multicast packets transmitted without any
errors.
TxBrdOkCnt       = 54     - The number of broadcast packets transmitted without any
errors.
TxDeferCnt       = 7163   - The number of packets deferred upon the first transmit
attempt due to a busy line.
TxColCnt         = 0      - The number of regular collision events occurring during
transmission.
TxScolCnt        = 0      - The number of packets transmitted without any error
following a single collision.
TxMcolCnt        = 0      - The number of packets transmitted without any error
following multiple collisions.
TxXcolCnt       = 0     - The number of packets that have experienced 16 consecutive
collisions or more.
TxLcolCnt        = 0      - The number of transmission abortions due to a collision
occurring after transmission of packets that are 64 bytes in length.
```

```
TxPkt64Cnt       = 4818   - The number of transmitted packets, 64 bytes in length,
including bad packets.
TxPkt65Cnt       = 2351   - The number of transmitted packets, 65 to 127 bytes in
length, including bad packets.
TxPkt128Cnt      = 44     - The number of transmitted packets, 128 to 255 bytes in
length, including bad packets.
TxPkt256Cnt      = 0      - The number of transmitted packets, 256 to 511 bytes in
length, including bad packets.
TxPkt512Cnt      = 4     - The number of transmitted packets, 512 to 1023 bytes in
length, including bad packets.
TxPkt1024Cnt     = 0      - The number of transmitted packets, 1024 to 1518 bytes
in length, including bad packets.
TxPkt1519Cnt     = 0      - The number of transmitted packets with length larger
than 1519 bytes, including bad packets.
TxPauseCnt       = 0      - The number of correct transmitted flow-control packets.
TxErrCnt         = 0      - The number of packets transmitted with an error due to
transmit FIFO underflow or txerr signal assertion.
TxOctOkCnt(byte) = 513620 - The number of bytes transmitted in good packets.
TxOctBadCnt(byte)= 0      - The number of bytes transmitted in packets with errors.
RxOctOkCnt(byte) = 493504 - The number of bytes received in good packets.
RxOctBadCnt(byte)= 0      - The number of bytes received in packets with errors.
RxRuntCnt        = 0     - The number of frames received without SFD detection but
with carrier assertion. This counter must be reset after moving to the SYM mode.
RxOvfCnt         = 0     - The number of receive packets not fully accepted due to
receive FIFO overflow.
RxShortOkCnt     = 0      - The number of packets, less than 64 bytes in length,
received without any error.
RxShortCrcCnt    = 0      - The number of packets less than 64 bytes in length,
received with CRC error.
RxUniOkCnt       = 7298   - The number of unicast packets with lengths between 64
bytes and the maximum packet size, received without any errors.
RxMltOkCnt       = 0     - The number of multicast packets with lengths between 64
bytes and the maximum packet size, received without any errors.
RxBrdOkCnt       = 13    - The number of broadcast packets with lengths between 64
bytes and the maximum packet size, received without any errors.
RxNormCrcCnt     = 0     - The number of packets with lengths between 64 bytes and
the maximum packet size, received with an integral number of bytes and a CRC error.
RxNormAliCnt     = 0     - The number of packets with lengths between 64 bytes and
the maximum packet size, received with a nonintegral number of bytes and a CRC error.
RxLongOkCnt      = 0      - The number of packets, larger than the maximum packet
size, received without any error.
RxLongCrcCnt     = 0      - The number of packets, larger than the maximum packet
size, received with a CRC error.
RxPkt64Cnt       = 6248   - The number of received packets, 64 bytes in length,
including bad packets.
RxPkt65Cnt      = 1064   - The number of received packets, 65 to 127 bytes in length,
including bad packets.
RxPkt128Cnt      = 0      - The number of received packets, 128 to 255 bytes in
length, including bad packets.
RxPkt256Cnt      = 0      - The number of received packets, 256 to 511 bytes in
length, including bad packets.
RxPkt512Cnt      = 0      - The number of received packets, 512 to 1023 bytes in
length, including bad packets.
RxPkt1024Cnt     = 0      - The number of received packets, 1024 to 1518 bytes in
length, including bad packets.
RxPkt1519Cnt     = 0      - The number of received packets, with lengths between
1519 bytes and the maximum packet size (programmable value), including bad packets.
RxPauseCnt       = 0      - The number of correct received flow-control packets.
RxFalsCrsCnt     = 1      - The number of false carrier events detected.
RxSymErrCnt      = 0      - The number of received packets during which PHY symbol
errors were detected.
uengine dsp_rx_stat (packets to core)      = 552     - The number of packets that
were sent to core.
uengine dsp_rx_stat (MAC21440 NO error)    = 7318    - The number of packets without
errors.
uengine dsp_rx_stat (MAC21440 error)       = 0       - The number of packets with
errors.
uengine dsp_rx_stat (broadcast packet)     = 13      - The number of broadcast
packets.
```

```
uengine dsp_rx_stat (MAC address fail)    = 0      - The number of packets destined
to other MACs.
uengine dsp_rx_stat (not IP)               = 0       - The number of non IP packets.
uengine dsp_rx_stat (not UDP)             = 17      - The number of non UDP packets.
uengine dsp_rx_stat (UDP port # out range) = 415     - The number of UDP packets out
of VGW port range.
uengine dsp_rx_stat (RTCP)                 = 120     - The number of RTCP packets.
( channel specific )
uengine dsp_rx_stat (SOP error)            = 0       - The number of packets with
SOP errors. (channel specific)
uengine dsp_rx_stat (source IP failure)   = 0      - The number of packets received
from unknown senders. (channel specific)
uengine dsp_rx_stat (active bit not set)  = 0      - The number of packets received
while channel was not open.
uengine dsp_rx_stat (passed UDP port check) = 6775   - The number of packets in VGW
port range.
uengine dsp_rx_stat (packets to DSP)       = 6776    - The number of packets sent
to the DSP. (channel specific)
uengine dsp_tx_stat (packets from DSP)    = 6775    - The number of packets received
from DSP. (channel specific)
uengine dsp_tx_stat (invalid hdr, active bit not set) = 0 - The number of packets
sent when the channel was not open. (channel specific)
uengine dsp_tx_stat (packets to MAC)       = 8234    - The number of packets sent
from micro engines to MAC.
MAR 25 03:47:34 tMVX_XSPY: Info 0000120288 - DIM: 1:2, Tx='GET_RXTX_STAT'(67)
clear=0x0
MAR 25 03:47:34 tMVX_XSPY: Info 0000120288 - DIM: 1:2, Rx 'GET_RXTX_STAT'(67) Len=57
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, rx_packet_count      = 687       - number of
received voice packets that are sent for playout
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, tx_packet_count      = 2263      - number of
transmitted voice packets
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, silence_packet_count = 58553     - number of
voice frames that were classified as silence on a transmit side

MAR 25 03:47:34 tMVX_DIM: Info TCID 6, min_jitter           = 10        - minimum
packet interarrival time
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, max_jitter           = 33        - maximum
packet interarrival time
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, rtp_average_jitter   = 0       - RTP average
packet interarrival time
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, tx_grant_sync_drop   = 0         - Number of
frames dropped to align with a packet sync
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, tx_octets            = 76288     - Number of
Tx octets
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, rx_octets            = 36034     - Number of
Rx octets
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, aal2_cod_prof_chgs   = 0         - Number of
AAL2 codec profile def.
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, dtmf_tx_packets       = 0        - Number of
Tx inband DTMF Relay packets
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, dtmf_rx_packets       = 0        - Number of
Rx inband DTMF Relay packets
MAR 25 03:47:34 tMVX_XSPY: Info 0000120289 - DIM: 1:2, Tx='GET_ERROR_STAT'(66)
clear=0x0
MAR 25 03:47:34 tMVX_XSPY: Info 0000120289 - DIM: 1:2, Rx 'GET_ERROR_STAT'(66) Len=25
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, invalid_header_count    = 0      - number of
incoming voice packets dropped due to invalid header
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, to_micro_overflow_count = 0      - number of
transmit voice packets dropped due to voice buffer overflow
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, rx_routing_dropped      = 0      - not used
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, lost_enh_packet_count   = 0      - number of
lost incoming enhancement voice packets
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, no_core_packet_count    = 0      - number of
dropped incoming enhancement voice packets due to absence of a core packet
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, pkt_lost_by_network     = 0      - packets
lost on the network
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, rc4key_update_lost_pkt_count = 0 - number of
dropped packets due to RC4 key state update
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, invalid_mac_header_count = 0     - number of
```

```
dropped packets due to invalid MAC header
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, invalid_ssrc_count      = 0     - number of
dropped packets with invalid RX SSRC
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, invalid_payload_count   = 0     - number of
dropped packets with invalid RX payload type
MAR 25 03:47:34 tMVX_XSPY: Info 0000120290 - DIM: 1:2, Tx='GET_VP_STAT'(65)
MAR 25 03:47:34 tMVX_XSPY: Info 0000120290 - DIM: 1:2, Rx 'GET_VP_STAT'(65) Len=21
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, avg_playout_delay    = 24       - Average
delay of VPU FIFO (in ms)
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, lost_packet_count    = 0       - Lost Segment
Counter
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, replay_packet_count  = 0        - Replay
Segment Counter
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, idle_packet_count    = 59989    - Idle Segment
Counter
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, dropped_packet_count = 9       - Drop Segment
Counter
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, rx_packet_count      = 8477     - Rx Segment
Counter
MAR 25 03:47:34 tMVX_DIM: Info TCID 6, avg_frame_jitter     = 1        - Average
Packet Jitter (in ms) ->
```

vgwPLLog

Syntax: **vgwPLLog state**

This command controls the generation of log messages for packet loss detected during a call in the received packet stream (from the IP Phone). This command applies only to the VGMCs.

The following table describes the command parameters.

Table 86: Command parameters

Parameter	Value	Description
state	0–2	0 = off 1 = print log message at call termination (default) 2 = print log messages as packet loss is detected during call When state = 1 (the default setting), a message prints at the end of the call that shows the number of packets lost for the call duration and the percentage of the total packets sent. The call affected is identified by both the gateway channel and the terminal IP address. When state = 2, a message prints each time packet loss is detected indicating the number of packets were lost at that moment. The call is identified by channel number. Changes to the state parameter are lost on power cycle or card reboot.

The following example shows the output when state is equal to 1.

```
VGMC> vgwPLLog 1
value = 0 = 0x0
```

```
VGMC>
SEP 22 11:05:47 tRTP: Info channel 0 disconnected from 47.147.75.81, lost 6, total
430, precentageLost 1.4%,     (tick 97514)
```

The following example shows the output when state is equal to 2.

```
VGMC> vgwPLLog 2
value = 0 = 0x0
VGMC>
SEP 22 11:05:49 tRTP: Info SML GAP in RTP seqNo chan 0 (recd: 22802, expect: 22800,
sending 1001, gap 2,     tick 98400)
```

vgwRegisterTraceAllOff

Syntax: **`vgwRegisterTraceAllOff`**

Turn off the trace for all channels.

vgwRegisterTraceHelp

Syntax: **`vgwRegisterTraceHelp`**

This command describes the CLI commands and parameters.

vgwRegistrationTraceSetOutput

Syntax: **`vgwRegistrationTraceSetOutput trace_output, "file_name"`**

The following table describes the command parameters.

Table 87: Command parameters

Parameter	Value	Description
trace_output	1–4	Trace output destination, where 1 = TTY 2 = SYSLOG 3 = File 4 = File and TTY
file_pathname	"string"	Specify the file to print to if trace_output = 3 or 4. Enclose the string in quotation marks. You can enter the entire path name, or the file name only. If you enter only the file name, the default path is C:/file_name.

The following example shows command output.

```
vgwTraceSetOutput 3, "trace.txt"
value = 0 = 0x0
```

vgwRegistrationTraceOff

Syntax: **`vgwRegistrationTraceOff chNum`**

Turn off the trace for the specified channel.

vgwRegistrationTraceSettings

Syntax: **`vgwRegistrationTraceSettings`**

Print the current trace settings.

vgwShow

Syntax: **`vgwShow "endpointIPAddr", port`**

Display status information for the VGMC active gateway channels. This command is not available on the Signaling Server.

If found, the display shows the identification of the card whose gateway channel connects to that address and shows the information for the channel. This is useful, for instance, when you need to identify from which card to collect gateway statistics (for example, packet loss). You can determine the same information from the Call Server using the TRAC/TRAK command in LD 80.

Note:

IP Phone to IP Phone calls do not appear because they do not use gateway channels. However, if an IP Phone is in a conference call (even with other IP Phones), a gateway channel is used for each telephone (because a TDM conference bridge is used).

The following table describes the command parameters.

Table 88: Command parameters

Parameter	Value	Description
endpointIPAddr	"string"	Optional. Specify the endpoint IP address to search for in all VGMC channels in the node.

Parameter	Value	Description
port	–	Optional. Specify a port number to limit the output if multiple IP Phones share a single public signaling IP address (for example, behind a NAT device).

The following table describes the data parameters printed by this command. Information prints only for active (nonidle and equipped) gateway channels.

Table 89: Data output

Parameter	Description
Chan	Gateway channel
ChanState	State of channel (Idle, Busy, Disabled, or Unequipped)
DspMode	Mode DSP is in (Voice, Closed, Pending)
Codec	Frame size used for call
Tn	Physical TN of the channel in packed format
Reg	Status of channel gateway registration
Air Time	Duration of audio stream connection in seconds. A call placed on hold closes the audio stream, so the channel returns to Idle, and Air Time becomes zero. However, the same channel is used when the telephone retrieves the call from hold.
rxTsap	IP address and port VGMC receives RTP packets on.
txTsap	IP address and port VGMC sends RTP packets to.

The following example shows command output on the ITG-P card.

```
VGMC> vgwShow
Chan ChanState  DspMode   Codec     Tn     Reg AirTime       rxTsap             txTsap
---- ---------- --------- ---------- ------ --- ------- --------------------
--------------------
0 Busy       Voice     G.711-20   0x0008 yes      11        10.1.1.2:5200
10.1.1.4:5200
1 Busy       Voice     G.711-20   0x0009 yes      11        10.1.1.2:5202
10.1.1.5:5200
2 Busy       Voice     G.711-20   0x000a yes      11        10.1.1.2:5204
10.1.1.6:5200
value = 3220 = 0xc94

VGMC> vgwShow "10.1.1.4"
value = 0 = 0x0
VGMC> Found on Card TN    002-00   , ELAN IP 47.11.214.52, TLAN IP 10.1.1.2
Chan ChanState  DspMode   Codec     Tn     Reg AirTime       rxTsap             txTsap
---- ---------- --------- ---------- ------ --- ------- --------------------
--------------------
```

```
0 Busy       Voice     G.711-20   0x0008 yes      68        10.1.1.2:5200
10.1.1.4:5200
```

In a NAT IP network environment, more than one IP Phone can map to a single IP address. The input is modified to allow the entry of the public port number for a specific telephone. If you enter no port number, the first entry found with the specified IP address on a VGMC is returned, as shown in the following example.

```
VGMC> vgwShow "47.11.215.136"
value = 0 = 0x0
-> Found on Card TN    005-00   , ELAN IP 47.11.216.174, TLAN IP 47.11.215.143,
number of matches 2
Chan ChanState  DspMode   Codec     Tn    Reg AirTime       rxTsap            txTsap
---- ---------- --------- ---------- ------ --- ------- --------------------
--------------------
17 Busy      Voice     G.711-20   0x0505 yes      21       47.11.215.143:5234
47.11.215.136:2237

-> Found on Card TN    003-00   , ELAN IP 47.11.216.175, TLAN IP 47.11.215.146,
number of matches 1
Chan ChanState  DspMode   Codec     Tn    Reg AirTime       rxTsap            txTsap
---- ---------- --------- ---------- ------ --- ------- --------------------
--------------------
1 Busy      Voice     G.711-20   0x0307 yes      21       47.11.215.145:5202
47.11.215.136:5200
```

When the IP address is found in the list of voice Gateway channels for a card other than where you entered the command, the voice gateway channel information for the first occurrence is returned plus a count of the number of times the IP address occurs in that card list. Multiple instances can occur when the customer network is configured so that multiple phones are behind a NAT device that shares the public IP address of the device.

If there is more than one match, you can log on to that card and enter the command without entering an IP address and port number to print all busy channels on the card. To quickly find a particular telephone, use the IPDN or DNIP commands in LD 117 to obtain the media stream public IP address and port number for the telephone, and then enter those as parameters for the vgwShow command.

vgwShowAll

Syntax: **vgwShowAll**

Print information about all gateway channels on a VGMC. This command is not available on the Signaling Server.

The following example shows command output.

```
VGMC> vgwShowAll
Chan ChanState  DspMode   Codec     Tn    Reg AirTime       rxTsap            txTsap
---- ---------- --------- ---------- ------ --- ------- --------------------
--------------------
0 Busy       Voice     G.711-20   0x0008 yes    7661        10.1.1.2:5200
10.1.1.4:5200
1 Busy       Voice     G.711-20   0x0009 yes    7661        10.1.1.2:5202
10.1.1.5:5200
```

```
2 Busy       Voice     G.711-20   0x000a yes    7661        10.1.1.2:5204
10.1.1.6:5200
3 Idle       Closed    n/a        0x000b yes       0         0.0.0.0:0000
0.0.0.0:0000
4 Idle       Closed    n/a        0x0048 yes       0         0.0.0.0:0000
0.0.0.0:0000
5 Idle       Closed    n/a        0x0049 yes       0         0.0.0.0:0000
0.0.0.0:0000
... (one line printed per channel)
21 Idle       Closed    n/a        0x0149 yes       0         0.0.0.0:0000
0.0.0.0:0000
22 Idle       Closed    n/a        0x014a yes       0         0.0.0.0:0000
0.0.0.0:0000
23 Idle       Closed    n/a        0x014b yes       0         0.0.0.0:0000
0.0.0.0:0000
value = 98 = 0x62 = ’b’
```

vgwTraceAllOff

Syntax: **vgwTraceAllOff**

This command turns off the trace for all channels.

The following example shows command output.

```
-> vgwTraceAllOff
value = 0 = 0x0
```

vgwTraceHelp

Syntax: **vgwTraceHelp**

This command displays the CLIs associated with the trace tool and describes each CLI parameter.

vgwTraceOff

Syntax: **vgwTraceOff chNum**

This command turns off the trace for the specified channel.

The following table describes the command parameters.

Table 90: Command parameters

Parameter	Value	Description
chNum	–	Channel number.

vgwTraceOn

Syntax: **`vgwTraceOn chNum, vgw_trace_tool`**

This command initiates the audio message tracing.

The following table describes the command parameters.

Table 91: Command parameters

Parameter	Value	Description
chNum	–	Specify the voice Gateway or channel on which to perform ACP or audio message tracing.
vgw_trace_tool	–	Bitmask identifying the set of messages to trace for the specified channel. 0 = All voice Gateway Message Tracing 1 = A07 Message Tracing 2 = Audio Message Tracing 4 = Registration Message Tracing

The following example shows command output.

```
-> vgwTraceOn 1,1
value = 0 = 0x0
```

vgwTraceSetOutput

Syntax: **`vgwTraceSetOutput trace_output, "file_pathname"`**

Assign the output destination for the trace tool.

The following table describes the command parameters.

Table 92: Command parameters

Parameter	Value	Description
trace_output	1–4	Trace output destination, where 1 = TTY 2 = SYSLOG 3 = File 4 = File and TTY

Parameter	Value	Description
file_pathname	"string"	Specify the file to output to if trace_output = 3 or 4. Enclose the string in quotation marks. You can enter the entire path name, or the file name only. If you enter only the file name, the default path is C:/file_name.

The following example shows command output.

```
-> vgwTraceSetOutput 3, "trace.txt"
value = 0 = 0x0
```

vtmUMSDownload

Syntax: **`vtmUMSDownload “IPAddr”`**

This command initiates a request for a firmware download to the specific IP Phone.

The following table describes the command parameters.

Table 93: Command parameters

Parameter	Value	Description
file_pathname IPAddr	"string"	Public IP address of the IP Phone. Enclose the string in quotation marks.

The following example shows command output.

```
-> vtmUMSDownload "147.11.215.136"
value = 0 = 0x0
-> 21/01/04 14:20:09 LOG0006 UMS: decision-bless "147.11.215.136"
21/01/04 14:20:09 LOG0006 VTM: vtmTerminal Online 0x9b93da0:  set is already online
```

vtmAPBSet

Syntax: **`vtmAPBSet “IPAddr”`**

Refresh transducer APB values for a specific IP Phone. If no lossPlan is defined, the following default values are used: HandsetRLR = 2 HandsetSLR = 11 HandsetSTMR = 18 HeadsetRLR = 0 HeadsetSLR = 11 HeadsetSTMR =18 HandsfreeRLR = 13 HandsfreeSLR = 16 HandsfreeSTMR = 22

The following table describes the command parameters.

Table 94: Command parameters

Parameter	Value	Description
IPAddr	"string"	Optional. Public IP address of the IP Phone. Enclose the string in quotation marks.

The following example shows command output.

```
-> vtmAPBSet "147.11.215.135"
value = 0 = 0x0
```

vxshell

Syntax: **`vxshell`**

Access the OS shell from the the VGMC or the pdt> prompt on the Signaling Server.

The following example shows command output on the Signaling Server.

```
pdt> vxshell
->
```

The following example shows command output on the VGMC.

```
VGMC> vxshell
login: pdt2
password:
Welcome to the VxWorks Shell
WARNING: Data entry errors in this shell could cause loss of service.
Use itgShell to return to the ITG shell.
value = 52688160 = 0x323f520
->
```

wapListShow

Syntax: **`wapListShow`**

Display all IP Phones that registered to the WAP (Web Application Proxy) module .

The following example shows command output.

```
> wapListShow
TN     pWapSet    appState   SessWeb   hForm   defaultPostData                 Title
---- ---------- ---------- --------- -------- ---------------------------------
----------
60c5 0xbc4afb0 2 0xbdf2f20 0x0
uid=6113&cust=0&pni=0&hloc=&tn=24773&language=english (null)
```

wapTraceOff

Syntax: **`wapTraceOff "phoneIPAddress"`**

Turn off the hidden trace for a specific IP Phone.

The following example shows command output.

```
 -> wapTraceOff "47.11.216.186"
WAP trace stopped for 47.11.216.186
```

wapTraceOn

Syntax: **`wapTraceOn "phoneIPAddress"`**

Turn on the hidden trace for a specific IP Phone (or more than one). The log is written into the /u/trace directory with the file name wap.log.

The following example shows command output.

```
 -> wapTraceOn "47.11.216.186"
value = 789305530 = 0x2f0bd8ba
```

wapTraceVerboseSet

Syntax: **`wapTraceVerboseSet mode`**

This command allows WAP to print on-screen any document it receives from the application server. This command is useful to debug screen operation on single IP Phones.

The following table describes the command parameters.

Table 95: Command parameters

Parameter	Value	Description
mode	0, 1	0 = Enables verbose mode for all IP Phones. 1 = Disables verbose mode for all IP Phones.

The following example shows command output.

```
-> wapTraceVerboseSet 1
value = 1 = 0x1
```

```
-> wapTraceVerboseSet 0
value = 0 = 0x0
```

wapWebFormShow

Syntax: **`wapWebFormShow`**

Use wapListShow to obtain the Web handle displayed on the IP Phone, and then use this command to get a detailed view on this Web form.

The following example shows command output.

```
-> wapWebFormShow 0xadcec98
------------------WAP WebForm------------------
ACTION: pdperdir.cgi?fn=12
METHOD: get
POSTDATA name=Jicheng,Zhou&number=3904
FORMMENU: 0
ACTINPUT: 0
SIZEOFPO: 32
HCONTROL: 0x0
-------- Input Elements-----------
VAR: name TYPE: 0
VAL: Jicheng,Zhou
TXT: Enter Name:
MAXLEN: 24
POST: name=Jicheng,Zhou
HCONTR: 0xad9c784
PINPUT: 0xad939b8
VAR: number  TYPE: 6
VAL: 3904
TXT: Enter Name:
MAXLEN: 31  POST: number=3904
HCONTR: 0x0
PINPUT: 0xadcea
```

webClientShow

Syntax: **`webClientShow`**

Print statistics for the web client.

The following example shows command output.

```
 -> webClientShow
Failed on getting web client handle ............ 1
```

XspySetLevel

Syntax: **`XspySetLevel key, filterLevel`**

Xspy is a generic function in the Telogy code through which error and information messages are printed. This command applies only to the VGMCs.

This command allows you to configure what prints from the various components of the Telogy code and is global to all DSP channels. For example, you can enable printing of the commands sent between the DIM module and the DSP. These commands can display information about gain settings, echo canceller control, and other parameters sent to the DSP when a call is set up.

The following table describes the command parameters.

Table 96: Command parameters

Parameter	Value	Description
key	0, 1	Specify a component of the Telogy code, where 0 = All 1 = Root The recommended value is 0.
filterLevel	0 - 6	Specify the minimum level of messaging to print, where 0 = General information 1 = Function entry 2 = Normal event (items such as STATUS REQ/ RESP polling do not print) 3 = Minor unexpected event 4 = Major unexpected event 5 = Fatal error 6 = Spy trace off (turns off printing) The recommended value is 0 or 2.

Note:

If you enter the XspySetLevel command without parameters, the parameters default to XspySetLevel 0,0.

The following example shows the output when a call is made.

```
-> XspySetLevel 0,0
value = 0 = 0x0
```

ITG-P card is idle:

```
OCT 23 11:29:27 tMVX_XSPY: Info 0083725626 - DIM: 0:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:29:27 tMVX_XSPY: Info 0083725626 - DIM: 0:*, Rx 'TONE_DETECT'(101) Len= 5
OCT 23 11:29:27 tMVX_XSPY: Info 0083725818 - DIM: 1:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:29:27 tMVX_XSPY: Info 0083725818 - DIM: 1:*, Rx 'TONE_DETECT'(101) Len= 5
OCT 23 11:29:28 tMVX_XSPY: Info 0083726078 - DIM: 2:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:29:28 tMVX_XSPY: Info 0083726078 - DIM: 2:*, Rx 'TONE_DETECT'(101) Len= 5
OCT 23 11:29:33 tMVX_XSPY: Info 0083728492 - DIM: 3:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:29:33 tMVX_XSPY: Info 0083728492 - DIM: 3:*, Rx 'TONE_DETECT'(101) Len= 5
OCT 23 11:29:33 tMVX_XSPY: Info 0083728740 - DIM: 4:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:29:33 tMVX_XSPY: Info 0083728740 - DIM: 4:*, Rx 'TONE_DETECT'(101) Len= 5
OCT 23 11:29:34 tMVX_XSPY: Info 0083728990 - DIM: 5:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:29:34 tMVX_XSPY: Info 0083728990 - DIM: 5:*, Rx 'TONE_DETECT'(101) Len= 5
OCT 23 11:29:34 tMVX_XSPY: Info 0083729238 - DIM: 6:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:29:34 tMVX_XSPY: Info 0083729238 - DIM: 6:*, Rx 'TONE_DETECT'(101) Len= 5
OCT 23 11:29:35 tMVX_XSPY: Info 0083729488 - DIM: 7:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:29:35 tMVX_XSPY: Info 0083729488 - DIM: 7:*, Rx 'TONE_DETECT'(101) Len= 5
```

IP to TDM call:

```
->
OCT 23 11:26:22 tMVX_XSPY: Info 0083633318 - DIM: 0:0, dim_open_channel. TCID = 0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633320 - DIM:
0:0,Tx='OPEN_CHANNEL'(13):tx=9,rx=9,TxVIF=640,RxVIF=640,VAD=0,Comp=1,NomDel=60,MaxD
el=120,IdleNois=-6500,EcTail=1024,
OCT 23 11:26:22 tMVX_XSPY: Info 0083633320 - ----
VadThrsh=-17,TxG=0,RxG=0,TxInG=0,Encap=3,AdPOut=1,Ts=1,Resamp=0,PktIO=0,PktSIO_Ts=0
,EcCfg=0x2,NlpFixCfg=0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633320 - DIM: Tcid 0. Swo Idle => Swo Initial
OCT 23 11:26:22 tMVX_XSPY: Info 0083633322 - DIM: 0:0, Request channel poll period
10 msecs
OCT 23 11:26:22 tMVX_XSPY: Info 0083633322 - DIM: 0:0, DSP bpm 0, Channel bpm 0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633322 - DIM: 0, Req poll period set to 4 msecs
OCT 23 11:26:22 tMVX_XSPY: Info 0083633322 - DIM: 0:0, Request channel poll period
5 msecs
OCT 23 11:26:22 tMVX_XSPY: Info 0083633322 - DIM: 0:0, DSP bpm 10, Channel bpm 10
OCT 23 11:26:22 tMVX_XSPY: Info 0083633322 - DIM: 0, Req poll period set to 4 msecs
OCT 23 11:26:22 tMVX_XSPY: Info 0083633324 - DIM: 0:0, Tx='DTMF_REL_ENABLE'(40)
OCT 23 11:26:22 tMVX_XSPY: Info 0083633326 - DIM: 0:0, Tx='DTMF_MODE'(2) detect
mode=0x0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633328 - DIM: 0:0, Tx='VOICE_MODE'(11)
ttu_enable=0, start_mark=0, t_tone=0, t_s1=0, t_s1s2=0, seq_S1=0, seq_S2=0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633330 - DIM: 0:0, Tx='EC_CONTROL'(3) Len=12
valid_bitfield=0x1c,tail_len=0,noise_lev=0, config_bits=0x40
OCT 23 11:26:22 tMVX_XSPY: Info 0083633330 - DIM: 0:0, ---- config_bits=0x40,
nlp_aggress=0, comfort_noise_cfg=0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633330 - DIM: 0:0, ---- Valid Bitfield:
EC_TAIL_VALID=0,EC_NLEVEL_VALID=0, CONFIG_VALID=1
OCT 23 11:26:22 tMVX_XSPY: Info 0083633330 - DIM: 0:0, ---- Valid Bitfield:
EC_NLPAGG_VALID=1, EC_CN_CFG_VALID=1
OCT 23 11:26:22 tMVX_XSPY: Info 0083633330 - DIM: 0:0, ---- config EC_DISABLE=0,
EC_FREEZE=0,EC_NLP_DISABLE=0, EC_AUTO_UPD_DISABLE=0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633330 - DIM: 0:0, ---- config EC_MAG_FREEZE=0,
EC_SRCH_FREEZE_DISABLE=1, EC_NLP_CN_FIXED=0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633330 - DIM: 0:0, ---- config
EC_4W_DETECT_DISABLE=0, EC_TEST_BIT_0=0, EC_TEST_BIT_1=0, EC_TEST_BIT_2=0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633330 - DIM: 0:0, ---- config EC_TEST_BIT_3=0,
EC_TEST_BIT_4=0, EC_NLP_FORCE_ENABLE=0, EC_NLP_NORM_LEVEL=0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633332 - DIM: 0:0, Tx='ENABLE_TONE_DET'(4)
tone=V.21 TONE
OCT 23 11:26:22 tMVX_XSPY: Info 0083633334 - DIM: 0:0, Tx='ENABLE_TONE_DET'(4)
tone=V.25 TONE
OCT 23 11:26:22 tMVX_XSPY: Info 0083633336 - DIM: 0:0, Tx='SET_RX_GAIN'(43) gain=0x0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633338 - DIM: 0:0, Tx='SET_TX_GAIN'(42) gain=+0,
inGain=+0
OCT 23 11:26:22 tMVX_XSPY: Info 0083633350 - DIM: 0:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:26:22 tMVX_XSPY: Info 0083633350 - DIM: 0:*, Rx 'TONE_DETECT'(101) Len= 5
OCT 23 11:26:22 tMVX_XSPY: Info 0083633386 - DIM: Tcid 0. Swo Initial => Swo Ready
OCT 23 11:26:23 tMVX_XSPY: Info 0083633454 - DIM: 3:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:26:23 tMVX_XSPY: Info 0083633454 - DIM: 3:*, Rx 'TONE_DETECT'(101) Len= 5
```

Releasing the call:

```
->
OCT 23 11:29:17 tMVX_XSPY: Info 0083720618 - DIM: 0:0, stat req cmd=65 clear=0
OCT 23 11:29:17 tMVX_XSPY: Info 0083720618 - DIM: 0:0, stat req cmd=66 clear=0
OCT 23 11:29:17 tMVX_XSPY: Info 0083720618 - DIM: 0:0, stat req cmd=67 clear=0
OCT 23 11:29:17 tMVX_XSPY: Info 0083720620 - DIM: 0:0, Tx='GET_VP_STAT'(65)
OCT 23 11:29:17 tMVX_XSPY: Info 0083720620 - DIM: 0:0, Rx 'GET_VP_STAT'(65) Len=17
OCT 23 11:29:17 tMVX_XSPY: Info 0083720620 - DIM: 0:0 - MGB_DM_GET_VP_DELAY
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, avg_playout_delay    = 56
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, lost_packet_count    = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, replay_packet_count  = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, idle_packet_count    = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, dropped_packet_count = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, rx_packet_count      = 17446
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, avg_frame_jitter     = 0
OCT 23 11:29:17 tMVX_XSPY: Info 0083720622 - DIM: 0:0, Tx='GET_ERROR_STAT'(66)
clear=0x0
OCT 23 11:29:17 tMVX_XSPY: Info 0083720622 - DIM: 0:0, Rx 'GET_ERROR_STAT'(66) Len=15
OCT 23 11:29:17 tMVX_XSPY: Info 0083720622 - DIM: 0:0 - MGB_DM_GET_ERROR_STAT
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, invalid_header_count    = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, to_micro_overflow_count = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, lost_enh_packet_count   = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, no_core_packet_count    = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, pkt_lost_by_network     = 0
OCT 23 11:29:17 tMVX_XSPY: Info 0083720624 - DIM: 0:0, Tx='GET_RXTX_STAT'(67)
clear=0x0
OCT 23 11:29:17 tMVX_XSPY: Info 0083720624 - DIM: 0:0, Rx 'GET_RXTX_STAT'(67) Len=29
OCT 23 11:29:17 tMVX_XSPY: Info 0083720624 - DIM: 0:0 - MGB_DM_GET_RXTX_STAT
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, rx_packet_count      = 17446
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, tx_packet_count      = 17456
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, silence_packet_count = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, min_jitter           = 5
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, max_jitter           = 15
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, rtp_average_jitter   = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, tx_grant_sync_drop   = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, tx_octets            = 1396480
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, rx_octets            = 1395680
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, aal2_cod_prof_chgs   = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, dtmf_tx_octets       = 0
OCT 23 11:29:17 tMVX_DIM: Info TCID 0, dtmf_rx_octets       = 0
OCT 23 11:29:17 tMVX_XSPY: Info 0083720626 - DIM: 0:0, Tx='CLOSE_CHAN'(14)
OCT 23 11:29:17 tMVX_XSPY: Info 0083720626 - DIM: 0:0, Request channel poll period
4 msecs
OCT 23 11:29:17 tMVX_XSPY: Info 0083720626 - DIM: 0:0, DSP bpm 0, Channel bpm 0
OCT 23 11:29:17 tMVX_XSPY: Info 0083720626 - DIM: 0, Req poll period set to 4 msecs
OCT 23 11:29:17 tMVX_XSPY: Info 0083720626 - DIM: Tcid 0. Swo Ready => Swo Idle
OCT 23 11:29:17 tMVX_XSPY: Info 0083720626 - DIM 0,0: DSP got packet for a closed
or disassoc channel (len=100, state=1)
OCT 23 11:29:17 tMVX_XSPY: Info 0083720816 - DIM: 1:0, Tx='STATUS_REQUEST'(8)
OCT 23 11:29:17 tMVX_XSPY: Info 0083720816 - DIM: 1:*, Rx 'TONE_DETECT'(101) Len= 5
```

Chapter 7: MGC command reference

The commands and variables in this section are listed in alphabetical order.

dbhwshow

Syntax: **`dbhwshow`**

Display the model and revision numbers for installed DBs.

The following example shows command output.

```
oam> dbhwshow
DB1 model and revision no:     NTDW62AA
```

diskshow

Syntax: **`diskshow`**

Display the total, used, and available disk space on the internal flash card.

The following example shows command output.

```
oam> diskshow
Partition /p  Total:  49.00MB Used:  37.26MB Avail:  11.74MB
Partition /p1 Total:  48.98MB Used:  37.26MB Avail:  11.73MB
Partition /e  Total:  12.00MB Used:   8.75MB Avail:   3.25MB
Partition /u  Total:  12.00MB Used:   0.77MB Avail:  11.23MB
```

displayshow

Syntax: **`displayshow`**

Display the information currently showing on the four-character faceplate display. If the display cycles through multiple messages, all messages are shown.

The following example shows command output.

```
oam> displayshow
020 0
```

dspnumshow

Syntax: **`dspnumshow status`**

Display the number of DSP channels for each DSP DB in the specified mode.

The following table describes the command parameters.

Table 97: Command parameters

Parameter	Value	Description
status	IDLE, UNEQ, DSBL, BUSY	Optional. Specify the mode for which to display the number of DSP channels, where: IDLE = idle UNEQ = unequipped DSBL = disabled BUSY = busy

The following example shows command output.

```
oam> dspnumshow idle
Card : 11   32 Channels are: Idle
oam> dspnumshow uneq
Card : 11   0 Channels are: Uneq
oam> dspnumshow dsbl
Card : 11   0 Channels are: Dsbl
oam> dspnumshow busy
Card : 11   0 Channels are: Busy
```

dspchanstateshow

Syntax: **`dspchanstateshow`**

List the state (busy, idle, disabled, or unequipped) for all channels on the DSP DBs.

The following example shows command output.

```
oam> dspchanstateshow
Card No.: 11
Channels:    0     1     2     3     4     5     6     7
Idle    Idle    Idle    Idle    Idle    Idle    Idle    Idle
Channels:    8     9     10     11     12     13     14     15
Idle    Idle    Idle    Idle    Idle    Idle    Idle    Idle
Channels:    16     17     18     19     20     21     22     23
Idle    Idle    Idle    Idle    Idle    Idle    Idle    Idle
Channels:    24     25     26     27     28     29     30     31
Idle    Idle    Idle    Idle    Idle    Idle    Idle    Idle
```

dsphwcheck

Syntax: **dsphwcheck**

Perform a basic DSP hardware diagnostic check, testing for any hardware failures.

The following example shows command output.

```
oam> dsphwcheck
Daughterboard 1 : NTDW62AA (32 Channel)
Initialization /self - test result : PASS
Version Check                      : 4
Checksum                           : 1d03
Device Type                        : M82520
G.711 VBE                          : PASS
Daughterboard 2                    : Not Installed
```

dsplooptest

Syntax: **dsplooptest card1 channel1 card2 channel2**

Perform a DSP loopback test on idle channels.

The following table describes the command parameters.

Table 98: Command parameters

Parameter	Value	Description
card1, card2	–	Cards on which to test channels. Disable the cards in Call Server LD 32 before using the dsplooptest command.
channel1, channel2	–	Channels to test. Ensure that the channels reside on the same physical DSP device.

The following example shows command output.

```
oam> dsplooptest 11 0 11 1

!!! This command will cause service interuption !!!

!!! Please go to CS LD32 disable card 11 unit 0 and card 11 unit 1  before performing
this test !!!

!!! This command uses card 10 unit 0 and card 10 unit 1 as well. Disabling these
units is recommended !!!

Do you want to proceed? (y/n/[a]bort) : y

Channel 1       Channel 2          Status
```

```
----------     -----------         --------
11   0            11   1            PASS
```

ethportmirror

Syntax: **`ethportmirror <to port><from port>`**

Capture traffic from a specified port to a mirrored port.

Use port mirroring to connect LAN analyzer equipment to the Layer 2 switch and capture LAN traffic on external LAN ports (such as Layer 2 TLAN/ELAN and 100BaseT Media Gateways). You can also use port mirroring to capture the Signaling or proprietary message traffic (Mindspeed Tone and Conf Module, Expansion Boards, and VoIP Daughter Boards) between internal Layer 2 components.

Table 99: Command parameters

Parameter	Value	Description
to port	2–7	Port used for mirroring. Disable this port by using the ethportdisable command before you can use this port for port mirroring. Use a port that is not in use (no TLAN or ELAN traffic).
from port	0–9	Port to mirror

The following example shows command output.

```
ldb> ethportdisable 4
Disable port 4  ([y]/n) :
ldb> ethportmirror 4 3
Mirror port 4 to port 3  ([y]/n) :
ldb> ethportshow

Port 0 = DB2  Internal
Port 1 = DB1  Internal
Port 2 = 1(ELAN) Back plane
Port 3 = 2(TLAN) Back plane
Port 4 = CE  Top face plate connector for CPPM only
Port 5 = CT  Second from top face plate connector for CPPM only
Port 6 = 1E  Second from bottom face plate connector
Port 7 = 2T  Bottom face plate connector
Port 8 = MSP  Internal
Port 9 = CSP  Internal
0x10=0x213b -Port 0 sends to  0 1 3 4 5 8
0x11=0x213b -Port 1 sends to  0 1 3 4 5 8
0x12=0x1200 -Port 2 sends to  9
0x13=0x2133 -Port 3 sends to  0 1 4 5 8
0x14=0x0000 -Port 4 sends to
0x15=0x211b -Port 5 sends to  0 1 3 4 8
0x16=0x1200 -Port 6 sends to  9
0x17=0x2123 -Port 7 sends to  0 1 5 8
0x18=0x203b -Port 8 sends to  0 1 3 4 5
0x19=0x1040 -Port 9 sends to  6
0x10=0x0001 -Port 0 receives from 0
0x11=0x0002 -Port 1 receives from 1
```

```
0x12=0x0004 -Port 2 receives from 2
0x13=0x8018 -Port 3 receives from 3  Is mirrored on port 4
0x14=0x0010 -Port 4 receives from 4
0x15=0x0020 -Port 5 receives from 5
0x16=0x0040 -Port 6 receives from 6
0x17=0x0080 -Port 7 receives from 7
0x18=0x0100 -Port 8 receives from 8
0x19=0x0200 -Port 9 receives from 9
Current vlan table number is 1
Dual homing is disabled.
Carrier detected on ports 3 6
Port 2 is running at 10 Mbps half duplex.
Port 3 is running at 100 Mbps half duplex.
Port 4 is running at 10 Mbps half duplex.
Port 5 is running at 10 Mbps half duplex.
Port 6 is running at 100 Mbps full duplex.
Port 7 is running at 10 Mbps half duplex.
```

Port: Designator ====== ============ CE: CPPMELAN 1E: FPELAN E: BPELAN CT: CPPMTLAN 2T: FPTLAN T: BPTLAN

ethportshow

Syntax: **`ethportshow`**

Display the Ethernet port settings for the external and internal interfaces. The output includes autonegotiation settings, duplex, port speed and port mirroring status.

The following example shows command output.

```
oam> ethportshow
Port 0 = DB2  Internal
Port 1 = DB1  Internal
Port 2 = 1(ELAN) Back plane
Port 3 = 2(TLAN) Back plane
Port 4 = CE  Top face plate connector for CPPM only
Port 5 = CT  Second from top face plate connector for CPPM only
Port 6 = 1E  Second from bottom face plate connector
Port 7 = 2T  Bottom face plate connector
Port 8 = MSP  Internal
Port 9 = CSP  Internal

0x10=0x21a3 -Port 0 sends to  0 1 5 7 8
0x11=0x21a3 -Port 1 sends to  0 1 5 7 8
0x12=0x1210 -Port 2 sends to  4 9
0x13=0x2123 -Port 3 sends to  0 1 5 8
0x14=0x1240 -Port 4 sends to  6 9
0x15=0x2183 -Port 5 sends to  0 1 7 8
0x16=0x1210 -Port 6 sends to  4 9
0x17=0x2123 -Port 7 sends to  0 1 5 8
0x18=0x20a3 -Port 8 sends to  0 1 5 7
0x19=0x1050 -Port 9 sends to  4 6

0x10=0x0001 -Port 0 receives from 0
0x11=0x0002 -Port 1 receives from 1
0x12=0x0044 -Port 2 receives from 2 6
0x13=0x0088 -Port 3 receives from 3 7
0x14=0x0010 -Port 4 receives from 4
0x15=0x0020 -Port 5 receives from 5
0x16=0x0044 -Port 6 receives from 2 6
```

```
0x17=0x0088 -Port 7 receives from 3 7
0x18=0x0100 -Port 8 receives from 8
0x19=0x0200 -Port 9 receives from 9

Current vlan table number is 0

Dual homing is enabled.

Carrier detected on ports 6 7

vlanPHYResolvedPrint:port 2  cmd 851  retval 50
Auto-negotiation is not complete for port 2!
Port 2 is running at 10 Mbps half duplex.
vlanPHYResolvedPrint:port 3  cmd 871  retval 50
Auto-negotiation is not complete for port 3!
Port 3 is running at 10 Mbps half duplex.
vlanPHYResolvedPrint:port 4  cmd 891  retval 10
Auto-negotiation is not complete for port 4!
Port 4 is running at 10 Mbps half duplex.
vlanPHYResolvedPrint:port 5  cmd 8b1  retval 10
Auto-negotiation is not complete for port 5!
Port 5 is running at 10 Mbps half duplex.
vlanPHYResolvedPrint:port 6  cmd 8d1  retval 7c40
Port 6 is running at 100 Mbps full duplex.
vlanPHYResolvedPrint:port 7  cmd 8f1  retval 7c40
Port 7 is running at 100 Mbps full duplex.

Port:   Designator
======  ============
CE:    CE
1E:    1E
E:    E
CT:    CT
2T:    2T
T:    T
```

ethspeedshow

Syntax: **`ethspeedshow`**

Display the port speed and duplex setting of the embedded Ethernet switch currenlty running.

The following example shows command output.

```
oam> ethspeedshow
vlanPHYResolvedPrint:port 2  cmd 851  retval 50
Auto-negotiation is not complete for port 2!
Port 2 is running at 10 Mbps half duplex.
vlanPHYResolvedPrint:port 3  cmd 871  retval 50
Auto-negotiation is not complete for port 3!
Port 3 is running at 10 Mbps half duplex.
vlanPHYResolvedPrint:port 4  cmd 891  retval 10
Auto-negotiation is not complete for port 4!
Port 4 is running at 10 Mbps half duplex.
vlanPHYResolvedPrint:port 5  cmd 8b1  retval 10
Auto-negotiation is not complete for port 5!
Port 5 is running at 10 Mbps half duplex.
vlanPHYResolvedPrint:port 6  cmd 8d1  retval 6c40
Port 6 is running at 100 Mbps full duplex.
```

```
vlanPHYResolvedPrint:port 7  cmd 8f1  retval 6c40
Port 7 is running at 100 Mbps full duplex.
```

isecIkeShowPAll

Syntax: **`isecIkeShowPAll`**

Display all protection suites (inbound and outbound IPsecSecurity association pairs).

The following example shows command output.

```
oam> isecIkeShowPAll
IPSec has not been initialized
```

isecIpsecShowIf

Syntax: **`isecIpsecShowIf`**

The following example shows command output.

```
oam> isecIpsecShowIf
IPSec has not been intialized
```

macshow

Syntax: **`macshow`**

Display all MAC addresses associated with the Ethernet ports (both internal and external) on the embedded Ethernet switch.

The following example shows command output.

```
oam> macshow ELAN : 00:13:65:ff:ed:a2 TLAN : 00:13:65:ff:ed:a3 DB1 : 00:13:65:ff:ed:73
DB2 : NOT AVAILABLE
```

memshow

Syntax: **`memshow`**

Display the total, used, and available RAM memory on the card.

The following example shows command output.

```
oam> memshow
Total: 121.92MB Used:  60.26MB Avail:  61.66MB
```

mgcdbshow

Syntax: **`mgcdbshow card_number`**

Display information about the DSP DB.

The following table describes the command parameters.

Table 100: Command parameters

Parameter	Value	Description
card_number	0, 11, 12, 13	Card number

The following example shows command output.

```
oam> mgcdbshow 11
Initialized  : 1
Type         : EXUT
TLAN DSP IP  : 10.10.10.65
Card TN      : 20 0 11
Card State   : ENBL
Uptime       : 2 days, 19 hours, 49 mins, 28 secs  (244168 secs)
Codecs       : G711Ulaw(default), G711Alaw, G729A, G711CC, T38FAX
```

mgcinfoshow

Syntax: **`mgcinfoshow`**

Display basic information about the MGC, including IP addresses, uptime, registration status, and superloop information.

The following example shows command output.

```
oam> mgcinfoshow
Registration Status: Registered on 47.11.214.87
UpTime:                  2 days, 19 hours, 27 minutes, 43 seconds

MGC Hostname:            justinsnewhost
MGC ELAN IP Address:     47.11.214.83 MGC
Subnet Mask:         255.255.255.0
MGC Gateway Address:     47.11.214.1

MGC TLAN IP Address:     10.10.10.97
MGC Subnet Mask:         255.255.254.0
MGC Default GW:          10.10.10.1
```

```
Primary CS Hostname:     biglabCS
Primary CS IP Address:   47.11.214.87

DB1 NT code:             NTDW62AA
DB1 TLAN IP Address:     10.10.10.65
DB1 TN:                  020 0 11

Media Gateway Information
Superloop Shelf:     020 0
TDS Loop:            100
CONF Loop:           101

Active TLAN port: Port 7 = 2T  Bottom face plate connector
TLAN port designator: 2T
TLAN set to auto negotiate.

Active ELAN port: Port 6 = 1E  Second from bottom face plate connector
ELAN port designator: 1E
ELAN set to auto negotiate.
ELAN security Disabled
```

mspversionshow

Syntax: **mspversionshow**

Display MSP Device type, ARM code, Voice DSP Revision, and T.38 version.

The following example shows command output.

```
oam> mspversionshow
MSP Device 0 (TnC):
Device Type    : M82515
Device Rev.    : REV_B
ARM Code       : v5_07
Voice DSP      : C64V_5_17_2
Fax Version    : T38DDP_VER_5_1_3
MSP Device 1 (DB1): (32 Channel)
Device Type    : M82520
Device Rev.    : REV_E
ARM Code       : Branch_5_07
Rev E - HP Voice DSP      : C64V_5_17_2
Fax Version    : T38DDP_VER_5_1_3
MSP Device 2 (DB2):  Not installed
```

ommshow

Syntax: **ommshow**

Print the current OM data to the console.

The following example shows command output.

```
oam> ommshow
collection_time : 12/14/2006 18:31
```

```
- VGW Call Status (Current hourly period) -
ChanAud_Setup: 0
ChanJitter_Avg: 0.00
ChanJitter_Max: 0
ChanPkt_Lost: 0.00
ChanLatency_Avg: 0.00
ChanVoice_Time: 0 mins 0 secs

<Card 0>
Unit   Call Attempts        Success          Fails
----   -------------------------------------------
00                0              0              0
01                0              0              0
02                0              0              0
03                0              0              0
04                0              0              0
05                0              0              0
06                0              0              0
07                0              0              0
08                0              0              0
09                0              0              0
10                0              0              0
11                0              0              0
12                0              0              0
13                0              0              0
14                0              0              0
15                0              0              0
16                0              0              0
17                0              0              0
18                0              0              0
19                0              0              0
20                0              0              0
21                0              0              0
22                0              0              0
23                0              0              0
24                0              0              0
25                0              0              0
26                0              0              0
27                0              0              0
28                0              0              0
29                0              0              0
30                0              0              0
31                0              0              0

<Card 11>
Unit   Call Attempts        Success          Fails
----   -------------------------------------------
00                0              0              0
01                0              0              0
02                0              0              0
03                0              0              0
04                0              0              0
05                0              0              0
06                0              0              0
07                0              0              0
08                0              0              0
09                0              0              0
10                0              0              0
11                0              0              0
12                0              0              0
13                0              0              0
14                0              0              0
15                0              0              0
16                0              0              0
17                0              0              0
18                0              0              0
19                0              0              0
20                0              0              0
21                0              0              0
```

```
22              0              0              0
23              0              0              0
24              0              0              0
25              0              0              0
26              0              0              0
27              0              0              0
28              0              0              0
29              0              0              0
30              0              0              0
31              0              0              0

<Card 12>
Unit   Call Attempts        Success          Fails
----   -----------------------------------------
00              0              0              0
01              0              0              0
02              0              0              0
03              0              0              0
04              0              0              0
05              0              0              0
06              0              0              0
07              0              0              0
08              0              0              0
09              0              0              0
10              0              0              0
11              0              0              0
12              0              0              0
13              0              0              0
14              0              0              0
15              0              0              0
16              0              0              0
17              0              0              0
18              0              0              0
19              0              0              0
20              0              0              0
21              0              0              0
22              0              0              0
23              0              0              0
24              0              0              0
25              0              0              0
26              0              0              0
27              0              0              0
28              0              0              0
29              0              0              0
30              0              0              0
31              0              0              0

<Card 13>
Unit   Call Attempts        Success          Fails
----   -----------------------------------------
00              0              0              0
01              0              0              0
02              0              0              0
03              0              0              0
04              0              0              0
05              0              0              0
06              0              0              0
07              0              0              0
08              0              0              0
09              0              0              0
10              0              0              0
11              0              0              0
12              0              0              0
13              0              0              0
14              0              0              0
15              0              0              0
16              0              0              0
17              0              0              0
18              0              0              0
```

```
19                0              0              0
20                0              0              0
21                0              0              0
22                0              0              0
23                0              0              0
24                0              0              0
25                0              0              0
26                0              0              0
27                0              0              0
28                0              0              0
29                0              0              0
30                0              0              0
31                0              0              0

- VGW Call Status (Since the system is up) -
Total VGW Call Attempts: 0
Total VGW Call Success: 0
Total VGW Call Failures: 0
Size of buffer 7281
```

rmonstatreset

Syntax: **`rmonstatreset`**

Reset all RMON statistics counters for a port on the embedded Ethernet switch.

The following example shows command output.

```
oam> rmonstatreset 1
Statistics counters have been reset for port 1
Port 1 = DB1  Internal
```

rmonstatresetall

Syntax: **`rmonstatresetall`**

Reset all RMON statistics counters for all ports on the embedded Ethernet switch.

The following example shows command output.

```
oam> rmonstatresetall
Statistics counters have been reset for port 0
Port 0 = DB2  Internal
Statistics counters have been reset for port 1
Port 1 = DB1  Internal
Statistics counters have been reset for port 2
Port 2 = 1(ELAN) Back plane
Statistics counters have been reset for port 3
Port 3 = 2(TLAN) Back plane
Statistics counters have been reset for port 4
Port 4 = CE  Top face plate connector for CPPM only
Statistics counters have been reset for port 5
Port 5 = CT  Second from top face plate connector for CPPM only
Statistics counters have been reset for port 6
Port 6 = 1E  Second from bottom face plate connector
```

```
Statistics counters have been reset for port 7
Port 7 = 2T  Bottom face plate connector
Statistics counters have been reset for port 8
Port 8 = MSP  Internal
Statistics counters have been reset for port 9
Port 9 = CSP  Internal
```

rmonstatshow

Syntax: **`rmonstatshow port`**

Display the RMON statistics collected by the embedded Ethernet switch for the specified port.

The following table describes the command parameters.

Table 101: Command parameters

Parameter	Value	Description
port	0–9	Port number

The following example shows command output.

```
oam> rmonstatshow 3
Statistics for port 3:
Port 3 = 2(TLAN) Back plane
Total good frames received = 793
Total good frames transmitted = 23991

Ingress statistics for port 3.
INUNICASTS = 26
INBROADCASTS = 677
INPAUSE = 0
INMUILICASTS = 90
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 68525
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 625
IN127OCTETS = 29
IN255OCTETS = 130
IN511OCTETS = 7
IN1023OCTETS = 2
INMAXOCTETS = 0
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 0

Egress statistics for port 3.
OUTUNICASTS = 332
OUTBROADCASTS = 3436858
OUTPAUSE = 0
OUTMUILICASTS = 322353
OUTFCSERR = 0
OUTOCTETS = 331886433
OUT64OCTETS = 2861144
```

```
OUT127OCTETS = 151412
OUT255OCTETS = 718156
OUT511OCTETS = 27747
OUT1023OCTETS = 1083
OUTMAXOCTETS = 1
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 0
OUTDISCARDS = 0
```

rmonstatshowall

Syntax: **`rmonstatshowall`**

Display the RMON statistics collected by the embedded Ethernet switch for all ports.

The following example shows command output.

```
am> rmonstatshowall
=============================== Port 0
===============================

Statistics for port 0:
Port 0 = DB2  Internal
Total good frames received = 0
Total good frames transmitted = 0
vlanStatPrint: writing data d000 register = 1b address = 1d

Ingress statistics for port 0.
INUNICASTS = 0
INBROADCASTS = 0
INPAUSE = 0
INMUILICASTS = 0
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 0
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 0
IN127OCTETS = 0
IN255OCTETS = 0
IN511OCTETS = 0
IN1023OCTETS = 0
INMAXOCTETS = 0
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 0

Egress statistics for port 0.
OUTUNICASTS = 0
OUTBROADCASTS = 0
OUTPAUSE = 0
OUTMUILICASTS = 0
OUTFCSERR = 0
OUTOCTETS = 0
OUT64OCTETS = 0
```

```
OUT127OCTETS = 0
OUT255OCTETS = 0
OUT511OCTETS = 0
OUT1023OCTETS = 0
OUTMAXOCTETS = 0
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 72563
OUTDISCARDS = 0

=============================== Port 1 ===============================
Statistics for port 1:
Port 1 = DB1  Internal
Total good frames received = 1199
Total good frames transmitted = 8228
vlanStatPrint: writing data d001 register = 1b address = 1d

Ingress statistics for port 1.
INUNICASTS = 1199
INBROADCASTS = 0
INPAUSE = 0
INMUILICASTS = 0
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 76762
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 1198
IN127OCTETS = 1
IN255OCTETS = 0
IN511OCTETS = 0
IN1023OCTETS = 0
INMAXOCTETS = 0
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 0

Egress statistics for port 1.
OUTUNICASTS = 1221
OUTBROADCASTS = 72539
OUTPAUSE = 0
OUTMUILICASTS = 4
OUTFCSERR = 0
OUTOCTETS = 6180668
OUT64OCTETS = 72636
OUT127OCTETS = 7
OUT255OCTETS = 28
OUT511OCTETS = 3
OUT1023OCTETS = 1
OUTMAXOCTETS = 1089
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 0
OUTDISCARDS = 0

=============================== Port 2 ===============================

Statistics for port 2:
Port 2 = 1(ELAN) Back plane
```

```
Total good frames received = 0
Total good frames transmitted = 0
vlanStatPrint: writing data d002 register = 1b address = 1d

Ingress statistics for port 2.
INUNICASTS = 0
INBROADCASTS = 0
INPAUSE = 0
INMUILICASTS = 0
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 0
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 0
IN127OCTETS = 0
IN255OCTETS = 0
IN511OCTETS = 0
IN1023OCTETS = 0
INMAXOCTETS = 0
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 0

Egress statistics for port 2.
OUTUNICASTS = 0
OUTBROADCASTS = 0
OUTPAUSE = 0
OUTMUILICASTS = 0
OUTFCSERR = 0
OUTOCTETS = 0
OUT64OCTETS = 0
OUT127OCTETS = 0
OUT255OCTETS = 0
OUT511OCTETS = 0
OUT1023OCTETS = 0
OUTMAXOCTETS = 0
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 212
OUTDISCARDS = 0

=============================== Port 3 ===============================

Statistics for port 3:
Port 3 = 2(TLAN) Back plane
Total good frames received = 0
Total good frames transmitted = 0
vlanStatPrint: writing data d003 register = 1b address = 1d

Ingress statistics for port 3.
INUNICASTS = 0
INBROADCASTS = 0
INPAUSE = 0
INMUILICASTS = 0
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 0
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 0
IN127OCTETS = 0
```

```
IN255OCTETS = 0
IN511OCTETS = 0
IN1023OCTETS = 0
INMAXOCTETS = 0
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 0

Egress statistics for port 3.
OUTUNICASTS = 0
OUTBROADCASTS = 0
OUTPAUSE = 0
OUTMUILICASTS = 0
OUTFCSERR = 0
OUTOCTETS = 0
OUT64OCTETS = 0
OUT127OCTETS = 0
OUT255OCTETS = 0
OUT511OCTETS = 0
OUT1023OCTETS = 0
OUTMAXOCTETS = 0
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 212
OUTDISCARDS = 0

=============================== Port 4 ===============================

Statistics for port 4:
Port 4 = CE  Top face plate connector for CPPM only
Total good frames received = 0
Total good frames transmitted = 0
vlanStatPrint: writing data d004 register = 1b address = 1d

Ingress statistics for port 4.
INUNICASTS = 0
INBROADCASTS = 0
INPAUSE = 0
INMUILICASTS = 0
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 0
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 0
IN127OCTETS = 0
IN255OCTETS = 0
IN511OCTETS = 0
IN1023OCTETS = 0
INMAXOCTETS = 0
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 0

Egress statistics for port 4.
OUTUNICASTS = 0
OUTBROADCASTS = 0
OUTPAUSE = 0
OUTMUILICASTS = 0
OUTFCSERR = 0
OUTOCTETS = 0
OUT64OCTETS = 0
```

```
OUT127OCTETS = 0
OUT255OCTETS = 0
OUT511OCTETS = 0
OUT1023OCTETS = 0
OUTMAXOCTETS = 0
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 1935988
OUTDISCARDS = 0

=============================== Port 5 ===============================

Statistics for port 5:
Port 5 = CT  Second from top face plate connector for CPPM only
Total good frames received = 0
Total good frames transmitted = 0
vlanStatPrint: writing data d005 register = 1b address = 1d

Ingress statistics for port 5.
INUNICASTS = 0
INBROADCASTS = 0
INPAUSE = 0
INMUILICASTS = 0
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 0
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 0
IN127OCTETS = 0
IN255OCTETS = 0
IN511OCTETS = 0
IN1023OCTETS = 0
INMAXOCTETS = 0
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 0

Egress statistics for port 5.
OUTUNICASTS = 0
OUTBROADCASTS = 0
OUTPAUSE = 0
OUTMUILICASTS = 0
OUTFCSERR = 0
OUTOCTETS = 0
OUT64OCTETS = 0
OUT127OCTETS = 0
OUT255OCTETS = 0
OUT511OCTETS = 0
OUT1023OCTETS = 0
OUTMAXOCTETS = 0
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 72566
OUTDISCARDS = 0

=============================== Port 6 ===============================

Statistics for port 6:
```

```
Port 6 = 1E  Second from bottom face plate connector
Total good frames received = 44008
Total good frames transmitted = 41323
vlanStatPrint: writing data d006 register = 1b address = 1d

Ingress statistics for port 6.
INUNICASTS = 1319305
INBROADCASTS = 1878703
INPAUSE = 0
INMUILICASTS = 57266
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 301023763
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 1706931
IN127OCTETS = 959311
IN255OCTETS = 509510
IN511OCTETS = 67421
IN1023OCTETS = 11984
INMAXOCTETS = 117
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 110962

Egress statistics for port 6.
OUTUNICASTS = 1220952
OUTBROADCASTS = 19
OUTPAUSE = 0
OUTMUILICASTS = 0
OUTFCSERR = 0
OUTOCTETS = 82880029
OUT64OCTETS = 386212
OUT127OCTETS = 834572
OUT255OCTETS = 163
OUT511OCTETS = 14
OUT1023OCTETS = 9
OUTMAXOCTETS = 1
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 0
OUTDISCARDS = 0

=============================== Port 7 ===============================

Statistics for port 7:
Port 7 = 2T  Bottom face plate connector
Total good frames received = 1162
Total good frames transmitted = 5868
vlanStatPrint: writing data d007 register = 1b address = 1d

Ingress statistics for port 7.
INUNICASTS = 0
INBROADCASTS = 66698
INPAUSE = 0
INMUILICASTS = 0
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 4268672
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 66698
```

```
IN127OCTETS = 0
IN255OCTETS = 0
IN511OCTETS = 0
IN1023OCTETS = 0
INMAXOCTETS = 0
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 0

Egress statistics for port 7.
OUTUNICASTS = 23
OUTBROADCASTS = 5841
OUTPAUSE = 0
OUTMUILICASTS = 4
OUTFCSERR = 0
OUTOCTETS = 380300
OUT64OCTETS = 5832
OUT127OCTETS = 6
OUT255OCTETS = 28
OUT511OCTETS = 1
OUT1023OCTETS = 0
OUTMAXOCTETS = 1
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 0
OUTDISCARDS = 0

=============================== Port 8 ===============================

Statistics for port 8:
Port 8 = MSP  Internal
Total good frames received = 6870
Total good frames transmitted = 2558
vlanStatPrint: writing data d008 register = 1b address = 1d

Ingress statistics for port 8.
INUNICASTS = 1198
INBROADCASTS = 5672
INPAUSE = 0
INMUILICASTS = 0
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 1894704
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 5778
IN127OCTETS = 1
IN255OCTETS = 0
IN511OCTETS = 2
IN1023OCTETS = 1
INMAXOCTETS = 1088
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 0

Egress statistics for port 8.
OUTUNICASTS = 1222
OUTBROADCASTS = 66868
OUTPAUSE = 0
OUTMUILICASTS = 4
OUTFCSERR = 0
OUTOCTETS = 4362790
```

```
OUT64OCTETS = 68057
OUT127OCTETS = 7
OUT255OCTETS = 28
OUT511OCTETS = 1
OUT1023OCTETS = 0
OUTMAXOCTETS = 1
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 0
OUTDISCARDS = 0

=============================== Port 9 ===============================

Statistics for port 9:
Port 9 = CSP  Internal
Total good frames received = 42205
Total good frames transmitted = 64233
vlanStatPrint: writing data d009 register = 1b address = 1d

Ingress statistics for port 9.
INUNICASTS = 1221850
INBROADCASTS = 4
INPAUSE = 0
INMUILICASTS = 0
INFCSERR = 0
ALIGNERR = 0
INGOODOCTETS = 82939549
INBADOCTETS = 0
UNDERSIZE = 0
FRAGMENTS = 0
IN64OCTETS = 387027
IN127OCTETS = 834632
IN255OCTETS = 168
IN511OCTETS = 17
IN1023OCTETS = 9
INMAXOCTETS = 1
JABBER = 0
OVERSIZE = 0
INDISCARDS = 0
INFILTERED = 808

Egress statistics for port 9.
OUTUNICASTS = 1208407
OUTBROADCASTS = 1878752
OUTPAUSE = 0
OUTMUILICASTS = 57266
OUTFCSERR = 0
OUTOCTETS = 284868507
OUT64OCTETS = 1661926
OUT127OCTETS = 913202
OUT255OCTETS = 509499
OUT511OCTETS = 51951
OUT1023OCTETS = 7829
OUTMAXOCTETS = 18
COLLISIONS = 0
LATE = 0
EXECESSIVE = 0
multiple = 0
SINGLE = 0
DEFERRED = 0
OUTFILTERED = 0
OUTDISCARDS = 0
```

Removing the CSP to make MGC boot from Gold Image

Steps to Put the Gold Image

- FTP the file “mainos.st.Z” to “/u” Directory
- Execute the command copyImageToFlash "mainos.st.Z", 4

Commands to remove the CSP and make it bootable from Gold Image

- Execute the command diskFormat all
- Execute the command MGCIPClear

After one reboot, MGC boots with Gold Image (like brand new card from Factory).

sshKeyShow

Syntax: **`sshKeyShow`**

Display the SSH key.

The following example shows command output.

```
oam> sshKeyShow
justinsnewhost (47.11.214.83)
Active SSH key fingerprint: D4:75:B7:03:6E:56:12:61:7D:8B:D7:78:F3:63:73:E1
```

swversionshow

Syntax: **`swversionshow`**

Display the software version.

The following example shows command output.

```
oam> swversionshow
BOOTCODE:                MGCBad12
CSP:                     MGCCAD04
MSP:                     MGCMAA04
FPGA:                    MGCFAA08
APPLICATION:             MGCAAA02
DB1:                     DSP2AA05
DB2:                     NONE
```

testalarm

Syntax: **`testalarm`**

Send an SNMP trap.

The following example shows command output.

```
oam> testalarm

setting up alarm structure

Calling snmpTrap

SNMP traps are successfully sent

oam> version

VxWorks (for Chagall) version 5.5.1.

Kernel: WIND version 2.6.

Made on Feb  2 2007, 03:42:05.

Boot line:
ata=0,0(0,0):/p/mainos.sys e=47.11.214.83:ffffff00 g=47.11.214.1 f=0x22
tn=justinsnewhost s=/p/startup1 o=eln
```

vgwcardshow

Syntax: **`vgwcardshow cardnum`**

Display all channel information for the specified card.

The following table describes the command parameters.

Table 102: Command parameters

Parameter	Value	Description
cardnum	–	Card number

The following example shows command output.

```
oam> vgwcardshow 11
VGW Service is: Enabled

Chan ChanState  DspMode   Codec      Tn     Reg AirTime        rxTsap
txTsap        RFC 2833        SRTP
---- ---------- --------- ---------- ------ --- ------- --------------------
-------------------- ------------ ---------------
32 Idle       Closed    n/a        0x142c yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
```

```
33 Idle       Closed    n/a        0x142d yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
34 Idle       Closed    n/a        0x142e yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
35 Idle       Closed    n/a        0x142f yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
36 Idle       Closed    n/a        0x146c yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
37 Idle       Closed    n/a        0x146d yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
38 Idle       Closed    n/a        0x146e yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
39 Idle       Closed    n/a        0x146f yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
40 Idle       Closed    n/a        0x14ac yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
41 Idle       Closed    n/a        0x14ad yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
42 Idle       Closed    n/a        0x14ae yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
43 Idle       Closed    n/a        0x14af yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
44 Idle       Closed    n/a        0x14ec yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
45 Idle       Closed    n/a        0x14ed yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
46 Idle       Closed    n/a        0x14ee yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
47 Idle       Closed    n/a        0x14ef yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
48 Idle       Closed    n/a        0x152c yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
49 Idle       Closed    n/a        0x152d yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
50 Idle       Closed    n/a        0x152e yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
51 Idle       Closed    n/a        0x152f yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
52 Idle       Closed    n/a        0x156c yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
53 Idle       Closed    n/a        0x156d yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
54 Idle       Closed    n/a        0x156e yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
55 Idle       Closed    n/a        0x156f yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
56 Idle       Closed    n/a        0x15ac yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
57 Idle       Closed    n/a        0x15ad yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
58 Idle       Closed    n/a        0x15ae yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
59 Idle       Closed    n/a        0x15af yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
60 Idle       Closed    n/a        0x15ec yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
61 Idle       Closed    n/a        0x15ed yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
62 Idle       Closed    n/a        0x15ee yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
63 Idle       Closed    n/a        0x15ef yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
```

vgwshow

Syntax: **`vgwshow`**

Show information about busy channels.

The following example shows command output.

```
oam> vgwshow
VGW Service is: Enabled

Chan ChanState  DspMode   Codec      Tn     Reg AirTime        rxTsap
txTsap         RFC 2833        SRTP
---- ---------- --------- ---------- ------ --- ------- --------------------
-------------------- ------------- ------------
No channel is used.
```

vgwshowall

Syntax: **`vgwshowall`**

Display information about all channels.

The following example shows command output.

```
oam> vgwshowall
VGW Service is: Enabled

Chan ChanState  DspMode   Codec      Tn     Reg AirTime        rxTsap
txTsap        RFC 2833         SRTP
---- ---------- --------- ---------- ------ --- ------- --------------------
-------------------- ------------ ---------------
32 Idle       Closed    n/a        0x142c yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
33 Idle       Closed    n/a        0x142d yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
34 Idle       Closed    n/a        0x142e yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
35 Idle       Closed    n/a        0x142f yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
36 Idle       Closed    n/a        0x146c yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
37 Idle       Closed    n/a        0x146d yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
38 Idle       Closed    n/a        0x146e yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
39 Idle       Closed    n/a        0x146f yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
40 Idle       Closed    n/a        0x14ac yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
41 Idle       Closed    n/a        0x14ad yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
42 Idle       Closed    n/a        0x14ae yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
43 Idle       Closed    n/a        0x14af yes       0         0.0.0.0:0000
```

```
0.0.0.0:0000 Rx n/a Tx n/a Enabled
44 Idle       Closed    n/a        0x14ec yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
45 Idle       Closed    n/a        0x14ed yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
46 Idle       Closed    n/a        0x14ee yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
47 Idle       Closed    n/a        0x14ef yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
48 Idle       Closed    n/a        0x152c yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
49 Idle       Closed    n/a        0x152d yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
50 Idle       Closed    n/a        0x152e yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
51 Idle       Closed    n/a        0x152f yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
52 Idle       Closed    n/a        0x156c yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
53 Idle       Closed    n/a        0x156d yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
54 Idle       Closed    n/a        0x156e yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
55 Idle       Closed    n/a        0x156f yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
56 Idle       Closed    n/a        0x15ac yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
57 Idle       Closed    n/a        0x15ad yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
58 Idle       Closed    n/a        0x15ae yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
59 Idle       Closed    n/a        0x15af yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
60 Idle       Closed    n/a        0x15ec yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
61 Idle       Closed    n/a        0x15ed yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
62 Idle       Closed    n/a        0x15ee yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
63 Idle       Closed    n/a        0x15ef yes       0         0.0.0.0:0000
0.0.0.0:0000 Rx n/a Tx n/a Enabled
```

Chapter 8: Call Server commands

This section lists commands you can enter from the Call Server overlays.

LD 32

Access the following commands in LD 32.

ECNT CARD

Syntax: **`ECNT CARD <card TN> <customer>`**

Print the number of registered and unregistered IP Phones for the specified card. If you specify the customer, the count is specific to that customer. Otherwise, the count is across all customers. If you enter no parameters, the count prints for all zones.

The following table describes the command parameters.

Table 103: Command parameters

Parameter	Value	Description
card TN	l s c u	Terminal Number for the card. Enter a partial TN (for example, l or l s) which then prints the count for that parameter. You cannot specify a customer in this case. On the Avaya Communication Server 1000 (Avaya CS 1000) Option 11C or CSE 1000 systems, enter the card virtual slot number instead of the l s c format.
customer	–	Optional. The card TN is mandatory.

The following example shows command output.

```
.ecnt card 81
<< Card 81 >>
Number of Registered Ethersets: 5
Number of Unregistered Ethersets: 27

.ecnt card

<< Card 61 >>
```

```
Number of Registered Ethersets: 7
Number of Unregistered Ethersets: 9

<< Card 62 >>
Number of Registered Ethersets: 0
Number of Unregistered Ethersets: 5

<< Card 64 >>
Number of Registered Ethersets: 0
Number of Unregistered Ethersets: 23
.
```

ECNT ZONE

Syntax: **`ECNT ZONE <zoneNum> <customer>`**

Prints the number of registered and unregistered IP Phones for the specified zone. If you specify the customer number, the count is specific to that customer (a zone must be specified to enter a customer). Otherwise, the count is across all customers. If you enter no parameters, the count prints for all zones.

The following table describes the command parameters.

Table 104: Command parameters

Parameter	Value	Description
zone	–	Zone
customer	0 to maximum customer number	Customer number

The following example shows command output.

```
.ecnt zone 0 0
<< Zone 0 Customer 0 >>
Number of Registered Ethersets: 4
Number of Unregistered Ethersets: 17
```

ENLC/DISC/DISI

Syntax: **`ENLC <card TN> DISC <card TN> DISI <card TN>`**

The **`ENLC`** and **`DISC`** commands enable or disable gateway channels across an entire Voice Media Gateway Card (VGMC).

These commands are also useful to troubleshoot card lockup problems. This command is sent to the VGMC processor. You can determine the state of the card processor based on the response.

The **DISI** command disables the card when all channels are idle. Use this command to remove a card from service with minimal impact to users.

Note:

When the entire card is disabled, the red LED on the faceplate is on. One enabled channel on the card causes the red LED to turn off.

The following table describes the command parameters.

Table 105: Command parameters

Parameter	Value	Description
card TN	l s c u	Terminal Number for the card. On the CS 1000 Option 11C or CSE 1000 systems, enter the card virtual slot number instead of the l s c format.

The following example shows command output.

```
.enlc 2

XMI001 2  EXUT

XMI002 2  EXUT

.stat 2

00 = UNIT 00 = IDLE            (TRK)(TIE  )
01 = UNIT 01 = IDLE            (TRK)(TIE  )
...one line for each channel...
22 = UNIT 22 = IDLE            (TRK)(TIE  )
23 = UNIT 23 = IDLE            (TRK)(TIE  )

.disc 2

.stat 2
00 = UNIT 00 = DSBL            (TRK)(TIE  )
01 = UNIT 01 = DSBL            (TRK)(TIE  )
...one line for each channel...
23 = UNIT 23 = DSBL            (TRK)(TIE  )
```

ENLU/DISU

Syntax: **ENLU <channel TN> DISU <channel TN>**

Enables or disables the specified unit on the VGMC. Use this command to troubleshoot problems with gateway calls. You can force a test call to use a specific set of channels by disabling the others.

The following table describes the command parameters.

Table 106: Command parameters

Parameter	Value	Description
card TN	l s c u	Terminal Number of the gateway channel for the card

The following example shows command output.

```
.enlu 2 3

.stat 2 3
IDLE

.disu 2 3

.stat 2 3
DSBL
```

IDC

Syntax: **`IDC <card TN>`**

Print information about the VGMC.

This command sends a query to the card XA8051 processor. Use this command to troubleshoot card lockup problems. Based on the response or lack of response, you can determine the state of the card.

The following table describes the command parameters.

Table 107: Command parameters

Parameter	Value	Description
card TN	l s c	Terminal Number of the card

The following example shows command output.

```
.idc 2
=> NTVQ55AA R06 NNTMET08DB85 200047
```

IDU

Syntax: **`IDU <phone TN>`**

Print the telephone identification information. Use this command to determine the VGMC or Signaling Server to which an IP Phone is currently registered.

You can also use this command to debug card lockup problems. A response indicates end-to-end connectivity between the Call Server and IP Phone and that the VGMC or Signaling Server can pass messages back and forth between them.

The following table describes the command parameters.

Table 108: Command parameters

Parameter	Value	Description
phone TN	l s c u	Terminal Number of the IP Phone

The following example shows command output.

```
>ld 32
NPR000
.idu 61 3

I2004 TN    061 0 00 03
TN ID CODE: i2004
NT CODE: NT2K00GI
COLOR CODE: 66
RLS CODE: 0
SER NUM: 760658
SET IP ADR: 010 .001 .001 .006
TPS IP ADR: 047 .011 .214 .052
```

STAT

Syntax: **STAT <card or unit TN>**

This command provides the status of one or all units on a specified VGMC or of a particular VTN.

The following table describes the command parameters.

Table 109: Command parameters

Parameter	Value	Description
card or unit TN	l s c l s c u	Terminal Number

The following example shows output for the VGMC or units.

```
.stat 2 0
IDLE
.stat 2
00 = UNIT 00 = IDLE            (TRK)(TIE  )
01 = UNIT 01 = IDLE            (TRK)(TIE  )
...one line for each unit...
21 = UNIT 21 = BUSY
22 = UNIT 22 = UNEQ
23 = UNIT 23 = UNEQ
```

Example output for IP Phone VTNs:

```
.stat 61 1
IDLE REGISTERED
.stat 61 0
UNEQ
.stat 61 3
IDLE UNREGISTERED
```

LD 80

Access the following commands in LD 80.

TRAC/TRAK

Syntax: **`TRAC <TN> TRAK <TN>`**

Trace calls associated with the TN. Use this command to determine which gateway channel an IP Phone is connected to or which IP Phone a gateway channel is connected to. Use TRAC on Large Systems and TRAK on Small Systems.

The following table describes the command parameters.

Table 110: Command parameters

Parameter	Value	Description
TN	l s c u	Terminal Number

The following example shows command output.

```
.trak 2 0    (track which sets are connected to the gateway channel with TN 2 0)

ACTIVE  TN 002 0 00 00
ORIG  061 0 00 00  0  SCR MARP  0  1111  I2004
TERM  001 0 00 00  0  SCR MARP  0  1234  2616
DIAL DN 1234
MAIN_PM  ESTD
TALKSLOT  ORIG  8   TERM  10
EES_DATA:
NONE
QUEU  NONE
CALL ID 0 81

.trak 61 0 (track the physical TN being used by the i2004 with TN 61 0)

TN 061 0 00 00
KEY 0  SCR MARP ACTIVE  TN 061 0 00 00
PHYSICAL  TN 002 0 00 00
ORIG  061 0 00 00  0  SCR MARP  0  1111  I2004
TERM  001 0 00 00  0  SCR MARP  0  1234  2616
DIAL DN 1234
MAIN_PM  ESTD
```

```
TALKSLOT  ORIG  8   TERM  10
EES_DATA:
NONE
QUEU  NONE
CALL ID 0 81

KEY 1  NUL  IDLE
KEY 2  NUL  IDLE
KEY 3  NUL  IDLE
KEY 4  NUL  IDLE
KEY 5  NUL  IDLE
KEY 6  NUL  IDLE
KEY 7  NUL  IDLE
KEY 8  NUL  IDLE
KEY 9  NUL  IDLE
KEY 10 NUL  IDLE
KEY 11 NUL  IDLE
KEY 12 NUL  IDLE
KEY 13 NUL  IDLE
KEY 14 NUL  IDLE
KEY 15 NUL  IDLE
KEY 16 NUL  IDLE
KEY 17 TRN  IDLE
KEY 18 AO6  IDLE
KEY 19 CFW  IDLE
KEY 20 RGA  IDLE
KEY 21 PRK  IDLE
KEY 22 RNP  IDLE
KEY 23 NUL  IDLE
KEY 24 PRS  IDLE
KEY 25 CHG  IDLE
KEY 26 CPN  IDLE
KEY 27 NUL  IDLE
KEY 28 NUL  IDLE
KEY 29 NUL  IDLE
KEY 30 NUL  IDLE
KEY 31 NUL  IDLE

.trak 77 25 (track the virtual TN used with TN 77 25)

VTN 077 0 00 25
KEY 0  MCR      ACTIVE  VTN 077 0 00 25
ORIG   VTN 077 0 00 25  KEY 0  MCR       CUST 0  DN 3624  TYPE
2004P2
SIGNALLING ENCRYPTION: USEC
MEDIA ENDPOINT IP: 192.168.35.200  PORT: 5200
TERM   VTN 077 0 00 26  KEY 0  MCR       CUST 0  DN 3625  TYPE 1140
SIGNALLING ENCRYPTION: DTLS
MEDIA ENDPOINT IP: 192.168.35.201  PORT: 5200
TDTN    0     SLOT    1   PTY SLOT  1
DIAL DN NONE
MAIN_PM  READY
TALKSLOT  NONE
EES_DATA:
NONE
QUEU  DIAL
CALL ID 727 900
```

TRIP

Syntax: **`TRIP <IP address>`**

Trace an IP address.

The following example shows the output for an IP Phone with IP address 47.166.135.53 in IDLE mode.

```
>ld 80
TRA000
.trip 47.166.135.53

VTN 096 0 03 07
KEY 0  SCR MARP  IDLE
KEY 1  NUL  IDLE
KEY 2  MSB  IDLE
KEY 3  NUL  IDLE
KEY 4  NUL  IDLE
KEY 5  HNDO  IDLE
KEY 6  NUL  IDLE
KEY 7  NUL  IDLE
KEY 8  NUL  IDLE
KEY 9  NUL  IDLE
KEY 10 NUL  IDLE
KEY 11 ADL  IDLE
KEY 12 NUL  IDLE
KEY 13 NUL  IDLE
KEY 14 NUL  IDLE
KEY 15 NUL  IDLE
KEY 16 MWK  IDLE
KEY 17 TRN  IDLE
KEY 18 AO6  IDLE
KEY 19 CFW  IDLE
KEY 20 RGA  IDLE
KEY 21 PRK  IDLE
KEY 22 RNP  IDLE
KEY 23 NUL  IDLE
KEY 24 PRS  IDLE
KEY 25 CHG  IDLE
KEY 26 CPN  IDLE
KEY 27 NUL  IDLE
KEY 28 ADL  IDLE
KEY 29 NUL  IDLE
KEY 30 NUL  IDLE
KEY 31 NUL  IDLE
KEY 32 ADL  IDLE
KEY 33 ADL  IDLE
KEY 34 ADL  IDLE
KEY 35 ADL  IDLE
KEY 36 ADL  IDLE
KEY 37 ADL  IDLE
KEY 38 ADL  IDLE
KEY 39 ADL  IDLE
KEY 40 ADL  IDLE
KEY 41 ADL  IDLE
KEY 42 ADL  IDLE
KEY 43 ADL  IDLE
KEY 44 ADL  IDLE
KEY 45 ADL  IDLE
KEY 46 ADL  IDLE
KEY 47 ADL  IDLE
KEY 48 ADL  IDLE
KEY 49 ADL  IDLE
KEY 50 ADL  IDLE
KEY 51 ADL  IDLE
KEY 52 ADL  IDLE
KEY 53 ADL  IDLE
KEY 54 ADL  IDLE
KEY 55 ADL  IDLE
```

The following example shows the output for an IP Phone with IP address 47.166.135.53 in off-hook with dial tone.

```
.trip 47.166.135.53

VTN 096 0 03 07
KEY 0  SCR MARP ACTIVE   VTN 096 0 03 07

ORIG   VTN 096 0 03 07  KEY 0  SCR MARP  CUST 0  DN 3614  TYPE 1230
MEDIA ENDPOINT IP: 47.166.135.53  PORT: 5200
TERM  NONE
TDTN    44     SLOT    0   1   PTY SLOT  0   1
DIAL DN NONE
MAIN_PM  READY
TALKSLOT  NONE
EES_DATA:
NONE
QUEU  DIAL
CALL ID 570 19942

KEY 1  NUL  IDLE
KEY 2  MSB  IDLE
KEY 3  NUL  IDLE
KEY 4  NUL  IDLE
KEY 5  HNDO  IDLE
KEY 6  NUL  IDLE
KEY 7  NUL  IDLE
KEY 8  NUL  IDLE
KEY 9  NUL  IDLE
KEY 10 NUL  IDLE
KEY 11 ADL  IDLE
KEY 12 NUL  IDLE
KEY 13 NUL  IDLE
KEY 14 NUL  IDLE
KEY 15 NUL  IDLE
KEY 16 MWK  IDLE
KEY 17 TRN  IDLE
KEY 18 AO6  IDLE
KEY 19 CFW  IDLE
KEY 20 RGA  IDLE
KEY 21 PRK  IDLE
KEY 22 RNP  IDLE
KEY 23 NUL  IDLE
KEY 24 PRS  IDLE
KEY 25 CHG  IDLE
KEY 26 CPN  IDLE
KEY 27 NUL  IDLE
KEY 28 ADL  IDLE
KEY 29 NUL  IDLE
KEY 30 NUL  IDLE
KEY 31 NUL  IDLE
KEY 32 ADL  IDLE
KEY 33 ADL  IDLE
KEY 34 ADL  IDLE
KEY 35 ADL  IDLE
KEY 36 ADL  IDLE
KEY 37 ADL  IDLE
KEY 38 ADL  IDLE
KEY 39 ADL  IDLE
KEY 40 ADL  IDLE
KEY 41 ADL  IDLE
KEY 42 ADL  IDLE
KEY 43 ADL  IDLE
KEY 44 ADL  IDLE
KEY 45 ADL  IDLE
KEY 46 ADL  IDLE
KEY 47 ADL  IDLE
KEY 48 ADL  IDLE
KEY 49 ADL  IDLE
KEY 50 ADL  IDLE
KEY 51 ADL  IDLE
KEY 52 ADL  IDLE
KEY 53 ADL  IDLE
KEY 54 ADL  IDLE
KEY 55 ADL  IDLE
```

The following example shows the output for an IP Phone with IP address 47.166.135.53 with call established.

```
.trip 47.166.135.53

VTN 096 0 03 07
KEY 0  SCR MARP ACTIVE  VTN 096 0 03 07

ORIG   VTN 096 0 03 07  KEY 0  SCR MARP  CUST 0  DN 3614  TYPE 1230
MEDIA ENDPOINT IP: 47.166.135.53  PORT: 5200
TERM   VTN 096 0 01 25  KEY 0  SCR MARP  CUST 0  DN 3616  TYPE 1230
MEDIA ENDPOINT IP: 47.166.129.191  PORT: 5200
MEDIA PROFILE: CODEC G.711 A-LAW  PAYLOAD 20 ms  VAD OFF
DIAL DN 3616
MAIN_PM  ESTD
TALKSLOT  ORIG  10   TERM  42
EES_DATA:
NONE
QUEU  NONE
CALL ID 570 19941

KEY 1  NUL  IDLE
KEY 2  MSB  IDLE
KEY 3  NUL  IDLE
KEY 4  NUL  IDLE
KEY 5  HNDO  IDLE
KEY 6  NUL  IDLE
KEY 7  NUL  IDLE
KEY 8  NUL  IDLE
KEY 9  NUL  IDLE
KEY 10 NUL  IDLE
KEY 11 ADL  IDLE
KEY 12 NUL  IDLE
KEY 13 NUL  IDLE
KEY 14 NUL  IDLE
KEY 15 NUL  IDLE
KEY 16 MWK  IDLE
KEY 17 TRN  IDLE
KEY 18 AO6  IDLE
KEY 19 CFW  IDLE
KEY 20 RGA  IDLE
KEY 21 PRK  IDLE
KEY 22 RNP  IDLE
KEY 23 NUL  IDLE
KEY 24 PRS  IDLE
KEY 25 CHG  IDLE
KEY 26 CPN  IDLE
KEY 27 NUL  IDLE
KEY 28 ADL  IDLE
KEY 29 NUL  IDLE
KEY 30 NUL  IDLE
KEY 31 NUL  IDLE
KEY 32 ADL  IDLE
KEY 33 ADL  IDLE
KEY 34 ADL  IDLE
KEY 35 ADL  IDLE
KEY 36 ADL  IDLE
KEY 37 ADL  IDLE
KEY 38 ADL  IDLE
KEY 39 ADL  IDLE
KEY 40 ADL  IDLE
KEY 41 ADL  IDLE
KEY 42 ADL  IDLE
KEY 43 ADL  IDLE
KEY 44 ADL  IDLE
KEY 45 ADL  IDLE
KEY 46 ADL  IDLE
KEY 47 ADL  IDLE
KEY 48 ADL  IDLE
KEY 49 ADL  IDLE
KEY 50 ADL  IDLE
KEY 51 ADL  IDLE
KEY 52 ADL  IDLE
KEY 53 ADL  IDLE
KEY 54 ADL  IDLE
KEY 55 ADL  IDLE
```

LD 117

Access the following commands in LD 117.

STIP

The STIP command has seven variations that print IP Phone–related IP information that requires modification:

- **`STIP TN <TN>`** Display the Resource Locator Module information for the specified TN or group of TNs.
- **`STIP TYPE <type>`** Display the Resource Locator Module information for the specified TN type.
- **`STIP ZONE <zone>`** Display the Resource Locator Module information for the specified zone.
- **`STIP NODE <node>`** Display the Resource Locator Module information for the specified node.
- **`STIP HOSTIP <host IP address>`** Display the Resource Locator Module information corresponding to the specified host IP.
- **`STIP TERMIP <IP address>`** Display the Resource Locator Module information corresponding to the specified Internet Telephone IP. The <IP address> parameter is the Internet Telephone public IP address for the signaling.
- **`STIP DTLS <Node><Connection Type><DTLS_Capability>`** Display information about IP Phones filtered by signaling encryption related values, namely the type of connection the phone is currently using and the phone’s capability of making DTLS connections.

<Node> is the node ID of the node to which the subject phones belong or ALL to omit the node-based filtering.

<Connection Type> options are:

- INSECURE: prints the phones which are not using signalling encryption
- SECURE: prints the phones which are using either USec or DTLS
- DTLS: prints only the phones which are using DTLS
- USEC: prints only the phones which are using UNIStim Security
- ALL: prints all types of phones

<DTLS_Capability> options are:

- YES: prints the DTLS-capable phones
- NO: prints the DTLS-incapable phones
- ALL: prints both types of phones

In the printed output for this command, the public IP address and port for the signaling appear in the SIGNALING IP column. For NAT telephones, the private IP address for the signaling appears below it in parentheses.

The following example shows command output.

```
=> stip tn 61 0

TN         type  HWID                STATUS    HOSTIP         SIGNALING IP
CODEC           BDWITH
61  0 0  0  i2004 MAC:               REG      47.11.216.49    30.1.1.10
-               0
1800603876c79d6600
G711u noVAD     1904

G711a noVAD     1904

G729AB          470

=> stip tn 61 1

TN         type  HWID                STATUS    HOSTIP         SIGNALING IP
CODEC           BDWITH
61  0 0  1  i2004 MAC:               REG      47.11.216.50    30.1.1.100:1250
-               0
180060387638e06600                              (192.168.1.13)
G711u noVAD     1904

G711u noVAD     1904

=> stip termip 30.1.1.100

TN         type  HWID                STATUS    HOSTIP         Signaling IP
CODEC           BDWITH
61  0 0  1  i2004 MAC:               REG      47.11.216.50    30.1.1.100:1250
-               0
180060387638e06600                              (192.168.1.13)
G711u noVAD     1904

G711a noVAD     1904
61  0 0  2  i2004 MAC:               REG      47.11.216.50    30.1.1.100:1248
-               0
```

```
180060387638ee6600                            (192.168.1.12)        G711u noVAD
1904

G711a noVAD     1904

=> STIP DTLS 4444 SECURE YES
TN          type     HWID                  STATUS    HOSTIP          SIGNALING IP
61  0 0  1  2004P2   MAC:                REG      192.168.30.55   192.168.35.210:5000
18000ae4755af26602    DTLS SUPPORTED: YES        ENCRYPTION: DTLS
CODEC(BW):   G711u noVAD(1904), G711a noVAD(1904)
MODEL:      IP Phone 2004 Phase 2          FWID:   2   FWVer:  DBL   PEC:    NTDU92AA
```

PRT

The PRT command has two variations that print IP Phone-related IP information that requires modification:

- **`PRT IPDN <IP address>`** Print DNs associated with an IP Phone public IP address for signaling.
- **`PRT DNIP`** Print IP addresses associated with a DN.

The following example shows the output for the PRT IPDN command (the public IP address and port are printed followed by the private IP address and port in parentheses).

```
=> prt ipdn 30.1.1.100

Signaling IP 30.1.1.100:1248 (192.168.1.12)
Media IP 30.1.1.100:1246 (192.168.1.12:5200)
CUST 00  TN 061-02  TYPE i2002  ZONE 000  REG
Key      DN       CPND Name
---------------------------------------------
00 SCR   2013     I2002_Cust_0
01 SCR   2001     I2002_Cust_0

Signaling IP 30.1.1.100:1250 (192.168.1.13)
Media IP 30.1.1.100:1252 (192.168.1.12:5200)
CUST 00  TN 061-01  TYPE i2004  ZONE 000  REG
Key      DN       CPND Name
---------------------------------------------
01 SCR   2041
05 SCR   2042

=> prt ipdn 30.1.1.10

Signaling IP 30.1.1.10:5000
Media IP 30.1.1.10:5200
CUST 00  TN 061-00  TYPE i2004  ZONE 000  REG
Key      DN       CPND Name
---------------------------------------------
01 SCR   8001
```

The following example shows the output for the PRT DNIP command (in the IP Address column, the public IP address and port are printed followed by the private IP address and port in parentheses).

```
=> prt dnip 8001

CUST 00  DN 8001
```

```
TN            Type       Key     Signaling IP Address  Media IP Address   Zone  Status
------------------------------------------------------------------------------------
---------
061-00        i2004      01 SCR  30.1.1.10:5000        30.1.1.10:5200      000   REG

=> prt dnip 2041

CUST 00  DN 2041
TN            Type       Key     Signaling IP Address  Media IP Address   Zone  Status
------------------------------------------------------------------------------------
----------
061-01        i2004      01 SCR  30.1.1.100:1250       30.1.1.100:1252     000
REG                                  (192.168.1.13)        (192.168.1.13:5200)
```

STAT IP

The STAT IP command has six variations that print IP-Phone related IP information that requires modification:

- **STAT IP TN <TN>** Print the Resource Locator Module information for the specified TN or group of TNs.
- **STAT IP TYPE <type>** Print the Resource Locator Module information for the specified TN type.
- **STAT IP ZONE <zone>** Print the Resource Locator Module information for the specified zone.
- **STAT IP NODE <node>** Print the Resource Locator Module information for the specified node.
- **STAT IP HOSTIP <host IP address>** Print the Resource Locator Module information that corresponds to the specified host IP address.
- **STAT IP TERMIP <IP address>** Print the Resource Locator Module information that corresponds to the specified IP Phone public IP address for signaling.

In the printed output for this command, the public IP address and port for the signaling appear in the SIGNALING IP column. For NAT telephones, the private IP address for the signaling appears below it in parentheses.

The following example shows command output.

```
=> stat ip type i2004

TN         type  HWID                STATUS    HOSTIP         SIGNALING IP
CODEC           BDWITH
61  0 0  0  i2004 MAC:               REG      47.11.216.49    30.1.1.10:5000
-               0
1800603876c79d6600                                                G711u noVAD    1904
G711a noVAD     1904
G729AB          470
61  0 0  1  i2004 MAC:               REG      47.11.216.50    30.1.1.100:1250
-               0
180060387638e06600                           (192.168.1.13)         G711u noVAD
```

```
1904
G711a noVAD     1904
```

PDT commands

You can run the PDT commands at the PDT shell on the Call Server. You may need to load the symbol table (pdt> symload) to gain access to these commands.

rudpShow

Syntax: **`rudpShow`**

Display information about the RUDP connections currently active on the Call Server.

The following example shows command output.

```
pdt> rudpShow

+----------+----------+--------+----+-----+----------+----------+
| Port ID  |  Src IP  |Src Port| FD | Task|  Data 1  |  Data 2  |
+----------+----------+--------+----+-----+----------+----------+
|537400104 |0xc0a8010a|15000   |28  |13312|0         |0         |
+----------+----------+--------+----+-----+----------+----------+
+----------+----------+--------+---------------+----------+----------+--------+
|Connect ID|  Dst IP  |Dst Port|    Status     | Msg rcv  | Msg sent | Retries|
+----------+----------+--------+---------------+----------+----------+--------+
|537516520 |0xc0a8010e|15000   |ESTABLISHED <->|20596     |1057753   |0       |
+----------+----------+--------+---------------+----------+----------+--------+

value = 0 = 0x0
```

rlmShow

Syntax: **`rlmShow TN`**

Display information from the Resource Locator Module (RLM) about an administered VGMC gateway channel and Internet terminal device.

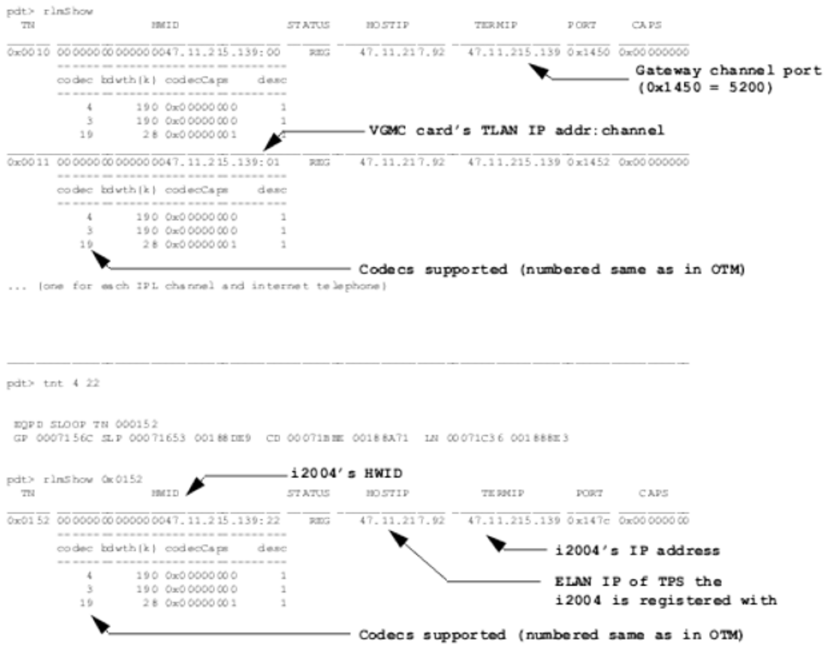
Use this command to check that all gateway channels and IP Phones associated with a VGMC node display the same list of codecs. If the same codec lists do not appear, it is likely that the Card Properties was not downloaded from EM to all cards in that node. For more information about this issue, see Cannot make calls with particular zone and codec configurations on page 41.

The following table describes the command parameters.

Table 111: Command parameters

Parameter	Value	Description
TN	NxNNNN	Optional. Terminal Number for the device in hexadecimal format. If you do not enter this parameter, the data for all devices prints.

The following example shows command output.



```
pdt> rlmShow
  TN                  HWID                STATUS     HOSTIP        TERMIP        PORT     CAPS
------- ---------------------------------- ------- ------------- ------------- ------- ----------
0x0010  00000000000000047.11.215.139:00     REG    47.11.217.92  47.11.215.139 0x1450  0x00000000
        -------------------------------------
        codec bdwth(k) codecCaps      desc
        -------------------------------------
            4      190 0x00000000        1
            3      190 0x00000000        1
           19       28 0x00000001        1
-------------------------------------------------------------------------------------------------
0x0011  00000000000000047.11.215.139:01     REG    47.11.217.92  47.11.215.139 0x1452  0x00000000
        -------------------------------------
        codec bdwth(k) codecCaps      desc
        -------------------------------------
            4      190 0x00000000        1
            3      190 0x00000000        1
           19       28 0x00000001        1

... (one for each IPL channel and internet telephone)


-------------------------------------------------------------------------------------------------
pdt> tnt 4 22

 EQPD SLOOP TN 000152
 GP 0007156C SLP 00071653 00188DE9  CD 00071BBE 00188A71  LN 00071C36 001888E3

pdt> rlmShow 0x0152
  TN                  HWID                STATUS     HOSTIP        TERMIP        PORT     CAPS
------- ---------------------------------- ------- ------------- ------------- ------- ----------
0x0152  00000000000000047.11.215.139:22     REG    47.11.217.92  47.11.215.139 0x147c  0x00000000
        -------------------------------------
        codec bdwth(k) codecCaps      desc
        -------------------------------------
            4      190 0x00000000        1
            3      190 0x00000000        1
           19       28 0x00000001        1
```

Gateway channel port
(0x1450 = 5200)
VGMC card's TLAN IP addr:channel
Codecs supported (numbered same as in OTM)
i2004's HWID
i2004's IP address
ELAN IP of TPS the
i2004 is registered with
Codecs supported (numbered same as in OTM)

uZoneShow

Syntax: **`uZoneShow zone`**

Display the amount of intra- (IN) and inter- (OUT) zone bandwidth used for the specified zone. Print the same bandwidth usage data as that printed by LD 117.

The following example shows command output.

```
pdt> uZoneShow

Zone   0 BW used: IN = 254(LO)  OUT = 0(LO)
value = 43 = 0x2B
pdt> uZoneShow 1

Zone   1 BW used: IN = 0(LO)    OUT = 0(LO)
value = 41 = 0x29
```

Attendant Monitoring Tool in PDT

Attendant monitoring commands in PDT monitor the attendant status when it changes service or state. This is useful to address a critical problem observed with the attendant feature, whereby the attendant enters NITE service unexpectedly.

attnMonOn

This command turns on the attendant monitor and displays the following information whenever the attendant changes state:

- customer number
- attendant number that recently changed in service (IN or OUT SRVC)
- number of attendants in service
- customer service (DAY or NITE SRVC)
- attendant number and key pressed (NITE key or Position Busy key) on the attendant causing the customer to move into DAY or NITE service.

The following example shows command output.

```
 pdt> attnMonOn

ATTN Monitor is on

value = 0 = 0x0

Any change in the status of attendant

DIAG200

DIAG0200: CUST#<CUSTNO> ATTN#<ATTNUM>OUT SRVC <No. of ATTNs in service> LEFT

DIAG201

DIAG0201: CUST# <CUSTNO> NITE (or DAY) SRVC, ATTN#< ATTNUM> NITE (or PBSY) KEY
PRESSED
```

attnMonOff

This command turns off the attendant monitor.

The following example shows command output.

```
pdt> attnMonOff
```

```
ATTN Monitor is off

value = 0 = 0x0
```

Call Register Monitoring Tool in PDT (sl1crShow)

Call Register Monitoring addresses Call Register leakage by providing the status of all Call Registers at a particular time. The status is based on the MAINPM and AUXPM values of the Call Register.

The **`sl1crShow`** command has the following variations that provide Call Register Monitoring:

- **`sl1crShow <interval>`** Print the number of Call Registers for various nonzero MAINPM values, repeating at the specified interval (in seconds).
- **`sl1crShow <mainpm> <auxpm> <interval>`** Print the number of Call Registers with the specified mainpm and auxpm, and repeated at the specified interval (in seconds).
- **`sl1crShowStop`** Deactivate commands 2, 3, and 4.
- **`sl1crShowHelp`** Print help for the Call Register Monitoring commands.

The following table describes the parameters input with the sl1crShow command.

Table 112: Command parameters

Parameter	Value	Description
interval	1–3600	Time interval (seconds) between successive printing
mainpm	0–27	MAINPM value for corresponding AUXPM printing
auxpm	0 to maximum AUXPM for this MAINPM	AUXPM value for which the number of Call Registers are printed

The following example shows the output for the various sl1crShow commands where a telephone calls another telephone and the called telephone answers.

```
pdt> sl1crShow
MAINPM              NCR
IDLE                791
ESTABLISHED        2
SPECIAL             5
Total CR Count = 798
value = 1 = 0x1

pdt> sl1crShow 10
MAINPM                 NCR
IDLE                      791
ESTABLISHED      2
SPECIAL               5
Total CR Count = 798
```

```
value = 0 = 0x0
The status will keep printing after every 10 seconds.

pdt>sl1crShow 12 5
MAINPM = SPECIAL
AUXPM                    NCR
AML_MAINT             1
PRA_MSG_CR          2
PRA_ROSE_CR        2
Total AUXPM CR Count = 5
value = 0 = 0x0
The status will keep printing after every 5 seconds.

pdt>sl1crShow 12 37 15
MAINPM = SPECIAL
AUXPM  = AML_MAINT
The Call Register count = 1
value = 0 = 0x0
The status will keep printing after every 15 seconds.

pdt> sl1crShowStop
value = 0 = 0x0
pdt> sl1crShowHelp
sl1crShow :
Usage is to be one among the following :
sl1crShow [interval]
sl1crShow [mainpm] [interval]
sl1crShow [mainpm] [auxpm] [interval]

Prints the number of Call Registers for the specified mainpm and auxpm values at the
specified intervals

INPUT: interval - Time interval between successive printings
[range - 1 to 3600 (seconds)]
mainpm   - MAINPM value for corresponding AUXPM printing
[range - 0 to 27]
auxpm    - AUXPM value for which the number of Call  Registers will be printed [range
- 0 to MAX                     AUXPM of that MAINPM]  sl1crShowStop   - to stop
printing the Call Register status.
value = 0 = 0x0
```

VNS BUG ERR debug tool in PDT

The VNS tool provides extensive diagnostic data to be printed with the VNS ERROR and VNS BUG. You can use this tool to troubleshoot various call scenarios involving VNS. With the vnsdebug command on, detailed information regarding the VNS BUG/ERR prints on the TTY. This command also ensures that a RAS prints with the VNS ERROR.

The **vnsdebug** command has the following variations that provide VNS debugging:

- **vnsdebug** Print the current status of the vnsdebug command.
- **vnsdebug ?** or **vnsdebug help** or **vnsdebug <any junk value>** Print help on how to use the vnsdebug command.
- **vnsdebug off** Turn off enhanced VNS BUG/ERR printing.
- **vnsdebug on** Turn on enhanced VNS BUG/ERR printing on the TTY.

Note:

For an invalid parameter entered after the vnsdebug command (such as in the following example in the line

```
pdt> vnsdebug qwert
```

), the vnsdebug command output prints on the TTY.

The following example shows command output.

```
pdt> symload
Loading symbols from "c:/p/sl1/res.sym"
pdt> vnsdebug
vnsdebug enhanced print currently: OFF
value = 0 = 0x0
pdt> vnsdebug ?
Usage: vnsdebug [on|off]
value = 0 = 0x0
pdt> vnsdebug help
Usage: vnsdebug [on|off]
value = 0 = 0x0
pdt> vnsdebug qwert
Usage: vnsdebug [on|off]
value = -1 = 0xFFFFFFFF
```

The following example shows the output of VNS BUG/ERR when the vnsdebug command is off.

```
pdt> vnsdebug off
vnsdebug enhanced print: OFF
value = 0 = 0x0
BUG5182
BUG5182  : TASK= 46 TN= 00001548 CK= 0000A0D0 19:27:14 23/05/2007   BUG5182  +
107FC964 20D99288 20D91272 20D907CE 20D95D02
BUG5182 + 20D903E0 10BB0C62 10BA22EA 10B9278C 10B8F6E2
BUG5182  + 10B8F602 10B8F5B0 10B8524E 109215E0 10920232
BUG5182 + 109200C2 108FB442 108FAC24 107D342E 107C7DFE
BUG5182  + 107C6218 107C37B4 107C33A2 107C26EA 107BEFCA
BUG5182 + 10F3E804 104113DE 104105A0 1040FE02 1040F456
BUG5182  + 106EFDA0 106EF6E4 106E96EA 106E4D36 110C66C4
BUG5182 + 110C61F4 110C610A 110C5D80 110C0D52 110BA26E
BUG5182 1=00164CB3 00000607 00008218 00001548 00000000 0 00000000   0000000 0000
0000 0 2000 00000084 0000AAA2 00000000 00000000 00000000 00000000 00000000
BUG5182 2=00000259 00000000
BUG5182 5=000001A1 00000002 00008300 00000000 00000000 00000000 00000000 00164C
B3 00165823 001646FB 0016ACC6 0016ACBB
ERR5427 TASK= 46 TN= 00001548 CK= 0A65F5D3  19:27:14 23/05/2007
ERR5427 1=00164CB3 00000607 00008218 00001548 00000000 0 00000000  00000000 0000
0000 0 2000 00000084 0000AAA2 00000000 00000000 00000000 00000000 00000000

ERR5427 2=00000259 00000000
ERR5427 5=000001A1 00000002 00008300 00000000 00000000 00000000 00000000 00164CB3
00165823 001646FB 0016ACC6 0016ACBB
```

The following example shows the output of VNS BUG/ERR when the vnsdebug command is on.

```
pdt> vnsdebug on
vnsdebug enhanced print: ON
value = 0 = 0x0

BUG5182
BUG5182  : TASK= 46 TN= 00001548 CK= 0000A02F 19:27:56 23/05/2007
BUG5182  +   107FC964 20D99288 20D91272 20D907CE 20D95D02
```

```
BUG5182 + 20D903E0 10BB0C62 10BA22EA 10B9278C 10B8F6E2
BUG5182  + 10B8F602 10B8F5B0 10B8524E 109215E0 10920232
BUG5182 + 109200C2 108FB442 108FAC24 107D342E 107C7DFE
BUG5182  + 107C6218 107C37B4 107C33A2 107C26EA 107BEFCA
BUG5182 + 10F3E804 104113DE 104105A0 1040FE02 1040F456
BUG5182  + 106EFDA0 106EF6E4 106E96EA 106E4D36 110C66C4
BUG5182 + 110C61F4 110C610A 110C5D80 110C0D52 110BA26E

BUG5182 CRPTR:
00167E43 00000607 00008218 00001548 00000000 0 00000000 00000000 00000000 0
2000 00000084 0000AAA2 00000000 00000000 00000000 00000000 00000000

BUG5182 VNS_ORIG_INDEX:CRPTR=00000259
VNS_TER_INDEX:CRPTR=00000000
BUG5182 VDNBLOCK:
000001A1 00000002 000082FF 00000000 00000000 00000000 00000000 00167E43 00166393
001671DF 0016ACC6 0016ACBB

ERR5427
107FCBD2 20D991F6 20D9127E 20D907CE 20D95D02
ERR5427 + 20D903E0 10BB0C62 10BA22EA 10B9278C 10B8F6E2
ERR5427  + 10B8F602 10B8F5B0 10B8524E 109215E0 10920232
ERR5427 + 109200C2 108FB442 108FAC24 107D342E 107C7DFE
ERR5427  + 107C6218 107C37B4 107C33A2 107C26EA 107BEFCA
ERR5427 + 10F3E804 104113DE 104105A0 1040FE02 1040F456
ERR5427  + 106EFDA0 106EF6E4 106E96EA 106E4D36 110C66C4
ERR5427 + 110C61F4 110C610A 110C5D80 110C0D52 110BA26E
ERR5427 :TASK= 46 TN= 00001548 CK= 0A674738  19:27:56 23/05/2007
ERR5427 CRPTR:
00167E43 00000607 00008218 00001548 00000000 0 00000000 00000000 00000000 0     200
0 00000084 0000AAA2 00000000 00000000 00000000 00000000 00000000

ERR5427 VNS_ORIG_INDEX:CRPTR=00000259
VNS_TER_INDEX:CRPTR=00000000
ERR5427 VDNBLOCK:
000001A1 00000002 000082FF 00000000 00000000 00000000 00000000 00167E43    0016639
3 001671DF 0016ACC6 0016ACBB
```

umcUtility command in PDT

Syntax: **umcUtility <code> [<data>] [<customer>]**

This feature is a support utility to debug and test the Mobile X User Database. Run the command from the PDT shell. Depending on the command parameters, this command can perform various actions. In a multi-customer configuration, you must specify the customer number to work with the correct hash table. This parameter is 0 by default.

Example 1:

```
pdt> umcUtility 0
Usage: umcUtility <code>[<data>][<customer>]
customer = 0 by default
<code>              <data>                      <function>

0                       Print this help menu
1              0            Print profile summary
1              1            Dump slot info and profile summary
2              0            Turn off debug print
2          1            Turn on debug print
3         slot            Print details of a slot
```

```
4                       Print non-empty slots
(warning: this may take some time depending on the size of the data)
5            “DN”          Search for a mobile DN
DN must be specified in quotes & must be same as programmed in UXID prompt in LD11 /
LD20.
6              TN          Search for a specific TN
TN must be specified in compact form with 0x prefix, eg,
for TN 200 0 2 0, enter 0xC808 value = 45 = 0x2D
value = 45 = 0x2D
```

Example 2:

```
User database profile statistics:
Number of users          = 15
Number of slots used     = 15
Max count for a slot     = 1
Slot with the max count  = 510
Slot Count Distribution:
[7904] slot(s) have [0] users [15] slot(shave [1] users
Database info:
User Database Headpointer = [0x1055b8e8]
Current User Count = [15]
Debug flag @ [0x218be90] or SL1 [0x77a4] = [0x0]
value = 49 = 0x31
```

Example 3:

```
pdt> umcUtility 1 1
Table usage dump:
slot [510] count [1]
slot [525] count [1]
slot [526] count [1]
slot [1071] count [1]
slot [3332] count [1]
slot [3784] count [1]
slot [3972] count [1]
slot [3978] count [1]
slot [4842] count [1]
slot [6013] count [1]
slot [6016] count [1]
slot [6521] count [1]
slot [7279] count [1]
slot [7603] count [1]
slot [7608] count [1]

User database profile statistics:
Number of users          = 15
Number of slots used     = 15
Max count for a slot     = 1
Slot with the max count  = 510
Slot Count Distribution:
[7904] slot(s) have [0] users
[15] slot(s) have [1] users
Database info:
User Database Headpointer = [0x1055b8e8]
Current User Count = [15]
Debug flag @ [0x218be90] or SL1 [0x77a4] = [0x0]
value = 49 = 0x31
```

Example 4:

```
pdt> umcUtility 2 1
Debug print has been turned on
value = 32 = 0x20

pdt> umcUtility 5 "868501135"
Searching for MDN [868501135]
```

```
search MDN [5868 311a 0005 0000 ]
For this mobile DN, the data is stored in slot [525]
Details: Slot number [525] UEXT TN [6c01]
MDN [5868 311a 0005 0000 ]
DDN [4163 0000 ]
value = 2 = 0x2
```

Chapter 9: IP Phones

Special Key Sequences

Use special key sequences (SKS) to retrieve information about IP Phones. You can also reset the IP Phone without unplugging the power supply.

After most of these commands, the display remains in a suspended condition. To return the display to normal, press the Services key twice.

Manual Configuration Display

The Telephone Options menu on the Services key has a command that displays the Set Info. The Set Info displays the IP Phone IP address, hardware ID, firmware version, TN, node IP address, and node ID (if the node level-password is enabled, the IP address and TN are not displayed).

To see all information that is manually configurable at the IP Phone, enter the following SKS: Mute, Right Arrow, Up Arrow, Left Arrow, Down Arrow, Up Arrow, Mute, Mute.

Press the left softkey (OK) to advance through the configured entries until the display becomes blank. This displays the following information about the IP Phone: DHCP setting, IP address and netmask, default gateway IP address, S1 and S2 IP address, port action and retry count, and VLAN configuration data. When the display becomes blank, press the Services key twice to restore the normal display. If you perform this procedure during an active call, the call and feature states are not affected, but the Transmit (TX) path becomes mute until the display finishes. After the screen becomes blank, press the Mute key again to unmute the Transmit (TX) path.

Downloadable firmware version display

At any time during normal operation, you can view the current downloadable firmware version. Press Mute, Up Arrow, Down Arrow, Up Arrow, Down Arrow, Up Arrow, Mute, *, 0.

This SKS displays the firmware version, for example, "0602B39". Press any key to exit this mode.

MAC Display

When the IP Phone powers up, it displays a prompt for approximately four seconds. After this prompt appears, you have approximately 1.5 seconds to press the first three softkeys, which are directly below the LCD, in order from left to right (1,2,3), followed by the Up Arrow navigation key. After you enter this key sequence, the IP Phone enters the new MAC address viewing session with the "Mac Address" prompt in the context field of the LCD and the prompt "MAC: XXXXXXXXXXXX" on line 1 of the LCD (where XXXXXXXXXXXX is the MAC address of this E2). Additionally, the IP Phone displays 1 softkey function:

Softkey 1 - OK (continue).

Alternatively, when the IP Phone is operational, press the Services key, select Set Info and advance to HWID. The MAC address is the last 12 digits of the displayed number.

IP Phone reboot

At any time during normal operation, you can reset the IP Phone by pressing Mute, Up Arrow, Down Arrow, Up Arrow, Down Arrow, Up Arrow, Mute, 9, Rls (telephone handset with arrow pointing downward key).

After the telephone resets, it displays a prompt for four seconds. The telephone attempts to register at a random interval from 0 to 30 seconds after the prompt disappears. The Connect Svc 1 configuration screen with the TN and node ID appears after the IP Phone connects successfully with the Voice Media Gateway Card (VGMC) connect server.

RUDP status display and toggling state

By default, the IP Phone RUDP is on. To turn RUDP off for debugging, wait for the prompt at power up; then, press the first three softkeys, which are directly below the LCD, in order from left to right (1,2,3), followed by the green, lower right soft-label key. Each time you enter this sequence, the RUDP state (on or off) switches in the nonvolatile storage on the IP Phone.

Typically, you enter this command only to determine if the IP Phone inadvertently switched to RUDP off, thus preventing it from registering properly with the TPS.

At any time during normal operation, you can view and switch the RUDP state by pressing Mute, Up Arrow, Down Arrow, Up Arrow, Down Arrow, Up Arrow, Mute, *, 2.

The current RUDP state appears, and one softkey is available to switch the state and another to exit.

UNIStim 3.0

Use the following troubleshooting suggestions for UNIStim 3.0.

Enhanced diagnostics

With the IP Phone enhanced diagnostics feature, you can locate, examine, and eliminate problems in the UNIStim IP Phone systems. This feature can be used both locally and remotely.

This feature provides two functions. First it detects and logs errors, and can recover the telephone. Second it provides a secure shell (SSH) access to the telephone for administration and debugging.

The error collecting, logging, and recovery function provides task monitor, CPU usage monitor, task stack monitor, memory monitor, and watch dog to monitor and log errors at run time. This feature can also perform a hard reset of the telephone.

This feature provides two levels of diagnostics shell privilege. The first level is the PDT level which is a general user level and provides the full set of PDT commands. The second level is the VxShell level, which is a superuser level, provides the VxWorks native shell (tShell) commands and a full set of PDT commands. To access the PDT level, you require the SSH user ID and password. To access the vxshell level, you require permission on the signing server to perform the challenge–response sequence. IP client designers can access vxshell. The GNPS/PV/FS should work with a designer at any point they need access.

You can access two levels of diagnostic shell privileges: PDT and VxShell.

PDT level

The PDT level provides the full set of PDT commands. The prompt of PDT level is PDT>.

To access the PDT level, log on the IP Phone from an SSH client and enter the SSH user ID and SSH password. The IP Phone displays a banner, as shown in the following example.

```
Welcome to Avaya problem determination tool.
You are connected to Avaya 1120E IP Deskphone.
```

```
HW version: 31380016CA0081E86624
FW version 0625C39
MAC 0016CA0081E8 IP 47.128.38.163
Type “pdtHelp” for list of available commands.
Type “bye” to exit current shell.
PDT>
Table 100
PDT commands
Command Function
pdthelp Print pdt shell help
setLogLevel Set log level, Critical: 1, Major: 2, Minor: 3, Info: 4
setRecoveryLevel Set recovery level, Critical: 1, Major: 2, Minor: 3
Command Function
printLogLevel Print current log level, Critical: 1, Major: 2, Minor: 3, Info: 4
printRecoveryLevel Print current recovery level, Critical: 1, Major: 2, Minor: 3
printLogFile Print error log file
clearLogFile Clear content of error log file
taskMonShow Show task monitor list
taskMonAddTask Add a task to task monitor
taskMonRemoveTask Remove a task from task monitor
setCpuSamplingPeriod Set CPU sampling period, range: 30-120s, step 10s
printSetInfo Print hardware ID, firmware ID and MAC address
vxshell Switch into VxWorks Shell
bye Exit current shell
```

VxWorks level

The VxShell level is a superuser level, which provides the VxWorks native shell (tShell) and operates in context. The prompt is the tShell prompt ->. You can access all VxWorks tShell commands and a full set of PDTshell commands.

To access the VxWorks shell, enter **`PDT> vxshell`**. To exit the VxShell, type **`bye`**. If you require authentication to access to the VxShell, the telephone shows a 22-digit random number in hexadecimal format. You must send this random number to the signing server. The signing server generates a 20-digit authentication key in hexadecimal format. You can manually send this key to the IP Phone for authentication. Copy and paste random number and the authentication key between the SSH client window and signing server window. If the two keys match, you can access the VxShell. The authentication key is based on a secret shared by the IP Phone and the signing server.

The following example shows command output.

```
PDT> vxshell

You need to pass the challenge question to get into vxshell. The challenge number
is: 012f2b1538613349565058
Enter the response: 97d9ca05a0ba99ad8279
-> bye
PDT>
Note: You must enter bye to exit the vxshell instead of exit, which shuts down the
tShell. If the tShell gets shut down, you do not see the -> or the PDT shell prompt
PDT->. The IP Phone does not accept any commands at this state. To return to the
VxShell, press key [ctrl] [c] to restart the tShell.
Table 101
VxWorks commands
Command Function
i Display all task info
ti Complete info on TCB for task
```

```
tt Task trace
memshow Show system memory partition blocks and statistics
chkstack Print a task stack usage
ls List contents of directory, –f : include details
lsr Recursive list of directory contents
cd Set current working path
ping Test that a remote host is reachable
traceroute Trace route to any host
netinfo Print common network info
routeshow Display host and network routing tables and stats
arpShow Display entries in the system ARP table
```

Error logging

Log error information into the flash file system. The length of log file is 64 KB fixed and is written as a circular buffer.

You can issue a command to display or remove the log file on the console.

You can issue a command to configure or display the log level on the console. The log levels are the same as the severity levels. The default log level the telephone provides is Minor. The log level is stored in the provisioning file.

Note:

Because the length of the log file is 64 KB, use the Info level only if required to avoid overwriting the higher severity level records.

Each error is logged as a record. Each record has the same format regardless of which monitor generates it or the severity level and is organized into three sections. The first section is the mandatory information for each record including severity level, severity flag, time stamp, firmware version, source file information, error number, and a brief description, as shown in the following example.

```
 === Record #001 ===
MAJOR SET Logged 01/07/2002 00:34:35
Firmware: 06A5C1Hd10
File: EcrTaskMonitor.c Line #505 Error #4
Description: Task Monitor: the Transport  task is suspended
```

The second section of the error record is an option. If the task is registered in the list of stack overflow events, the output is as shown in the following example.

```
ERROR*ecrStackShow::StackOverflow: PDT
tpStackBase = 0x8194ffa0, pStackLimit=0x8194bfa0, pStackEnd= 0x8194bfa0
tstack: base 0x8194ffa0 end 0x8194bfa0  size 16368   high 1492 margin 14876
```

The third section of the error record is the supplementary information. The content depends on the flag in the calling function, as shown in the following example.

```
 ECR_LOG_NO_EXTRA_INFO: no supplementary info
ECR_LOG_TASK_INFO: log task info (ti, tt, the stack information from SP-96 to SP+96)
ECR_LOG_SUM_TASK_INFO: log summary of each task’s TCB (i)
ECR_LOG_MEM_INFO: log memory usage info (memShow)     Summary info for all tasks:
```

```
NAME        ENTRY       TID    PRI   STATUS      PC       SP      ERRNO  DELAY
---------- ------------ -------- --- ---------- -------- -------- ------- -----
tExcTask   excTask      81ff93d0   0 PEND       8078cc18 81ff92b0   3006b     0
tLogTask   logTask      81ff6840   0 PEND       8078cc18 81ff6728       0     0
tNbioLog   805f84a0     81ff4130   0 PEND       80634554 81ff4078       0     0
DOS        80018f2c     81be2f80   0 DELAY      8060e8a8 81be2ef0       0     3
tShell     shell        81bcba70   1 PEND       80634554 81bcb690  1c0001     0
VxTaskTerm VxTaskTermin 8199f290   2 PEND       80634554 8199f218       0     0
tWdbTask   wdbTask      81bcdde0   3 PEND       80634554 81bcdb50  3d0002     0
RTPT       80064848     819c3040   8 PEND       80634554 819c2870  3d0002     0
SNDT       8066ba14     819c0c20   8 DELAY      8060e8a8 819c08c8       0     1
TimeSave   8067c0b4     819f8820  15 DELAY      8060e8a8 819f8798       0  3362
CpuMon     800ec5cc     81a1c690  19 DELAY      8060e8a8 81a1c5d0       0   160
hwtk       8051d994     819c8070  20 SUSPEND    80634554 819c7ff0       0     0
ECR_WDOG   800e977c     81a24ab0  49 PEND       80634554 81a24a38       0     0
TaskMon    800ebf48     81a208a0  49 READY      8060fb38 81a1fb30  1c0001     0
tNetTask   netTask      81cc7770  50 READY      80634554 81cc76f8       0     0
NIRX       80018b8c     81be07c0  50 READY      80634554 81be05b0       b     0
tDhcpcState80536ccc     81bd9ee0  56 PEND       80634554 81bd9e40      31     0
tDhcpcReadTdhcpcRead    81bd88e0  56 PEND       80634554 81bd86c8  3d0002     0
tUglInput  uglInputTask 81a9e290  60 READY      80634554 81a9df40  3d0004     0
dhcpTask   sDHCPTask__5 819b5a20  60 PEND       80634554 819b58f8       0     0
t1         8064350c     81de8e30 100 PEND       8078cc18 81de8d00       0     0
usbOhciIsr 80655614     81ce4a40 100 PEND       80634554 81ce49d8       0     0
BusM A     80659590     81ce2790 100 READY      8060e8a8 81ce2700       0     0
usbMouseLib8064350c     81cdfda0 100 PEND       8078cc18 81cdfb40       0     0
usbMouseLib8064350c     81cdb470 100 PEND       8078cc18 81cdb378       0     0
usbKeyboard8064350c     81cd2810 100 PEND       8078cc18 81cd25b0       0     0
usbKeyboard8064350c     81ccdee0 100 PEND       8078cc18 81ccdde8       0     0
tTffsPTask flPollTask   81cc98d0 100 READY      8060e8a8 81cc9830  3d0002     0
Cursor     8006dec8     81a81640 100 READY      80634554 81a81578  3d0004     0
StickyTimer8007be40     81a37f30 100 READY      80634554 81a37e58  3d0004     0
EVTPROC    8019e810     81a2ccc0 100 READY      80634554 81a2cba0  3d0004     0
EtherSet   80194d68     819f7610 100 READY      80634554 819f72e0  3d0004     0
Link       80194d68     819e7400 100 READY      80634554 819e7310  3d0004     0
tDot1xSupp 80513550     819bdd60 100 PEND       8078cc18 819bdc68       0     0
RTCPSTS    801e10a8     819a56f0 100 PEND       8078cc18 819a55b0  3d0002     0
ProcSIPEvt 802327b0     819a0660 100 READY      80634554 819a0548  3d0004     0
Cdnr0      802157f4     819478b0 100 READY      80634554 819476e8  3d0004     0
DTMFTx0    802157f4     8193fd30 100 READY      80634554 8193fc48  3d0004     0
BLST       800d2310     81a36bb0 125 PEND+T     80634554 81a36b28       0 87194
DISR       8002187c     819e61f0 125 PEND       80634554 819e6168       0     0
FLASHICON  80021558     819d5fe0 125 PEND       80634554 819d5f60       0     0
INDR       800551a0     819d4ce0 125 PEND       80634554 819d4c58       0     0
HOOK       8005eec0     819d3a70 125 READY      8060e8a8 819d3998       0     0
KPD_CALLBAC8005f890     819d1320 125 PEND       80634554 819d1180       0     0
KBDR       8005f5d0     819cf0b0 125 PEND       80634554 819cf028       0     0
RTC        800536ac     819cde00 125 READY      80634554 819cdd48       0     0
CDT        CDTUpdate    819ccb50 125 READY      80634554 819ccaa8       0     0
HDDET      8002f218     819cb880 125 READY      8060e8a8 819cb7b0       0     0
HSDET      8002f5c4     819ca5d0 125 PEND       80634554 819ca520  3d0004     0
EPTR       eptReadThrea 819c9360 125 READY      80634554 819c9160  3d0004     0
CDNC       800463f8     81ffc2f0 125 PEND       80634554 81ffc238       0     0
SIGT       8003efdc     819c5460 125 READY      8060e8a8 819c5380       0     0
HAPIGET    hapiGetTask  819c4250 125 READY      80634554 819c4120  3d0004     0
WAVT       800d3d24     819c1e30 125 PEND       80634554 819c1da8       0     0
i200xFullUp8008a1e8     81a86700 130 READY      80634554 81a86578  3d0004     0
i200xShortU800c8698     81a39250 130 READY      80634554 81a390c8  3d0004     0
SMC::TimerSThreadEntry_ 8199e010 150 PEND+T     80634554 8199dda8  3d0002   600
smce_app_thThreadEntry_ 8199bf30 150 PEND       80634554 8199bc08  3d0002     0
Transport tThreadEntry_ 81997320 150 PEND+T     80634554 81996dc0  3d0002 429491
327
UA thread  ThreadEntry_ 81992620 150 PEND+T     80634554 81992440  3d0002 276492
DNS thread ThreadEntry_ 8198d900 150 PEND+T    80634554 8198d720   3006b 214743 6140
blog       printQTask   81a35770 180 READY      8060e8a8 81a35680       0     0
dsp_assert 80520698     81fffdb0 180 PEND       80634554 81fffd30       0     0
winmgr     winAppTask   81a6f9a0 200 PEND       8078cc18 81a6f7e8       0     0
i200xApp   winAppTask   81a4cf80 200 PEND       8078cc18 81a4cdc8       0     0
Link       8001a2ec     819bace0 200 READY      8060e8a8 819bac28       0     0
```

```
ETHERSET_TI80194d68     819bfa10 201 READY      80634554 819bf928  3d0004     0
tAioIoTask0aioIoTask    81fe9ce0 250 PEND       80634554 81fe9c48       0     0
tDcacheUpd dcacheUpd    81aa4c90 250 READY      8060e8a8 81aa4bd8       0     0
tAioWait   aioWaitTask  81ff0f50 251 PEND       80634554 81ff0e50  3d0002     0
Idle       800ec590     81a32e70 253 READY      8060e8a8 81a32de8       0     0
tUsbKbd    8064350c     81cd7140 255 READY      8060e8a8 81cd7088       0     0
ICPIDLE    8051dc20     81ffd640 255 READY      80785584 81ffd5e8       0     0

Memory Usage Info:
status    bytes     blocks   avg block  max block
------ ---------- --------- ---------- ----------
current
free    9498400       186      51066    9249120
alloc    7210640      4915       1467          -
cumulative
alloc   81327184     29445       2762          -

Detailed info for task ID 0x819C8070:

NAME        ENTRY       TID    PRI   STATUS      PC       SP     ERRNO  DELAY
---------- ------------ -------- --- ---------- -------- -------- ------- -----
hwtk       8051d994     819c8070  20 SUSPEND    80634554 819e1938       0     0

stack: base 0x819c8070  end 0x819c6070  size 8176   high 1432   margin 6744
options: 0x4
VX_DEALLOC_STACK

VxWorks Events
--------------
Events Pended on    : Not Pended
Received Events     : 0x0
Options             : N/A

$0    =        0   t0    =        0   s0    =        0   t8    =        0
at    = 80d70000   t1    = 1000ff00   s1    =        0   t9    = 80e70000
v0    =        0   t2    = 80e97e74   s2    =        0   k0    =        0
v1    =      3fe   t3    =        0   s3    =        0   k1    =        0
a0    =       50   t4    = 80e7e308   s4    =        0   gp    = 80d94a50
a1    =       21   t5    =       82   s5    =        0   sp    = 819c7ff0
a2    =        1   t6    = 203ac098   s6    =        0   s8    = 819c8010
a3    = 80efec72   t7    =        0   s7    =        0   ra    = 807830fc
divlo =        6   divhi =        4   sr    = 1000ff01   pc    = 80634554

Task Trace:
819c8030 _pthread_setcanceltype+ac8a64: KNL_RunReadyThreads (819c8280, ffffffff,
0, 0)
807830f4 KNL_RunReadyThreads+74 : semQPut (&KNL_gGlobals, 80782dac, 819c8000, 80
0ecb50)

stack dump from sp-96 to sp+96

819e18d0:                     0000 0000 819a f200   *          ......*
819e18e0:  0000 0000 8059 aa48 8039 3890 8086 1884   *.....Y.H.98.....*
819e18f0:  eeee eeee eeee eeee eeee eeee 0000 0000   *................*
819e1900:  819e 1908 8012 f7b8 81be 2f30 0000 8010   *........../0....*
819e1910:  819e 1978 819e 1958 803a 2894 819e 1958   *...x...X.:(....X*
819e1920:  8059 aa48 803a 0624 0000 0000 0000 0000   *.Y.H.:.$........*
819e1930:  0000 0000 819e 1958 81be 2f30 0000 8010   *.......X../0....*
819e1940:  819e 1978 0000 0000 803a 2894 819e 1968   *...x.....:(....h*
819e1950:  801f 07bc 0000 0000 819e 1c70 0000 0064   *...........p...d*
819e1960:  0000 0000 819e 1968 0000 0064 819e 1990   *.......h...d....*
819e1970:  819e 1978 801e f1f0 819e 9630 0000 03e8   *...x.......0....*
819e1980:  0000 0019 819e 19c0 819e 1990 801d fa58   *...............X*
819e1990:  819e 95f0 0000 1079 0000 0000 0000 0000   *.......y........*
819e19a0:  0000 0000 eeee eeee 0000 0001 805a 05dc   *.............Z..*
819e19b0:  0000 1079 eeee eeee 819e 19c0 801d fa10   *...y............*
819e19c0:  819e 95f0 eeee eeee eeee eeee eeee eeee   *................*
819e19d0:  819e 19d8 801f 08a0                       *................*
value = 21 = 0x15
```

```
Remote Diagnostics Access
```

Set up SSH user ID and password

You must set up the user ID and password before you can access the telephone. The telephone stores the user ID and password in the provisioning file. The length of user ID and password is 4 to 12 characters. When the user is in the edit mode to enter a password, the characters appear. Otherwise, the password is displayed as asterisks to block it from being read.

In the text UI, select Local Diagnostics > Advanced Diag Tools. Select the Config SSH check box. Enter a User ID and Password.

In the GUI, select Local Diagnostics > Advanced Diag Tools. For Config SSH?, enter Y. Enter a User ID and Password.

You can use a freeware SSH client such as PuTTY. On a PuTTY terminal keyboard, configure the backspace key as Ctrl+h.

PDT level

The first level is the PDT level which is a general user level, provides the full set of PDT commands. The prompt of PDT level is PDT>.

To access the PDT level, log on to the telephone from a SSH client and enter the user ID and password. If the user ID and password are correct, you enter the PDT shell, as shown in the following example.

```
Welcome to Avaya problem determination tool.
You are connected to Avaya 1120E IP Deskphone.
HW version: 31380016CA0081E86624
FW version 0625C39
MAC 0016CA0081E8
IP 47.128.38.163
Type “pdtHelp” for list of available commands.
Type “bye” to exit current shell.
PDT>
To exit the PDT shell, type the “bye” command.
```

VxShell Level

The second level is the VxShell level, which is a superuser level, provides the VxWorks native shell (tShell) and operates in context. The prompt is the tShell prompt “->”. You can access all VxWorks tShell commands and the full set of PDT shell commands.

To access the VxShell level, enter vxshell on the PDT shell and proceed through an authentication process if the load is the production load. In the designer load, you need not to go through authentication. You can control a compile option if you must go through authentication in different loads.

If the authentication succeeds, you enter the VxWorks native shell. If the authentication fails, no further message appears and you stay at the PDT level.

On the VxShell, the global I/O is redirected to PTY so the user can see the debug printf output on the serial port console. However, nothing appears on the serial port console until you exit the VxShell at which point, the printf is restored to the serial console.

To exit the vxshell, enter the **bye** command.

The following example shows the output for accessing the VxShell.

```
PDT> vxshell
You need to pass the challenge question to get into vxshell.
The challenge number is: 012f2b1538613349565058
Enter the response:97d9ca05a0ba99ad8279
To exit the VxShell:
-> bye
```

VxShell level privilege authentication process

To access the VxShell, enter **`vxshell`** in the PDT shell. The telephone presents a 22-digit random number challenge in hexadecimal format. A secure server at Avaya generates an authentication key response to the challenge. You then enter the authentication key in the SSH window and if they match, you are given access to the VxShell.

Typically, you must copy the challenge digit string into an email and send it to your Avaya support organization, which can then provide you with the authentication key. This level of access is normally required only when you are investigating a problem jointly with the Avaya clients technology team.

PDT commands

The following table lists the PDT commands.

Table 113: PDT commands

Command	Description
Feature specific commands	
pdtHelp	Print pdt shell help

Command	Description
setLogLevel	Set log level: Critical: 1, Major: 2, Minor: 3, Info: 4
setRecoveryLevel <recovery level>	Set recovery level, Critical: 1, Major: 2, Minor: 3
printLogLevel	Print current log level, Critical: 1, Major: 2, Minor: 3, Info: 4
printRecoveryLevel	Print current recovery level, Critical: 1, Major: 2, Minor: 3
printLogFile	Print error log file
clearLogFile	Clear content of error log file
taskMonShow	Show task monitor list
taskMonAddTask < taskName | task id>	Add a task to task minitor
taskMonRemoveTask < taskName | task id>	Remove a task from task monitor
setCpuSamplingPeriod <sampling period>	Set CPU sampling period, range: 180 - 360s, step 10s
listcerts	List all trusted certificates
printcert	Print a trusted certificate in detail
listcrls	Prints a detailed list of CRLs
listdevcerts	Print all device certificates
listsecuritylogs	List all events logged through the security interface
securitypolicy	`Prints the current Security Policy values`
gxasinfo	List the GXAS configuration and current status
printSetInfo	Print hardware ID, firmware ID and MAC address
vxshell	Switch to VxWorks shell
bye	Exit current shell
VxWorks commands	
i	Display all task information
ti	Complete information on TCB for task
tt	Task trace
memShow [level]	Show system memory partition blocks and statistics

Command	Description
ls [dirname] [-f]	List contents of directory, –f : include details
lsr [dirname]	Recursive list of directory contents
cd [dirname]	Change the current working path
ping <host ip> [# of pings]	Verify that a remote host is reachable
tracert <host ip> [max hops]	Trace route to a host
netinfo	Print common network information
routeshow	Display host and network routing tables and statistics
arpShow	Display entries in the system ARP table

Chapter 10: Alarm errors on the VGMC, Signaling Server, and MGC

This section describes alarm errors on the Voice Media Gateway Card (VGMC), Signaling Server, and MGC.

VGMC faceplate maintenance display codes

The VGMC maintenance display provides the diagnostic status of the card during power-up, the operational state when in service, and error information about the functional state of the card. Faceplate Maintenance Display Code lists the normal and fault codes.

During power-up, the card performs multiple self-tests, including an internal RAM test, ALU test, address mode test, boot ROM test, timer test, and external RAM test. If a test fails, the card enters a maintenance loop, and no further processing is possible. A failure appears on the display to indicate which test failed. For example, if the timer test fails, F:06 is displayed.

If any other tests fail (up to and including the EEPROM test), a message appears for three seconds. If more than one test fails, the message indicates the first failure. If you select verbose mode (by the test input PIN on the backplane), the three-second failure message does not appear.

If the maintenance display shows a persistent T:20 (indicating a VGMC or Signaling Server application software failure) after the card reset during a software download procedure, call Avaya technical support for assistance to download new software to the card.

The following table lists the faceplate maintenance display codes.

Table 114: Faceplate maintenance display codes

		SMC
T:01	F:01	XA Internal RAM Test Failed
T:02	F:02	XA ALU Test Failed
T:03	F:03	XA Address Mode Test Failed
T:04	F:04	Watchdog Timer Test Failed
T:05	F:05	Flash Test Failed
T:06	F:06	Timer Test Failed

		SMC
T:07	F:07	XA External RAM Test Failed
T:08	F:08	Dongle not Detected
T:09	F:09	Time Switch FPGA failed
T:10	F:10	ISPDI FPGA failed
T:11	F:11	Host DPRAM Test Failed
T:12	F:12	DS30X DPRAM Test failed
T:13	F:13	Serial EEPROM Test Failed
T:19	–	Waiting for application startup messages from processor.
T:20	–	CardLAN enabled, transmitting BOOTP requests. If this display persists, then the ITG Line card is running in BIOS ROM mode due to card software failure.
T:21	–	CardLAN operational, A07 enabled, display now under host control. Card is looking for an active leader by sending BOOTP requests on the management LAN. A follower card sends BOOTP requests on the management LAN continuously. Enter +++ to escape from BOOTP request mode and start VGMC shell.
T:22	–	Attempting to start the application.
T:23	F:23	IXP1200 Polling Failure 1
T:24	F:24	IXP1200 Polling Failure 2
Lxxx	–	Card is configured as the node leader card. xxx = number of IP Phones registered on the card
Mxxx	–	Card is not configured as the Leader but is currently the node master. xxx = number of IP Phones registered on the card
Fxxx	–	Card has detected the node master and is operating as a follower. xxx = number of IP Phones registered on the card.

MGC four-character LED faceplate display

You can check the MGC four-character LED faceplate display for diagnostic information during bootup and normal operation.

Use of the four-character LED display during MGC boot

When the system boots, the diagnostic information from the hardware and firmware sanity tests appears on the faceplate. The messages that appear on the four-character LED display during MGC bootup are shown in the following table. Further design investigation is required to confirm that all suggested messages during bootup are possible.

Table 115: Messages displayed on the four-character LED display during MGC bootup

Message	Description
BOOT	This is the first message when display becomes active.
POST	Power on self test message appears while the MGC performs hardware system tests during system power up.
PASS	Power on self test pass.
EXXX	Error code where XXX is a numeric value. An error code appears if a serious system error is detected.
LOAD	Application software is loading.

In normal operation the messages appear in the following order: BOOT, POST, PASS, LOAD. If a fatal self-test error occurs, then PASS and LOAD do not appear. Instead an error code appears.

Use of the four character LED during MGC normal operation

After the boot loader loads the CSP and starts to run, you can use the faceplate display for diagnostic information.

During normal operation, the four-character LED displays the superloop and shelf number of the Media Gateway 1000E (MG 1000E) with MGC. If an error occurs that requires a diagnostic message to appear, then the display cycles between displaying the cabinet number and the error code. Each item appears for 20 seconds. The following table shows the messages that appear.

Table 116: Messages displayed on the four character LED during MGC normal operation

Message	Description
EXXX	Error code where XXX is a numeric value. An error code appears if a serious system error is detected.
LLL^{S}	IPMG super loop and shelf number where LLL is the superloop number and S is the shelf number. For example, 032^{0} or 120^{1}. **Note:** Although this appears to be four characters, the superscript shelf digit is a special character [that is, 0 and 1] defined internally to the MGC to ensure it looks different from the loop designators.
E001	A 96 port daughter board is installed in DB position 2, this is not supported.
E002	Unable to send registration request to call server.
E003	Link down to call server.
E004	Daughter board is not registered with call server. Additional messages are defined for the VoIP DSP Daughter boards.

Chapter 11: VGMC and Signaling Server configuration files

Introduction

The active configuration files are in the /CONFIG directory and are named CONFIG.INI and BOOTP.TAB. EM creates these files and downloads them to the card. The BOOTP.TAB file contains the node properties, while the CONFIG.INI file contains the Card properties. With the introduction of the node level TN password feature in VGMC 2.2, a configuration file named SECURITY.INI contains the node password. The loss plan adjustment commands are in the LOSS.INI file.

Beginning in Release 4.0, all systems use a CONFIG.INI file that is centrally stored on the Call Server. The Signaling Server and VGMC access the Call Server by using the Call Server IP address stored in the BOOTP.TAB file (Leader) or in the BOOTP response (Follower). Therefore, the BOOTP.TAB file is also updated to have the Call Server IP address.

The system automatically backs up the configuration files to file names with .BAK extentions (for example, CONFIG.BAK and BOOTP.BAK). In case of a bad file download or file corruption, the system replaces the active copy with this version of the file.

An additional file, TPS.INI, can be created. This file is not created by EM but is a text file that you can use to control aspects of the VGMC application operation. When the application boots, if the file is in the C:/CONFIG directory, the contents are parsed and used in the application operation. If the file is not present, the application operates as normal. This file is typically used only for debugging and does not remain in the CONFIG directory.

Another file, UMS.INI, is created by the VGMC or Signaling Server application and stores the IP Phone firmware upgrade information.

Note:

Drive letters must be capitalized; file names can be lowercase. All files must follow the 8.3 format.

Displaying contents

Print the contents of each file to the console by using the following command (the second parameter defaults to zero and remain off):

```
->copy "<path/filename>", 0
```

Creating a file from CLI

In an extreme case where EM is not available or the LAN connection does not work, you can create a new file and write its contents from the terminal keyboard. The following command copies data from the standard input device (the keyboard) into the specified file. Everything typed goes directly into the file. End the input by pressing Ctrl+D at the start of a blank line. This closes the file and returns the VxWorks prompt. Copy the existing file to a backup file name (for example, **`-> copy "CONFIG.INI", "CONFIG.SAV"`**) and then copy the new file to the CONFIG.INI file name.

The following example is from the SMC.

-> copy 0,"temp.ini" Hello world! ^Dvalue = 0 = 0x0 -> copy "temp.ini" Hello world! value = 0 = 0x0

Note:

To avoid incorrectly configuring a node by typing invalid information, Avaya recommends that you do not use this procedure.

Differences between configuration files

The various EM versions generate different CONFIG.INI and BOOTP.TAB files. If you move a VGMC from a Meridian 1 system to a CS 1000 or CS 1000M system or vice versa, be sure to download or transfer the card and node properties so the CONFIG.INI and BOOTP.TAB files are updated to the correct format.

File details

CONFIG.INI

The MAM task parses this file to configure the routes, the DSP codecs and parameters, Call Server ELAN IP address (active ELNK), SNMP traps, DSCP bits, and 802.1Q priority bits. The file is fully parsed on card reset. It is also parsed when the file is transmitted by EM. In these cases, the application parses some sections of the CONFIG.INI file and modifies the prior VGMC operation so no card reboot is required for data changed in those areas. Changes in other areas of the file (for example, the [TlanConfig] section) still require a card reboot before the changes can take effect. You can change the following sections without performing a reboot:

- [snmp]
- [routes]
- [dsp0]
- [tos]
- [ElanConfig]
- [Loss Plan]
- [firmware]

You can download the file through the VGMC shell by using the command configFileGet.

Starting in Release 4.0, the following line is examined and compared between the copy of the CONFIG.IN file stored on the Call Server and the copy stored locally on the Signaling Server or VGMC:

```
#dateOfLastFileModification(dd/mm/yyyy hh:mm:ss)=21/08/2003 01:45:12 i.
```

If the line is different, then the CONFIG.INI file on the Call Server is used.

The configuration file is self-explanatory. Each section begins with a section identifier in brackets ([]).

Note:

The [routes] section is for creating static route entries on the ELAN interface only. The entry includes the destination IP address and the subnet mask.

EM file

The following is an example of a CONFIG.INI file generated by the Release 4.0 Element Manager.

```
#version=VGMC4.0
#authoringApplication=EM
#dateOfLastFileModification(dd/mm/yyyy hh:mm:ss)=21/08/2003 01:45:12

[keycode]
keycodeId=12345678-12345678-12345678

[Security]
ElanAccessOnly=0

[snmp]
rdCommunityName=public
wrCommunityName=private
trapsEnabled=1
trapsub=0.0.0.0
ts1=0.0.0.0,255.255.254.0,
CardIP=47.11.255.26
sysHostName=
sysLocation=
sysContact=
CardIP=47.11.255.33
sysHostName=
sysLocation=
sysContact=

[routes]
re1=0.0.0.0,255.255.254.0,

[dsp0]
EchoCancel=1
DspEchoTail=128
VadThreshold=-17
IdleNoise=-65
DtmfToneDetect=1
ModemDetect=1
FaxDetect=1
FaxRate=9600
FaxPlayoutNomD=100
FaxActiveTimeout=200
FaxPacketSize=30
Codec=1
VxPayload=30
VxPlayoutNomD=60
VxPlayoutMaxD=120
VadEnabled=0
Codec=5
VxPayload=20
VxPlayoutNomD=40
VxPlayoutMaxD=80
VadEnabled=0
Codec=2
VxPayload=30
VxPlayoutNomD=60
VxPlayoutMaxD=120
VadEnabled=0
Codec=9
VxPayload=30
VxPlayoutNomD=60
VxPlayoutMaxD=120
VadEnabled=0
Codec=8
VxPayload=1
VxPlayoutNomD=60
VxPlayoutMaxD=120
VadEnabled=0

[tos]
controlPrio=160
voicePrio=184
```

```
802.1pqEnabled=0
802.1p=6
802.1q=0
natEnabled=0
natTimeout=90

[ElanConfig]
CallServerIP=47.11.255.0
SurvivalIP=47.11.254.193
SignalPort=15000
BroadcastPort=15001

[TlanConfig]
SignalPort=5000
AudioPort=5200

[GateKeeper]
PrimaryGKIP=47.11.249.140
AlternateGKIP=47.11.249.106
PrimaryNCSIP=47.11.249.140
PrimaryNCSPort=16500
AlternateNCSIP=47.11.249.106
AlternateNCSPort=16500
NCSTimeout=10

[firmware]
serverIP=0.0.0.0
subnetMask=255.255.254.0
fwfileDirPath=download/firmware/
userID=
password=

[ApplicationServer_47.11.255.26]
HostName=
H323ID=bvw_lab_node_5
SW_VtrkTPS=1
SW_GateKeeper=0
SW_SetTPS=1

[ApplicationServer_47.11.255.33]
HostName=
H323ID=bvw_lab_node_5
SW_VtrkTPS=0
SW_GateKeeper=0
SW_SetTPS=1

[SNTP Server]
Mode=active
Interval=256
Port=20555

[SNTP Client]
Mode=passive
Interval=256
Port=20555
ServerIP=0.0.0.0

[OM Thresholds]
PacketLoss=10
Latency=250
Jitter=30
PollingPeriod=5
CallServerReporting=1
```

The network time client/server moved from the TPS.INI file to the EM created CONFIG.INI file. The following parameters are available:

- Mode — defines the mode of the server operation as follows:
  - active — sends broadcast of time at defined intervals.
  - passive — waits for query from clients (default)
  - disabled — time server not started
- Interval — assigns the interval between time updates and can be set to any 2n value (31 > n > 0) (256)
- Port — assigns the UDP port used by the time client/server (20,000 + node ID)

BOOTP.TAB

The BOOTP.TAB file is present on all VGMC and Signaling Servers in the node. This file contains the node properties. The file is fully parsed on card reset. It is also parsed when the file is transferred by EM. In these cases, the application's run-time configuration enhancement parses the BOOTP.TAB file and allows card additions or deletions with no card reboot required. Changes in other areas of the file (for example, card IP addresses or subnet masks) still require a card reboot before taking effect.

In Release 4.0, the Call Server IP address was added to the BOOTP.TAB file to allow the central distribution of the CONFIG.INI file from the Call Server to all VGMC and Signaling Servers in the node.

Note:

Even though the first lines appear as comments within the BOOTP.TAB file, the administrative applications and the VGMC application use them; do not modify them. Comments elsewhere within the BOOTP.TAB file (designated by a leading number sign [#]) are ignored by the BOOTP server.

EM file

The following example is the BOOTP.TAB file generated by EM:

```
#192.168.20.10
#47.11.216.187
#version=VGMCINE4.0
#WEB_MGMT 47.11.216.187 SS Leader
#WEB_MGMT 47.11.216.186 P Follower
#WEB_MGMT 47.11.216.229 P Follower
#WEB_MGMT 47.11.216.230 SA Follower

.subnet1
:sm=255.255.254.0:gw=47.11.216.1:ts=192.168.20.10:hn:cs=47.11.155.158:

1:tc=.subnet1:ha="00:02:b3:86:29:3a":ip=47.11.216.187:lp=192.168.20.2 255.255.0.0
192.168.20.1:dn=:to=7812:hd="/u/config":
2:tc=.subnet1:ha="00:60:38:8e:12:00":ip=47.11.216.186:lp=192.168.20.3 255.255.0.0
192.168.20.1:dn=4 0:to=7812:hd="/C:/config":
3:tc=.subnet1:ha="00:60:38:8e:12:99":ip=47.11.216.229:lp=192.168.20.4 255.255.0.0
```

```
192.168.20.1:dn=8 0:to=7812:hd="/C:/config":
4:tc=.subnet1:ha="00:60:38:bd:b3:15":ip=47.11.216.230:lp=192.168.20.5 255.255.0.0
192.168.20.1:dn=6 0:to=7812:hd="/C:/config":
```

SECURITY.INI

The SECURITY.INI file exists if you enter a node-level TN password. The variable Security Check denotes whether the password is enabled or disabled. The variable Password displays the current password. This information is available through the command,nodePwdShow.

```
[Node Info]
SecurityCheck=1
PassWord=1234567890
```

LOSS.INI

The LOSS.INI file exists if you enter either the lossPlanSet or UKLossPlanSet command. The file contains the RLR/SLR offset values that are downloaded to the IP Phones. Positive numbers are loss, negative values are gain.

If all values are 0 (for example, after you enter the lossPlanClr or UKL command), the application deletes the file. To view the file contents, enter the lossPlanPrt command.

The following example shows the file contents after you enter the UKLossPlanSet command.

```
-> copy "loss.ini"
[Loss Plan]
HandsetRLROffset=0
HandsetSLROffset=-5
HeadsetRLROffset=0
HeadsetSLROffset=-5
HandsfreeRLROffset=0
HandsfreeSLROffset=0
```

TPS.INI

The TPS.INI file is an optional text file in the /CONFIG directory that you can use to modify the default (normal) behaviour of the LTPS. The format of the file is similar to the CONFIG.INI file: each section begins with a section header in brackets followed by a list of data items, each equated to some value.

The file is parsed on card bootup. If any parameters change, reboot the card so the changes can take effect.

Note:

Avaya does not recommend that you change any parameter unless technology or GNTS staff direct you to do so.

Call Server link control

To disable the use of the TCP link between the VGMC or Signaling Server and the Call Server, assign a value of 0 (false) to the UseTcpLink= variable. The default is 1 (true) to use TCP signaling.

```
[pbxLib]
UseTcpLink=
```

To change the time between attempts to establish the link with the Call Server, add the following line to the TPS.INI file. The default is 15 seconds.

```
[pbxLib]
LinkResetTimer=
```

RUDP windowing control

The IP Phone RUDP connections use message windowing. The default size is 10 outstanding (non-ACKed) messages. You can adjust the window size by adding the following lines in the TPS.INI file:

```
[usiLib]
rudpWindowSize=
```

DSP gain limit control

The VGMC gateway normally limits the gain adjustment for the DSPs to +/– 6 dB. You can adjust this range by adding the following lines to the file:

```
[Loss Plan]
DspMaxLoss=
DspMinLoss=
```

DSP echo canceller control

You can configure the echo canceller parameters for all channels. You can place the same variables under the heading [dsp0] in the CONFIG.INI file. However, values in the CONFIG.INI file are superseded by values in the TPS.INI file. If values neither appear in the TPS.INI or CONFIG.INI file, then the default values are used.

```
[Dsp Echo]
DspEchoOpcode=
DspEchoNlpFix=
DspEchoConfig=
DspEchoNlpAggress=
DspEchoCnConfig=
```

IP parameter control

Adjust the timing of the IP Phone jitter buffer resynchronization mechanism by adding the following lines. The parameter earlyResync has a default value of 2000 milliseconds; lateResync has a default of 60000 milliseconds.

```
[IP Params]
earlyResync=
lateResync=
```

TPS control

Modify the parameters of the election process for the VGMC node master by adding the following lines to the TPS.INI file. The default for each parameter appears in parenthesis.

ElectionDuration controls the length of time to wait for responses to an election request (2 seconds).

ElectionResult defines how often the Master notifies the other cards in the node of its existence (30 seconds).

ElectionTerm defines how long the nonmasters wait to obtain the Master broadcast (35 seconds).

Port defines the UDP port for the election communications (16543).

MaxTerminals defines the maximum number of terminals allowed to register on the card (by default: SMC with 32 channels: 128). Change the MaxTerminals value to change when the card notifies the Master that it cannot accept another IP Phone registration. Use care when you change this value. You cannot use one value across a node with mixed card types unless you want to restrict all cards to the same capacity.

```
[TPS Node]
ElectionDuration=
ElectionResult=
ElectionTerm=
Port=
MaxTerminals=
```

Keymap download control

You can add two parameters to the TPS.INI file to modify the timing of the keymap download process. Both parameters are used in a calculation that determines how quickly requests are sent to the CS 1000 for keymap downloads. The default for each parameter appears in parentheses.

RTTExp is the expected round trip time between sending a keymap download request to the CS 1000 and receiving its response. When the RTT exceeds this value, the CS 1000 is busy so the equation introduces negative feedback to slow down the requests. This prevents the CS 1000 from losing requests due to buffer overflows (300 milliseconds).

Delay Factor is a multiplication factor used in the calculation (10).

```
[Keymaps]
RTTExp=
Delay Factor=
```

Startup script

Sometimes you must ensure that certain commands run if a card reboots. You can place these commands in a startup script. This file must have the following path and file name, to be parsed by the VGMC:

"/C:/etc/startup"

If the "etc" directory is not present, create it by using the command mkdir.

Any command you can enter at the CLI, you can enter in the startup script. A script can be useful to debug problems, for example, if you want to automatically load object files. The following is an example of the contents of a startup script that adds a host and modifies the default gateway to be the ELAN instead of the TLAN.

```
-> copy "startup"
hostAdd("joeuser","47.11.229.34")
netDevCreate("joeuser:","47.11.229.34",1)
iam "nilantha","joeuserPassword"
routeDelete "0.0.0.0","10.1.1.1"
routeAdd "0.0.0.0","47.11.214.1"
value = 0 = 0x0
```

The startup script runs immediately after the vxWorks banner appears.

```
Adding 6239 symbols for standalone.
]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]
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]]]]]]]]]]]]]]]]]]]]]]]]]]]]]       Development System
]]]]]]]]]]]]]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]]]]]]]]]]]]       VxWorks version 5.3.1
]]]]]]]]]]]]]]]]]]]]]]]]]]       KERNEL: WIND version 2.5
]]]]]]]]]]]]]]]]]]]]]]]]]       Copyright Wind River Systems, Inc., 1984-1997

CPU: VPS Pentium MMC2.  Processor #0.
Memory Size: 0x2000000.  BSP version ITGL 2.10.63.2.

Executing startup script /C:/etc/startup ...
hostAdd("joeuser","47.11.229.34")
```

```
value = 0 = 0x0
netDevCreate("joeuser:","47.11.229.34",1)
value = 0 = 0x0
iam "joeuser","joeuserPassword"
value = 0 = 0x0
routeDelete "0.0.0.0","10.1.1.1"
value = 0 = 0x0
routeAdd "0.0.0.0","47.11.214.1"
value = 0 = 0x0
Done executing startup script /C:/etc/startup
```

Chapter 12: Security features

Security features in CS 1000

CS 1000 includes the following security features:

- Secure remote access is provided by Secure Shell (SSH).
- Security for individual call streams is provided by the Media Security feature.
- Security for ELAN subnets is provided by the system management security and ISSS, which is based on the industry standard IP Security (IPsec).
- Security for SIP signaling is provided by Transport Layer Security (TLS).
- Security for data exchanges between the IP Phones and the Signaling Server is provided by Secure UNIStim signaling, which requires a Secure Multimedia Controller (SMC) 2450 device.

Security for SIP signaling -- SIP TLS

CLI Commands

SIPGwShow

You can use this command to display primary and secondary proxy transport types and TLS usage. The URI scheme appears in the channel table at the end of the output from this command.

```
oam> SIPGwShow
SIPNPM Status                : Active
Primary   Proxy IP address   : 47.11.232.110
Secondary Proxy IP address   : 47.9.194.167
Primary   Proxy port         : 5061
Secondary Proxy port         : 5061
Primary   Proxy Transport    : TLS
Secondary Proxy Transport    : TLS
Active    Proxy              : Primary  :Registered
Time To Next Registration    : 7 Seconds Channels Busy / Idle / Total : 30 / 34 / 64
```

```
Stack version              : 4.0.0.30
TLS Security Policy          : Best Effort
SIP Gw Registration Trace    : OFF
Output Type Used             : RPT
Channel tracing         : -1
Channel id should be a non-zero value
```

SIPCallTrace

You can use this command to show the transport and URI scheme.

SIPTLSConfigShow

Display TLS configuration parameters of the entire system, including client and server session caching parameters, the certificate for the local system, and the certificates that are configured.

```
pdt> SIPTLSConfigShow
TLS Parameter Details
***********************

TLS Configuration Details
--------------------------------------------
TLS Security Policy:          Best Effort
TLS Client Authentication:    Yes
TLS session caching size:     200
TLS session timeout:          600 (s)
TLS renegotiation threshold:  20000000 (packets)
TLS local certificate:        /u/ssl/cert/0.pem
There are 1 CA certificate(s) configured:
--------------------------------------------

/u/ssl/ca/73bf4006.r0
X509:Subject
</C=CA/ST=Ontario/L=Belleville/O=Avaya/OU=BVW/CN=bvwibmem.ca.avaya.com>X509:Issuer
</C=CA/ST=Ontario/L=Belleville/O=Avaya/OU=BVW/CN=bvwibmem.ca.avaya.com>
X509:Public Key  1024 (bits)
X509:Valid From  <Feb 27 14:35:37 2007 GMT>
X509:Valid Until <Feb 26 14:35:37 2037 GMT>
Session caching parameters - Client
--------------------------------------------
NumSessionAllowed              200
NumSessionInCache               23
NumConnectionsReceived        1277
NumConnectionsRenegotiation      2
NumConnectionsFinished        1275
NumConnectionsAccepted           0
NumSessionCacheHit            1238
NumSessionCacheMiss              0
NumSessionTimeout                0
NumSessionCallBackHit            0
NumCacheOverFlow                 0

Session caching parameters - Server
--------------------------------------------
NumSessionAllowed              200
NumSessionInCache                2
NumConnectionsReceived           0 NumConnectionsRenegotiation      0
NumConnectionsFinished           0
NumConnectionsAccepted           3
NumSessionCacheHit               0
```

```
NumSessionCacheMiss              0
NumSessionTimeout                0
NumSessionCallBackHit            0
NumCacheOverFlow                 0
pdt>
```

SIPTLSSessionShow

Display the details of all SIP TLS sessions or sessions associated with a server IP address. This command shows existing sessions (in connected state and persistent), cached sessions, and the uptime and cipher suites, but does not show key information.

```
pdt> SIPTLSSessionShow

SIPTLSSessionShow

Usage :SIPTLSSessionShow <srvIP/srvIP,port/ALL>
srvIP       : display the TLS Session details for given server IP
srvIP, port : display the TLS Session details for given server IP and Port
ALL         : display all the existing TLS session details

pdt> SIPTLSSessionShow all
RemoteIP Port    UpTime        SSL SslSession Cipher:    Version       Name Bits
--------------- ---- --------- ---------- ----------        ----------- ----------
----
Totally there are 0 TLS session caching entries.
```

SIPMessageTrace

Configure filtering criteria for message tracing.

The capture buffer is intentionally not freed after the file is saved in case a problem occurs and you need to retrieve the file. However, be careful not to allocate a large buffer and leave it on the card in case later processing on the card requires extra memory.

Chapter 13: SIP NRS on Linux

This section describes troubleshooting the SIP NRS on Linux.

Linux commands

The following diagnostic commands are helpful in diagnosing application issues:

- traceroute
- free
- ipcs
- ldconfig
- ping

Each command is described on a man page in Linux.

```
spspri -> host name
-p option is to specify the port while performin traceroute.
-s option is the source ip address of the SPS box.

[admin2@spspri ~]$ traceroute -p 5060 spspri
traceroute to spspri.avaya.com (47.11.119.133), 30 hops max, 38 byte packets
1  spspri (47.11.119.133)  0.089 ms  0.039 ms  0.037 ms
[admin2@spspri ~]$

[admin2@spspri ~]$ traceroute -s 47.11.119.133 spspri
traceroute to spspri.avaya.com (47.11.119.133) from 47.11.119.133, 30 hops max, 38
byte packets
1  spspri (47.11.119.133)  0.086 ms  0.038 ms  0.036 ms
[admin2@spspri ~]$
[admin2@spspri ~]$

[admin2@spspri ~]$ free
total       used       free     shared    buffers     cached
Mem:       2074952    1546688     528264          0     133096     710448
-/+ buffers/cache:     703144    1371808
Swap:      4192912        160    4192752
[admin2@spspri ~]$
[admin2@spspri ~]$

[admin2@spspri ~]$ ipcs

------ Shared Memory Segments --------
key        shmid      owner      perms      bytes      nattch     status
0x6107c07f 1343488    admin2    770        2864       13
0x6207c07f 1376257    admin2    770        2097152    8
0x6307c07f 1409026    admin2    770        1048576    9
0x6407c07f 1441795    admin2    770        1048576    9
0x6507c07f 1474564    admin2    770        1048576    8
0x6607c07f 1507333    admin2    770        2097152    9
0x6707c07f 1540102    admin2    770        2097152    9
```

```
0x6807c07f 1572871    admin2    770        4194304    13
0x6907c07f 1605640    admin2    770        1048576    8
0x6a07c07f 1638409    admin2    770        524288     8
0x6b07c07f 1671178    admin2    770        2097152    9
0x6c07c07f 1703947    admin2    770        2097152    9
0x6d07c07f 1736716    admin2    770        1048576    8
0x7807c0a7 1310733    admin2    666        4096       5


------ Semaphore Arrays --------
key        semid      owner      perms      nsems
0x61078001 1310721    admin2    770        1
0x62078001 1343490    admin2    770        1
0x63078001 1376259    admin2    770        1
0x64078001 1409028    admin2    770        1
0x65078001 1441797    admin2    770        1
0x66078001 1474566    admin2    770        1
0x67078001 1507335    admin2    770        1
0x68078001 1540104    admin2    770        1
0x69078001 1572873    admin2    770        1
0x6a078001 1605642    admin2    770        1
0x6b078001 1638411    admin2    770        1
0x6c078001 1671180    admin2    770        1
0x6d078001 1703949    admin2    770        1

------ Message Queues --------
key        msqid      owner      perms      used-bytes   messages
0x6107c080 1212417    admin2     770        0            0
0x6207c080 1245186    admin2     770        0            0
0x6307c080 1277955    admin2     770        0            0
0x6407c080 1310724    admin2     770        0            0
0x6507c080 1343493    admin2     770        0            0
0x6607c080 1376262    admin2     770        0            0
0x6707c080 1409031    admin2     770        0            0
0x6807c080 1441800    admin2     770        0            0
0x6907c080 1474569    admin2     770        0            0
0x6a07c080 1507338    admin2     770        0            0
0x6b07c080 1540107    admin2     770        0            0
0x6c07c080 1572876    admin2     770        0            0

[admin2@spspri ~]$
[admin2@spspri ~]$
[admin2@spspri ~]$ /sbin/ldconfig
-v /sbin/ldconfig: Path `/opt/nortel/Snmp-Daemon-TrapLib/lib' given more than once
/sbin/ldconfig: Path `/opt/nortel/open/osip' given more than once
/usr/X11R6/lib:
libX11.so.6 -> libX11.so.6.2
libGLw.so.1 -> libGLw.so.1.0
libXevie.so.1 -> libXevie.so.1.0
libXcursor.so.1 -> libXcursor.so.1.0.2
libXrandr.so.2 -> libXrandr.so.2.0
libXext.so.6 -> libXext.so.6.4
libXfixes.so.3 -> libXfixes.so.3.0
libXtst.so.6 -> libXtst.so.6.1
libXinerama.so.1 -> libXinerama.so.1.0
libXaw3d.so.7 -> libXaw3d.so.7.0
libfontenc.so.1 -> libfontenc.so.1.0
libxkbfile.so.1 -> libxkbfile.so.1.0
libdpstk.so.1 -> libdpstk.so.1.0
libXxf86vm.so.1 -> libXxf86vm.so.1.0
libOSMesa.so.4 -> libOSMesa.so.4.0
libXaw.so.6 -> libXaw.so.6.1
libXfont.so.1 -> libXfont.so.1.5
libXaw.so.7 -> libXaw.so.7.0
libXv.so.1 -> libXv.so.1.0
libXvMC.so.1 -> libXvMC.so.1.0
libXmuu.so.1 -> libXmuu.so.1.0
libXxf86misc.so.1 -> libXxf86misc.so.1.1
libXxf86rush.so.1 -> libXxf86rush.so.1.0
```

```
libICE.so.6 -> libICE.so.6.3
libXxf86dga.so.1 -> libXxf86dga.so.1.0
libXt.so.6 -> libXt.so.6.0
libXrender.so.1 -> libXrender.so.1.2.2
libXmu.so.6 -> libXmu.so.6.2
libdps.so.1 -> libdps.so.1.0
libXcomposite.so.1 -> libXcomposite.so.1.0
libxkbui.so.1 -> libxkbui.so.1.0
libXft.so.1 -> libXft.so.1.1
libGL.so.1 -> libGL.so.1.2
libSM.so.6 -> libSM.so.6.0
libXpm.so.4 -> libXpm.so.4.11
libXRes.so.1 -> libXRes.so.1.0
libXss.so.1 -> libXss.so.1.0
libFS.so.6 -> libFS.so.6.0
libXi.so.6 -> libXi.so.6.0
libXdamage.so.1 -> libXdamage.so.1.0
libI810XvMC.so.1 -> libI810XvMC.so.1.0
libpsres.so.1 -> libpsres.so.1.0
libXft.so.2 -> libXft.so.2.1.2
libXTrap.so.6 -> libXTrap.so.6.4 /opt/nortel/base/open/openssl/openssl-0.9.7l/
linux-i686/lib:
libssl.so.0.9.7 -> libssl.so.0.9.7
libcrypto.so.0.9.7 -> libcrypto.so.0.9.7 /opt/nortel/open/osip:
libosipparser2.so.3 -> libosipparser2.so.3.0.0
libosip2.so.3 -> libosip2.so.3.0.0
/opt/nortel/Snmp-Daemon-TrapLib/lib:
libSnmpTrapHandler.so -> libSnmpTrapHandler.so
/opt/nortel/base/patchutil/binary:
libee_testexeclib.1.0.1.so -> libee_testexeclib.1.0.1.so
libee_testlib.1.0.3.so -> libee_testlib.1.0.3.so
libee_infrastructure.1.0.0.so -> libee_infrastructure.1.0.0.so
libslgapi.so -> libslgapi.so
libee_testlib.so -> libee_testlib.so
libOamFm.so -> libOamFm.so
libee_patcher_tap.so -> libee_patcher_tap.so
libee_patcher_tap.1.0.0.so -> libee_patcher_tap.1.0.0.so
libee_patcher.1.0.0.so -> libee_patcher.1.0.0.so
libee_testlib.1.0.1.so -> libee_testlib.1.0.1.so
libee_patcher_loader.so -> libee_patcher_loader.so
libpatch_event.so -> libpatch_event.so
libee_interceptor.1.0.0.so -> libee_interceptor.1.0.0.so
libee_interceptor.so -> libee_interceptor.so
libtap_slr_a.so -> libtap_slr_a.so
libmercapi.so -> libmercapi.so
libee_patcher_loader.1.0.0.so -> libee_patcher_loader.1.0.0.so
libee_fault.1.0.0.so -> libee_fault.1.0.0.so
libee_patcher.so -> libee_patcher.so
libee_fault.so -> libee_fault.so
libee_infrastructure.so -> libee_infrastructure.so
libhwServices.so -> libhwServices.so
libee_testexeclib.so -> libee_testexeclib.so libee_testlib.1.0.2.so ->
libee_testlib.1.0.2.so
/lib:
libdevmapper.so.1.01 -> libdevmapper.so.1.01
libpam_misc.so.0 -> libpam_misc.so.0.77
libSegFault.so -> libSegFault.so
libanl.so.1 -> libanl-2.3.4.so
libsepol.so.1 -> libsepol.so.1
libNoVersion.so.1 -> libNoVersion-2.3.4.so
libthread_db.so.1 -> libthread_db-1.0.so
libselinux.so.1 -> libselinux.so.1
libm.so.6 -> libm-2.3.4.so
libdb-3.3.so -> libdb-3.3.so
libgcc_s.so.1 -> libgcc_s-3.4.5-20051201.so.1
libpcre.so.0 -> libpcre.so.0.0.1
libcidn.so.1 -> libcidn-2.3.4.so
libcom_err.so.2 -> libcom_err.so.2.1
libpamc.so.0 -> libpamc.so.0.77
```

```
libnss_compat.so.1 -> libnss1_compat.so.1
libnss_nisplus.so.2 -> libnss_nisplus-2.3.4.so
libe2p.so.2 -> libe2p.so.2.3
libacl.so.1 -> libacl.so.1.1.0
libcrypt.so.1 -> libcrypt-2.3.4.so
libnss_dns.so.1 -> libnss1_dns.so.1
libnsl.so.1 -> libnsl-2.3.4.so
libcap.so.1 -> libcap.so.1.10
libblkid.so.1 -> libblkid.so.1.0
libnss_compat.so.2 -> libnss_compat-2.3.4.so
libdevmapper.so.1.00 -> libdevmapper.so.1.00
libaudit.so.0 -> libaudit.so.0.0.0
libdb.so.3 -> libdb2.so.3
libproc-3.2.3.so -> libproc-3.2.3.so
libnss_files.so.2 -> libnss_files-2.3.4.so
libnss_ldap.so.2 -> libnss_ldap-2.3.4.so
libasound.so.2 -> libasound.so.2.0.0
libBrokenLocale.so.1 -> libBrokenLocale-2.3.4.so
libnss_nis.so.1 -> libnss1_nis.so.1
libdl.so.2 -> libdl-2.3.4.so
libdb-4.1.so -> libdb-4.1.so
libnss_files.so.1 -> libnss1_files.so.1
libattr.so.1 -> libattr.so.1.1.0
ld-linux.so.2 -> ld-2.3.4.so
libss.so.2 -> libss.so.2.0
libssl.so.4 -> libssl.so.0.9.7a
librt.so.1 -> librt-2.3.4.so
libpthread.so.0 -> libpthread-0.10.so
libdevmapper.so.1.02 -> libdevmapper.so.1.02
libc.so.6 -> libc-2.3.4.so
libuuid.so.1 -> libuuid.so.1.2
libresolv.so.2 -> libresolv-2.3.4.so
libpam.so.0 -> libpam.so.0.77
libnss_dns.so.2 -> libnss_dns-2.3.4.so
libnss_nis.so.2 -> libnss_nis-2.3.4.so
libext2fs.so.2 -> libext2fs.so.2.4
libtermcap.so.2 -> libtermcap.so.2.0.8
libnss_hesiod.so.2 -> libnss_hesiod-2.3.4.so
libcrypto.so.4 -> libcrypto.so.0.9.7a
libdb-4.2.so -> libdb-4.2.so
libutil.so.1 -> libutil-2.3.4.so
/usr/lib:
libncursesw.so.5 -> libncursesw.so.5.4
libgnome-2.so.0 -> libgnome-2.so.0.800.0
libsasl.so.7 -> libsasl.so.7.1.11
libgcrypt.so.11 -> libgcrypt.so.11.1.1
libslang-utf8.so.1 -> libslang-utf8.so.1.4.9
libstunnel.so -> libstunnel.so
libstdc++-libc6.2-2.so.3 -> libstdc++-3-libc6.2-2-2.10.0.so
libgamin-1.so.0 -> libgamin-1.so.0.1.1
libstdc++.so.2.7.2 -> libstdc++.so.2.7.2.8
libfam.so.0 -> libfam.so.0.0.0
libkrbafs.so.0 -> libkrbafs.so.0.0.0
libradius-1.0.1.so -> libradius.so
libgettextlib-0.14.1.so -> libgettextlib.so
libxslt.so.1 -> libxslt.so.1.1.11
libgettextsrc-0.14.1.so -> libgettextsrc.so
libgssrpc.so.3 -> libgssrpc.so.3.0
libelf.so.1 -> libelf-0.97.so
libglib-2.0.so.0 -> libglib-2.0.so.0.400.7
libnetsnmp.so.10 -> libnetsnmp.so.10.0.1
libethereal.so.0 -> libethereal.so.0.0.1
libORBit-2.so.0 -> libORBit-2.so.0.0.0
libldap_r-2.2.so.7 -> libldap_r-2.2.so.7.0.6
libexslt.so.0 -> libexslt.so.0.8.9
libnss_nis.so.1 -> libnss1_nis.so
libwrap.so.0 -> libwrap.so.0.7.6
libreadline.so.4 -> libreadline.so.4.3
libsensors.so.3 -> libsensors.so.3.0.5
```

```
libhal-storage.so.0 -> libhal-storage.so.0.0.0 libg++.so.2.7.2 -> libg++.so.2.7.2.8
librpmbuild-4.3.so -> librpmbuild-4.3.so
libpcap.so.0.8.3 -> libpcap.so.0.8.3
libdbus-glib-1.so.0 -> libdbus-glib-1.so.0.0.0 libstdc++.so.2.9 -> libstdc+
+.so.2.9.dummy
libtiff.so.3 -> libtiff.so.3.6
libfontconfig.so.1 -> libfontconfig.so.1.0.4
libcmaX.so.1 -> libcmaX.so.1.0
libpython2.3.so.1.0 -> libpython2.3.so.1.0
libwnck-1.so.4 -> libwnck-1.so.4.9.0
libttf.so.2 -> libttf.so.2.3.0
liblwres.so.1 -> liblwres.so.1.1.2
libsasl2.so.2 -> libsasl2.so.2.0.19
libmenuw.so.5 -> libmenuw.so.5.4
libgthread-1.2.so.0 -> libgthread-1.2.so.0.0.10
lib-org-xml-sax.so.5 -> lib-org-xml-sax.so.5.0.0
libgcj.so.5 -> libgcj.so.5.0.0
libgpg-error.so.0 -> libgpg-error.so.0.1.3
libexpect5.42.so -> libexpect5.42.so
libisccc.so.0 -> libisccc.so.0.1.0
libformw.so.5 -> libformw.so.5.4
libopcodes-2.15.92.0.2.so -> libopcodes-2.15.92.0.2.so libpanelw.so.5 ->
libpanelw.so.5.4
libtcl8.4.so -> libtcl8.4.so
libbz2.so.1 -> libbz2.so.1.0.2
libnss_dns.so.1 -> libnss1_dns.so
libnetsnmphelpers.so.10 -> libnetsnmphelpers.so.10.0.1 libwiretap.so.0 ->
libwiretap.so.0.0.1
libhpev.so.1 -> libhpev.so.1.0
liblber-2.2.so.7 -> liblber-2.2.so.7.0.6
libpopt.so.0 -> libpopt.so.0.0.0
libutempter.so.0 -> libutempter.so.0.5.5
libhistory.so.4 -> libhistory.so.4.3
libgdk-x11-2.0.so.0 -> libgdk-x11-2.0.so.0.400.13 libbonoboui-2.so.0 ->
libbonoboui-2.so.0.0.0
libdb.so.2 -> libdb1.so.2
libmp.so.3 -> libmp.so.3.1.7
libgmp.so.3 -> libgmp.so.3.3.3
librpmdb-4.3.so -> librpmdb-4.3.so
libfreetype.so.6 -> libfreetype.so.6.3.7
librpmio-4.3.so -> librpmio-4.3.so
libk5crypto.so.3 -> libk5crypto.so.3.0
libstdc++.so.6 -> libstdc++.so.6.0.3
libnetsnmphelpers.so.5 -> libnetsnmphelpers.so.5.1.2
libkadm5clnt.so.5 -> libkadm5clnt.so.5.1
libjpeg.so.62 -> libjpeg.so.62.0.0
libgnomecanvas-2.so.0 -> libgnomecanvas-2.so.0.800.0
libgtk-x11-2.0.so.0 -> libgtk-x11-2.0.so.0.400.13
libgdk_pixbuf-2.0.so.0 -> libgdk_pixbuf-2.0.so.0.400.13
libesd.so.0 -> libesd.so.0.2.35
libgdbm.so.2 -> libgdbm.so.2.0.0
libkadm5srv.so.5 -> libkadm5srv.so.5.1
libbonobo-activation.so.4 -> libbonobo-activation.so.4.0.0
libgnomeui-2.so.0 -> libgnomeui-2.so.0.800.0
libstdc++.so.2.8 -> libstdc++.so.2.8.0
libmagic.so.1 -> libmagic.so.1.0
libgconf-2.so.4 -> libgconf-2.so.4.1.0
libstartup-notification-1.so.0 -> libstartup-notification-1.so.0.0.0
lib-org-w3c-dom.so.5 -> lib-org-w3c-dom.so.5.0.0
libORBitCosNaming-2.so.0 -> libORBitCosNaming-2.so.0.0.0
libhesiod.so.0 -> libhesiod.so.0
libgmodule-2.0.so.0 -> libgmodule-2.0.so.0.400.7
libgnomevfs-2.so.0 -> libgnomevfs-2.so.0.800.2
libgssapi_krb5.so.2 -> libgssapi_krb5.so.2.2
libnetsnmp.so.5 -> libnetsnmp.so.5.1.2
libncurses.so.5 -> libncurses.so.5.4
libpango-1.0.so.0 -> libpango-1.0.so.0.600.0
libIDL-2.so.0 -> libIDL-2.so.0.0.0
libnetsnmpmibs.so.10 -> libnetsnmpmibs.so.10.0.1
```

```
libcpqci.so.1 -> libcpqci.so.1.0
libdns.so.16 -> libdns.so.16.0.0
libart_lgpl_2.so.2 -> libart_lgpl_2.so.2.3.16
libeap-1.0.1.so -> libeap.so
libkrb5.so.3 -> libkrb5.so.3.2
libnss_files.so.1 -> libnss1_files.so
libbonobo-2.so.0 -> libbonobo-2.so.0.0.0
libgmpxx.so.3 -> libgmpxx.so.3.0.5
libxml2.so.2 -> libxml2.so.2.6.16
libgmodule-1.2.so.0 -> libgmodule-1.2.so.0.0.10
libbeecrypt.so.6 -> libbeecrypt.so.6.2.0
libpangoxft-1.0.so.0 -> libpangoxft-1.0.so.0.600.0
libpangox-1.0.so.0 -> libpangox-1.0.so.0.600.0
libstdc++-libc6.1-1.so.2 -> libstdc++-2-libc6.1-1-2.9.0.so
liblockdev.so.1 -> liblockdev.so.1.0.1
libungif.so.4 -> libungif.so.4.1.3
libdbus-1.so.0 -> libdbus-1.so.0.0.0
libstdc++.so.5 -> libstdc++.so.5.0.7
libkrb4.so.2 -> libkrb4.so.2.0
libglib-1.2.so.0 -> libglib-1.2.so.0.0.10
libatk-1.0.so.0 -> libatk-1.0.so.0.800.0
libnetsnmptrapd.so.5 -> libnetsnmptrapd.so.5.1.2
libbfd-2.15.92.0.2.so -> libbfd-2.15.92.0.2.so
libnetsnmpagent.so.5 -> libnetsnmpagent.so.5.1.2
libisccfg.so.0 -> libisccfg.so.0.0.11
libnetsnmpmibs.so.5 -> libnetsnmpmibs.so.5.1.2
libnetsnmpagent.so.10 -> libnetsnmpagent.so.10.0.1
libltdl.so.3 -> libltdl.so.3.1.0
libpcreposix.so.0 -> libpcreposix.so.0.0.0
libaudiofile.so.0 -> libaudiofile.so.0.0.2
libnetsnmptrapd.so.10 -> libnetsnmptrapd.so.10.0.1
libhal.so.0 -> libhal.so.0.0.0
libnewt.so.0.51 -> libnewt.so.0.51.6
lib-gnu-java-awt-peer-gtk.so.5 -> lib-gnu-java-awt-peer-gtk.so.5.0.0
libcmacommon.so.1 -> libcmacommon.so.1.0
libgpm.so.1 -> libgpm.so.1.19.0
libdes425.so.3 -> libdes425.so.3.0
libform.so.5 -> libform.so.5.4
libgobject-2.0.so.0 -> libgobject-2.0.so.0.400.7
libcrack.so.2 -> libcrack.so.2.7
libldap-2.2.so.7 -> libldap-2.2.so.7.0.6
libz.so.1 -> libz.so.1.2.1.2
libuser.so.1 -> libuser.so.1.1.1
libgtop-2.0.so.4 -> libgtop-2.0.so.4.0.0
librpm-4.3.so -> librpm-4.3.so
libesddsp.so.0 -> libesddsp.so.0.2.35
libpng12.so.0 -> libpng12.so.0.1.2.7
libgthread-2.0.so.0 -> libgthread-2.0.so.0.400.7
libmenu.so.5 -> libmenu.so.5.4
libglade-2.0.so.0 -> libglade-2.0.so.0.0.4
libdb_cxx-4.2.so -> libdb_cxx-4.2.so
libORBit-imodule-2.so.0 -> libORBit-imodule-2.so.0.0.0
libgdk_pixbuf_xlib-2.0.so.0 -> libgdk_pixbuf_xlib-2.0.so.0.400.13
libpanel.so.5 -> libpanel.so.5.4
libsnmp.so.5 -> libsnmp.so.5.1.2
libkdb5.so.4 -> libkdb5.so.4.0
libparted-1.6.so.12 -> libparted.so
libgnome-keyring.so.0 -> libgnome-keyring.so.0.0.1
libexpat.so.0 -> libexpat.so.0.5.0
libcmapeer.so.1 -> libcmapeer.so.1.0
libisc.so.7 -> libisc.so.7.1.5
libhpasmintrfc.so.1 -> libhpasmintrfc.so.1.0
libpangoft2-1.0.so.0 -> libpangoft2-1.0.so.0.600.0
libobjc.so.1 -> libobjc.so.1.0.0
libnss_compat.so.1 -> libnss1_compat.so
/usr/X11R6/lib/tls: (hwcap: 0x8000000000000000)
/lib/tls: (hwcap: 0x8000000000000000)
/usr/lib/tls: (hwcap: 0x8000000000000000)
/usr/lib/sse2: (hwcap: 0x4000000)
```

```
libmp.so.3 -> libmp.so.3.1.7
libgmp.so.3 -> libgmp.so.3.3.3
libgmpxx.so.3 -> libgmpxx.so.3.0.5
/lib/tls/i686: (hwcap: 0x8008000000000000)
libthread_db.so.1 -> libthread_db-1.0.so
libm.so.6 -> libm-2.3.4.so
librt.so.1 -> librt-2.3.4.so
libc.so.6 -> libc-2.3.4.so
libpthread.so.0 -> libpthread-2.3.4.so
libdb-4.2.so -> libdb-4.2.so
/lib/tls/i586: (hwcap: 0x8004000000000000)
libthread_db.so.1 -> libthread_db-1.0.so
libm.so.6 -> libm-2.3.4.so
librt.so.1 -> librt-2.3.4.so
libc.so.6 -> libc-2.3.4.so
libpthread.so.0 -> libpthread-2.3.4.so
libdb-4.2.so -> libdb-4.2.so
/lib/tls/i486: (hwcap: 0x8002000000000000)
libthread_db.so.1 -> libthread_db-1.0.so
libm.so.6 -> libm-2.3.4.so
librt.so.1 -> librt-2.3.4.so
libc.so.6 -> libc-2.3.4.so
libpthread.so.0 -> libpthread-2.3.4.so
libdb-4.2.so -> libdb-4.2.so
/usr/lib/tls/i686: (hwcap: 0x8008000000000000)
libdb_cxx-4.2.so -> libdb_cxx-4.2.so
/usr/lib/tls/i586: (hwcap: 0x8004000000000000)
libdb_cxx-4.2.so -> libdb_cxx-4.2.so
/usr/lib/tls/i486: (hwcap: 0x8002000000000000)
libdb_cxx-4.2.so -> libdb_cxx-4.2.so
/sbin/ldconfig: Can't create temporary cache file /etc/ld.so.cache~: Permission
denied
[admin2@spspri ~]$
[admin2@spspri ~]$
```

After you install a new shared library, this command updates the shared library symbolic links in /lib.

```
[admin2@spspri ~]$ /sbin/ldconfig -n /lib
[admin2@spspri ~]$
```

SIP NRS command

Syntax:

`spcmd -[H|L|O|R|S|V] -[s|t|u|v <defined value>] ...`

The spcmd command generates a SIP log file at the location /var/opt/nortel/sps/LOG/SIPLogFile.

Table 117: Command description

Family	Parameter	Description
-H	None	Display a help message that describes the proper syntax for this command.

Family	Parameter	Description
-L	-v debug | info | all -s on | off	Write debug, information, or all (that is, both) logs in addition to the SIP log file. Turn on/off the log types listed by the -v parameter. If no parameter is given, the default is assigned a value of on. Default is on.
-O	-v 400 | 401 | 407 | hw | ss	Display OM report for 400, 401, 407, or 3XX responses as well as the high water (hw) mark for internal queue memory usage and the number of SIP sessions (ss) that have been established.
-R	-s force | wait | now -t now | 1..99 -u min | sec	Execute a shutdown and restart of the application immediately or in some given time unit (min\sec) whether call are executing or not by either forcing the application or waiting for call processing to stop.
-S	-s force | wait -t now | 1..99 -u min | sec	Execute a switching of activity from the running application processing to stop where a timer value can be given.
- V	-v app | stack | all	Show the version of the application, oSIP stack, or both.
- D	-v backup <file>,<file> -v restore <file>,<file>,<file> -v gknrsdataconvert <parm1-parm5> -v siproutingtest <parm1-parm7>	Database base command access. Select the base command to run along with the parameters that are expected for the command. Results are written to the report file specified.

```
[admin2@spspri ~]$ cd /opt/nortel/sps/bin/
```

The following example shows how to log only DEBUG messages in the SIP Log file.

```
[admin2@spspri bin]$ ./spcmd -L -v debug
```

The following example shows how to log only INFO messages in the SIP log file.

```
admin2@spspri bin]$ ./spcmd -L -v info
[admin2@spspri bin]$
```

The following example shows how to log all messages in the SIP log file.

```
[admin2@spspri bin]$ ./spcmd -L -v all
[admin2@spspri bin]$
```

The following example shows how to enable debugging.

```
[admin2@spspri bin]$ ./spcmd -L -s on
[admin2@spspri bin]$
```

The following example shows how to disable debugging.

```
[admin2@spspri bin]$ ./spcmd -L -s off
[admin2@spspri bin]$
[admin2@spspri bin]$
[admin2@spspri bin]$
```

Note:

Currently the debugging messages are always turned on and cannot be turned off.

The following example shows how to gracefully disable SPS. In this case, SPS proxy is running but out of service. This command returns 0 when successful.

```
[admin2@spspri bin]$ ./spcmd -R -s force 0
[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to gracefully enable SPS, so that SPS is in service. This command returns 0 when successful.

```
[admin2@spspri bin]$ ./spcmd -S -s force0
[admin2@spspri bin]$
```

The following example shows how to shut down the NCS application. This command returns 0 when successful.

```
[admin2@spspri bin]$ ./spcmd -R -c ncs
Stopping the NCS components
Initiating shutdown of "NCS"
ncsd pid(s): 26344 26345 26346
Initiating cleanup: "IPC resources"
ipcrm -m 1310733
[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to start the NCS application. This command returns 0 when successful.

```
[admin2@spspri bin]$ ./spcmd -S -c ncs
Starting the NCS components using uid:500 gid:500 for startup.
starting: ncsd
[admin2@spspri bin]$ Starting NCS application.
Restart string: /opt/nortel/ncs/scripts/ncs-exec.pl restart
NCS Configuration Role=0
IPPrimary=47.11.119.133 port=16500
IPAlternate=47.11.119.165 port=16500
Success creating pid file 11614
[admin2@spspri bin]$
```

The following example shows how to shut down the SPS application. In this case, the SPS proxy is unavailable and SPS is out of service. This command returns 0 when successful.

```
[admin2@spspri bin]$ ./spcmd -R -c sps
Stopping the SPS Monitoring using uid:500 gid:500 for SPS monitor startup.
Killing spsmon pid : 26770
Stopping the SPS components
Initiating shutdown of "SPS"
sipprxd pid(s): 26714 26715 26717 26719 26725 26726 26727 26731
sptlsbroker pid(s): 26757
sptcp pid(s): 26741 26743
spudp pid(s): 26759 26761
Initiating cleanup: "IPC resources"
ipcrm -m 1343488 -m 1572871 -m 1507333 -m 1540102 -m 1409026 -m 1441795 -m 1703947
-m 1671178 -m 1605640 -m 1474564 -m 1376257 -m 1638409 -m 1736716 -s 1310721 -s
1343490 -s 1441797 -s 1474566 -s 1376259 -s 1409028 -s 1638411 -s 1671180 -s 1507335
-s 1540104 -s 1572873 -s 1605642 -s 1703949 -q 1212417 -q 1245186 -q 1277955 -q
1409031 -q 1441800 -q 1507338 -q 1540107 -q 1310724 -q 1343493 -q 1376262 -q 1474569
-q 1572876
The stop operation completed successfully.
[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to start the SPS application. In this case, the SPS proxy restarts and SPS is in service. This command returns 0 when successful. .

```
[admin2@spspri bin]$ ./spcmd -S -c sps
Starting the SPS components using uid:500 gid:500 for startup.
starting: sipprxd sptcpcd sptcpsd sptlsbrokerd spudpcd spudpsd
starting init code. zhiguoc CS1000_5.0_SPS_RPM4 Monday June 04 2007 13:10:27 EDT
zhiguoc
restart string: /opt/nortel/sps/scripts/sps-exec.pl restart
Setting up Semaphores
Proxy (NODE_NAME) nodeName=secondary_sps realm=realmName
Proxy (SW_VERSION) serverType=2 Role=0 DB access=0 0 0 PAssertedIdentitySIP=unknown
PAssertedIdentityTEL=000-000
tls values 2048000 600 2048000 600 1 1
Number of interfaces: 3
I/F udp:0 primary 47.11.119.133:5060 secondary 47.11.119.165:5060
I/F tcp:1 primary 47.11.119.133:5060 secondary 47.11.119.165:5060
I/F tls:2 primary 47.11.119.133:5061 secondary 47.11.119.165:5061
Starting Registrar: 11809
Starting message handler: 11822
Starting Maintenance I/F: 11813
Starting Location: 11812
Building certificate chain for the TLS broker.
Doing ../certs/.
9fcdec2a.r0 => 9fcdec2a.0

Server certificate file not found ... using default server.pem.
Make sure certificates are configured correctly before attempting TLS connections.

Starting router: 11816
Starting UDP Client: 11853
All daemons are running.
Couldn't build certificate chain
Starting the Monitor
The start operation completed successfully.
[admin2@spspri bin]$ using uid:500 gid:500 for SPS monitor startup.
SPS Mon Has Started (/var/run/sps/spsmon.ipid = 11864)
Starting TLS server: 11851 Starting TLS client: 11851
Starting UDP Server: 11855 Starting TCP Client: 11836
[admin2@spspri bin]$
[admin2@spspri bin]$
[admin2@spspri bin]$
Starting TCP Server: 11838
[admin2@spspri bin]$
```

The following example shows how to display the version of the SPS application.

```
[admin2@spspri bin]$ ./spcmd -V -v app

Network Routing Service (5.00.31.01) SPS on Linux.
[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to display the version of the oSIP stack.

```
[admin2@spspri bin]$ ./spcmd -V -v stack

SIP stack (02.02.08) oSIP2 on Linux
[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to display the version of the SPS application and oSIP stack.

```
[admin2@spspri bin]$ ./spcmd -V -v all

Network Routing Service (5.00.31.01) SPS on Linux.
SIP stack (02.02.08) oSIP2 on Linux
[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to swap the active and standby pointers. If the database is changed the command returns 0. If the command is unsuccessful, it returns 1047.

```
[admin2@spspri bin]$ ./spcmd -D -d cutover
0[admin2@spspri bin]$
```

The following example shows how to swap back the active and standby pointers, if the cutover command was successful. If the database is changed the command returns 0. If the command is unsuccessful, it returns 1048.

```
[admin2@spspri bin]$ ./spcmd -D -d revert
0[admin2@spspri bin]$
```

The following example shows how to copy the table from standby to active schema. This command returns 0 only if the cutover command is executed. If this command is unsuccessful, it returns 1048.

```
[admin2@spspri bin]$ ./spcmd -D -d commit
1048[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to copy the table from standby to active schema. This command returns 0 only if the database is changed or the cutover command is run after the database is changed. If this command is unsuccessful, it returns 1048.

```
[admin2@spspri bin]$ ./spcmd -D -d rollback
0[admin2@spspri bin]$
```

The following example shows how to execute cutover and then commit. This command returns 0 if the database is changed. If this command is unsuccessful, it returns 1047.

```
[admin2@spspri bin]$ ./spcmd -D -d commitnow 1047[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to back up the database. This command stores the nrsback.tar file in /var/opt/nortel/sps/backup/tar, and nrsback.bak, which is the previous nrsback.tar. Returns 0 if successful. The result is stored in an XML file in /var/opt/nortel/sps/LOG/backup.xml..

```
[admin2@spspri bin]$ ./spcmd -D -d backup
0[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to restore the database from /var/opt/nortel/sps/backup/tar/nrsback.tar. The result is stored in an XML file in /var/opt/nortel/sps/LOG/restoresum.xml.

```
[admin2@spspri bin]$ ./spcmd -D -d restore
0[admin2@spspri bin]$
[admin2@spspri bin]$
[admin2@spspri bin]$
```

The following example shows how to use the route test tool. Use the following parameters in this command: –m = Service domain, -p = phone context (the L1Domain name, if the DN type is UDP; "L0Domain name.L1Domain name" if DN type is CDP; or null if DN type is E.164 International), -i = originating endpoint IP address, -n = DN to query, -w = schema. The result is stored in an XML file at /var/opt/nortel/sps/LOG/siptest.xml..

```
[admin2@spspri bin]$ ./spcmd -D -d siptest -m ayaya.com -p udp -i 47.11.30.83 - n
2000 -w active
0[admin2@spspri bin]$
```

The following example shows how to perform SIP tests using special route test tools to test the route on the second collaborative server SPS. The results are stored in an XML file at /var/opt/nortel/sps/LOG/.

```
[admin2@spspri bin]$ ./spcmd -D -d sipnametest -m ayaya.com -p cdp.udp -i
47.11.30.83 -w active
0[admin2@spspri bin]$
```

```
[admin2@spspri bin]$ ./spcmd -D -d sipzonetest -m ayaya.com -p cdp.udp -w active
0[admin2@spspri bin]$
```

```
[admin2@spspri bin]$ ./spcmd -D -d sipeptest -m ayaya.com -p cdp.udp -n 2000 -w
active
0[admin2@spspri bin]$
```

The following example shows how to convert the gk 3.0 database to the SPS database. This command copies the gkbackup.tar at /var/opt/nortel/sps/backup/tar. If the gkbackup.tar file does not exist, then the command returns 1078. During the conversion, the nrsback.tar file is also required in /var/opt/nortel/sps/backup/tar.

```
         [admin2@spspri bin]$ ./spcmd -D -d gkcvt -m ayaya.com -l udp
1078 [admin2@spspri bin]$
```

Chapter 14: NRS database commands

appstart dbcom

Syntax: **`appstart dbcom <action>`**

Action can be one of the following:

- start
- stop
- status

Start or shut down the database engine.

⚠ **Warning:**

This will restart or put NRS/PD/BCC out of service.

The following is an example of the output.

```
[admin2@bvwnrspri ~]$ appstart dbcom status

The DB server is running fine ...
DB Failsafe nrssync process running OK.
DB server nrssync process running OK.
[admin2@bvwnrspri ~]$
```

dbcom_passwd

Syntax: **`dbcom_passwd [app] [password]`**

The app can be one of the following:

- pd Personal Directory application dbroot MySQL root user
- nrs NRS application including SPS, GK, NCS, Jboss, Failsafe and Replication
- mgmt Management application including BCC
- dbroot MySQL root user

To change the database password for NRS, PD and Management (BCC) use this command. This command asks for existing password before change. It can only be used by admin2.

⚠ **Warning:**

Database password change has to be done on both primary and secondary NRS, otherwise DB replication would fail.

Note:

Database password change will cause service interruption due to the server restart.

nrsQueryShow

Syntax: **`nrsQueryShow <database selector>`**

database selector can be one of the following:

- 0 Primary database
- 1 Secondary database

This command can be used to list all the routing information in database. It contains detailed information about routing information. It can be used to verify that the routing information added via NRS Manager has been parsed and stored in database.

Note:

This command will give a large amount of data printed to the terminal. Logging should be enabled to capture data.

The following is an example of the output.

```
[admin2@bvwnrspri ~]$ nrsQueryShow 0

=== GK ===
Active DB
Id    DefaultRouteFlag    DnPrefix    PhoneContext    Domain    EpH323Support
EpSipSupport    EpNcsSupport
RouteCost    FqdnType    sHostFqdn    H323Transport    H323Port
AssociatedGwEndpoint    AssociatedRoutingEntry    dn    dn1    dn2    dn3    dn4
dn5    dn6    dn7    dn8    dn9    dn10    dn11    dn12    dn13    dn14    dn15
dn16    dn17    SIPTLSSupport    SIPTLSPort    SIPTCPSupport    SIPTCPPort
SIPUDPSupport    SIPUDPPort    Sips    Persistent    Trustnode
-----------------------------------------------------------------------------------
-----------------------------------------------------------------------------------
-----------------------------------------------------------------------------------
-----------------------------------------------------------------------------------
-----------------------------------------------------------------------------------
-----------------------------------------------------------------------------------
-----------------------------------------------------------------------------
56847    0    558%    bvw.nortel    nortel.com    1    2    1    1    0        0
1719    1   1   558    5    5   8
0    0    1    5060    0    0    0    0    1
56849    0    5174%    bvw.nortel    nortel.com    1    2    1    1    0        0
1719    1    2    5174    5    1    7
4                                                       0    0    1    5060    0
0    0    0    1
56851    0    5173%    bvw.nortel    nortel.com    1    2    1    1    0        0
1719    1    3    5173    5    1    7
3                                                       0    0    1    5060    0
0    0    0    1
56853    0    5178%    bvw.nortel    nortel.com    1    2    1    1    0        0
```

```
1719    1    4    5178    5    1    7
8                                                       0    0    1    5060    0
0    0    0    1
56855    0    5179%    bvw.nortel    nortel.com    1    2    1    1    0        0
1719    1    5    5179    5    1    7
9                                                       0    0    1    5060    0
0    0    0    1
.
.
.
.
.
63147    0    93435071%    bvw.nortel    nortel.com    0    2    0    1    0
0    0    53    0    93435071    9    3    4    3    5    0    7
1                                        0    0    0    0    0    0    0    0    0
63149    0    93435411%    bvw.nortel    nortel.com    0    2    0    1    0
0    0    54    0    93435411    9    3    4    3    5    4    1
1                                        0    0    0    0    0    0    0    0    0
63151    0    93435262%    bvw.nortel    nortel.com    0    2    0    1    0
0    0    56    0    93435262    9    3    4    3    5    2    6
2                                        0    0    0    0    0    0    0    0    0

Total Rows:3153
[admin2@bvwnrspri ~]$
```

nrsRegShow

Syntax: **nrsRegShow**

This command can be used to list all the gateway endpoints which are registered to NRS. It contains detailed information about endpoints such as name, transport protocol, port, SIP mode, etc.

The following is an example of the output.

```
[admin2@bvwnrspri ~]$ nrsRegShow

=== GK ===
Id  RegistrationStatus  RegistrationExpiryTime  UserAgent
ContactAddressQty       Role
-----------------------------------------------------------------------------------
-------------------------
1       1       30      CS1000 SIP GW release_6.0 version_ssLinux-6.00.08
770     0
3       1       30      CS1000 SIP GW release_6.0 version_ssLinux-6.00.08
770     0
4       1       30      CS1000 SIP GW release_6.0 version_ssLinux-6.00.08
770     0
6       1       3600    ipDialog ManiTone 1.2.2 NN rc 21 CS1K UA        513     0
17      1       30      CS1000 SIP GW release_6.0 version_ssLinux-6.00.08
770     0
25      1       30      CS1000 SIP GW release_6.0 version_ssLinux-6.00.08
770     0
27      1       30      CM release_3.0  257     0
27      1       30      MCM release_3.0  257     1
30      1       300     MobilityGateway 513     0

Total Rows:9

Id  Usage1 FqdnType  HostFqdn Transport  Port   Preference  ParentGWEndpoint
ExpiryTime   Role  Sips    ContactStr
```

```
-------------------------------------------------------------------------------------
--------------------------------------------------------------------------------
2616    2       0      47.129.251.192  0       5060    3      27      30     1       0
2729    0       0      47.135.163.81   0       1720    0      5       0      0       0
2731    1       0      47.135.163.81   0       1719    0      5       0      0       0
2733    0       0      47.11.232.100   0       1720    0      3       0      0       0
2735    1       0      47.11.232.100   0       1719    0      3       0      0       0
2737    0       0      47.11.62.20     0       1720    0      4       0      0       0
2739    1       0      47.11.62.20     0       1719    0      4       0      0       0
2741    0       0      47.11.232.31    0       1720    0      1       0      0       0
2743    1       0      47.11.232.31    0       1719    0      1       0      0       0
2747    2       0      47.11.232.31    0       5060    3      1       30     0       0
2749    2       0      47.11.232.31    1       5060    1      1       30     0       0
2751    2       0      47.11.232.50    0       5060    3      17      30     0       0
2753    2       0      47.11.232.50    1       5060    1      17      30     0       0
2755    2       0      47.11.62.50     0       5060    3      25      30     0       0
2757    2       0      47.11.62.50     1       5060    1      25      30     0       0
2763    2       0      47.11.232.100   0       5060    3      3       30     0       0
2765    2       0      47.11.232.100   1       5060    1      3       30     0       0
2767    0       0      47.11.232.160   0       1720    0      29      0      0       0
2769    1       0      47.11.232.160   0       35858   0      29      0      0       0
2771     2       0       47.11.208.76    1       5060    1       6       3600
0        0       sip:3432359@47.11.208.76
2785    2       0      47.11.62.20     0       5060    3      4       30     0       0
2787    2       0      47.11.62.20     1       5060    1      4       30     0       0
2801    2       0      47.249.64.12    1       5060    1      30      300    0       0
2803    2       0      47.129.251.192  0       5060    3      27      30     0       0

Total Rows:24
```

spcmd

Syntax: **`spcmd -D -d failsafe`**

This command is used to force failsafe DB sync. The failsafe DB sync happens automatically every 6 hours, but this command can be used to force the DB sync to failsafe.

Note:

For large databases, this command may cause network burst traffic.

Chapter 15: Linux Base

Troubleshooting

Changes made to /etc/hosts overwritten

Changes to the /etc/hosts by logging on as root and editing the file are not backed up and restored during an update or reinstallation.

Currently, the LinuxBase does not support the addition of explicit hosts, because it provides a way to specify up to three DNS servers (which handle host resolving).

Specify the IP address directly, rather than using a host name.

Adding a host to /etc/hosts

Add a host to /etc/hosts in the event that:

- The DNS servers are not provisioned on the network.
- The DNS servers are unresponsive (server is down).
- The required host is not specified on the DNS servers.
- The IP address cannot be explicitly supplied.

Use the Linux Base Command hostconfig to add the host to /etc/hosts.

How to reset central authentication

From the Call Server PDT shell use the command “resetCAUTH”. The command will not be successful if run remotely since it will require the user to physically access the target for security reasons. Below is an example of the terminal output:

```
TTY 04 SCH MTC BUG OSN   21:52
OVL111 BKGD  44
OVL111  TTY 11      0    gulam
>
```

```
PDT login on /tyCo/0
Username: resetCAUTH

*****************************************************************
* WARNING:  All attempts to use the Authentication Type Reset   *
*           Mechanism are logged. In order to proceed, you will *
*           need physical access to the Call Server.            *
*****************************************************************


Do you want to proceed (yes/no):      SEC026 31/03/09 21:52:47 1525061
OPRDATA: Password override mechanism was used to gain access to the switch  yes
You have 60 seconds to put some media into the  CF2: Drive and press ENTER:
*   AUD393 31/03/09 21:52:52 1525062
OPRDATA: 00007029 07349381 07349381 00000000 00000000
Checking the drive, please wait...
/cf2/  - Volume is OK
### Successfully switched to local authentication.

*****************************************************************
* REMINDER:  Don't forget to remove any media in the            *
*            CF2: Drive                                         *
*            and replace the backup media if necessary.         *

*****************************************************************
### Perform EDD to synchronize new authentication type setting to all elements.

Username:
*** SEC038 31/03/09 21:53:15 1525063                                  OPRDATA:
Security domain membership has been revoked.  (Centralized authenticati  on is now
disabled.)

*   AUD393 31/03/09 21:53:16 1525064
OPRDATA: 00007029 07349381 07349381 00000000 00000000
SEC026 31/03/09 21:53:16 1525065
```

LinuxBase command reference

appinstall

Syntax:

`appinstall --test <dir>`

Install Avaya applications. Appinstall is a powerful generic installation utility. It can also be used to initiate a Co-resident Installation (where both Mgmt and NRS applications can be installed on the same system).

Note:

User will be prompted to provide root password to execute this command

Use the --test option only for testing. Use the <dir> option to install applications from a specified directory instead of CD.

appstart

Available starting from load LinuxBase-4.91.32

Syntax:

```
appstart [start, stop, restart, status, --help] <app_name command>
```

Start, stop, or restart Avaya applications.

Note:

User will be prompted to provide root password to execute this command

appstart [application_name | applications_list] <command>

The command must be invoked under the systemadmin role account. appstart can be invoked with the following commands:

- start: “appstart start” – start all the Avaya applications.
- stop: “appstart stop” – stop all the Avaya applications
- restart: “appstart restart” – restart (stop and then start) all the Avaya applications.
- status: “appstart status” – get status all the Avaya application.
- reload: “appstart reload” – Reload system data and restart applications.
- --help: “appstart --help” – Outputs manual

Without an application name appstart performs operation with Avaya applications. In order to control Base applications, or the list of the particular applications, one of the additional parameters must be specified:

- baseapps - Perform specified command with Base applications.
- monit - Call monit utility with specified command.
- name_of_one_particular_application - Perform specified command with specified application.
- list_of_applications_separated_by_spaces - Perform specified command with specified list of applications.

When appstart is started it tries to take the SEM_APPSTART semaphore. The appstartup script can be executed in three ways:

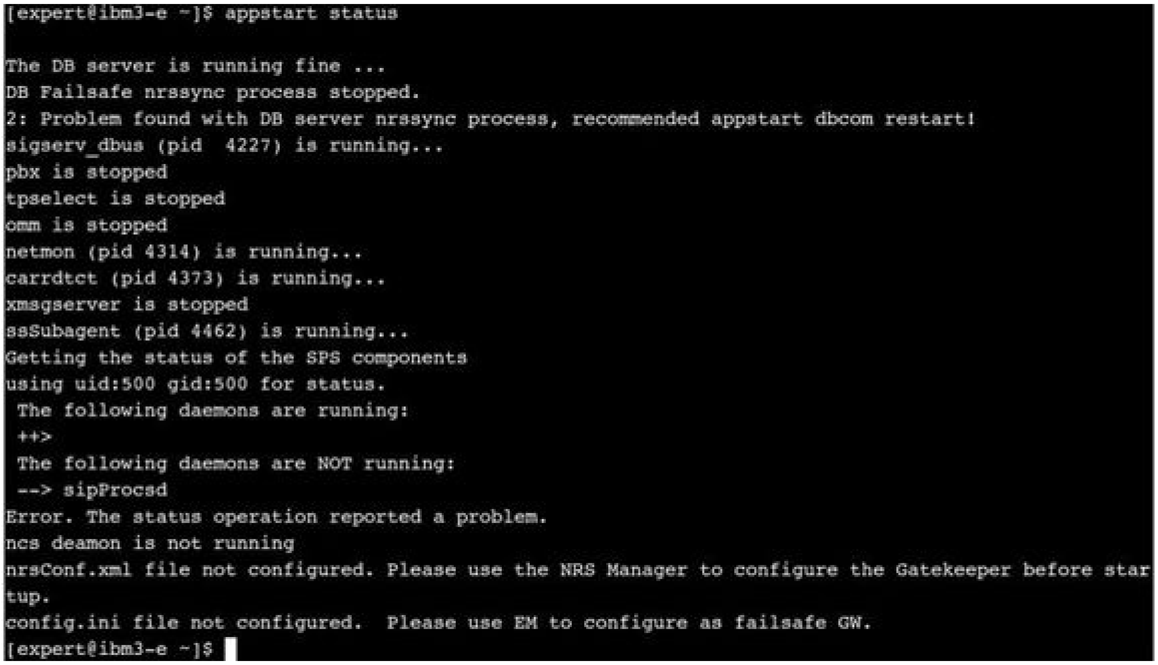
- user invokes appstart command – in this case /opt/nortel/base/appinstall/bin/appstartup is executed directly. If the SEM_APPSTART can not be taken, then appstart fails
- /opt/nortel/base/appinstall/bin/monitappstartup is executed – in this case appstart was executed by monit. Semaphore is not taken at all
- /opt/nortel/base/appinstall/bin/appstartwait is executed – in this case appstart waits for 300 seconds. If during that time the SEM_APPSTART semaphore can not be taken then appstart fails.

When appstart finishes the SEM_APPSTART semaphore is released.

Examples of usage:

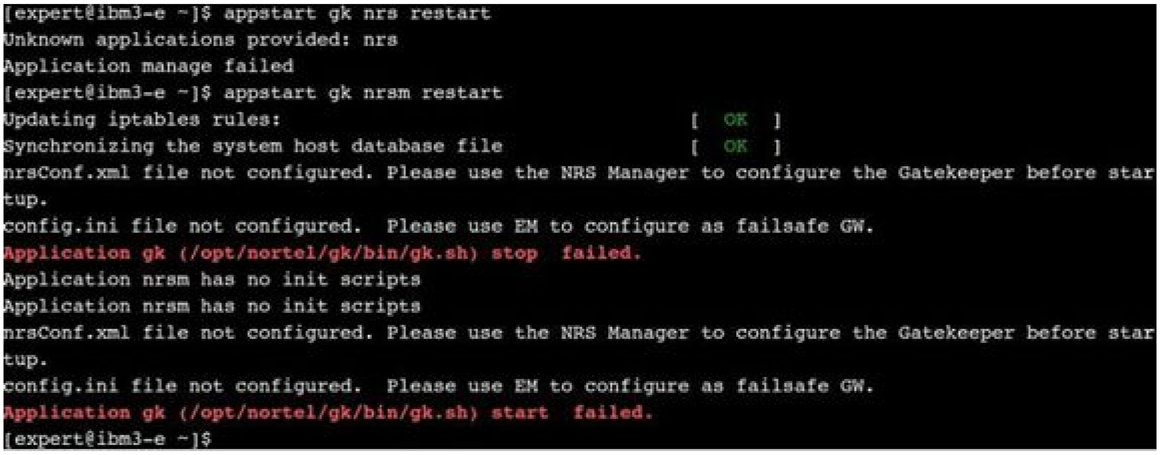
- appstart start - Start all Avaya applications
- appstart baseapps stop - Stop all Base applications
- appstart sps stop - Stop the sps application only
- appstart status - Get status of all Avaya applications
- appstart reload - Reload system data and restart applications
- appstart gk <parameter> - Run the gk startup script with <parameter> parameter
- appstart gk tps <parameter> - Run the gk and tps startup scripts with <parameter> parameter. Parameter can be <start>, <stop>, <restart>, <status> or <reload>
- appstart monit <parameters> - Run monit startup program with <parameters> parameters

When an application is started the appropriate firewall rules are applied for that application. Accordingly, when application is stopped, then the previously applied rules are removed. Read the firewall expert guide for more information. The appstart command is closely associated with the monit utility which checks the state of an application on a periodical basis. If the application died for some reason, then monit starts it up. Read the expert guide on monit for more information.



```
[expert@ibm3-e ~]$ appstart status

The DB server is running fine ...
DB Failsafe nrssync process stopped.
2: Problem found with DB server nrssync process, recommended appstart dbcom restart!
sigserv_dbus (pid  4227) is running...
pbx is stopped
tpselect is stopped
omm is stopped
netmon (pid 4314) is running...
carrdtct (pid 4373) is running...
xmsgserver is stopped
ssSubagent (pid 4462) is running...
Getting the status of the SPS components
using uid:500 gid:500 for status.
 The following daemons are running:
 ++>
 The following daemons are NOT running:
 --> sipProcsd
Error. The status operation reported a problem.
ncs deamon is not running
nrsConf.xml file not configured. Please use the NRS Manager to configure the Gatekeeper before star
tup.
config.ini file not configured.  Please use EM to configure as failsafe GW.
[expert@ibm3-e ~]$
```

Figure 1: appstart status



```
[expert@ibm3-e ~]$ appstart gk nrs restart
Unknown applications provided: nrs
Application manage failed
[expert@ibm3-e ~]$ appstart gk nrsm restart
Updating iptables rules:                                [  OK  ]
Synchronizing the system host database file             [  OK  ]
nrsConf.xml file not configured. Please use the NRS Manager to configure the Gatekeeper before star
tup.
config.ini file not configured.  Please use EM to configure as failsafe GW.
Application gk (/opt/nortel/gk/bin/gk.sh) stop  failed.
Application nrsm has no init scripts
Application nrsm has no init scripts
nrsConf.xml file not configured. Please use the NRS Manager to configure the Gatekeeper before star
tup.
config.ini file not configured.  Please use EM to configure as failsafe GW.
Application gk (/opt/nortel/gk/bin/gk.sh) start  failed.
[expert@ibm3-e ~]$
```

Figure 2: appstart gk nrs restart

appVersionShow

Syntax:

`appVersionShow`

Print the server application software version.

```
[admin2@hp2 ~]$ appVersionShow
APP_INSTALLED=CS1000 Element Manager
APP_VERSION=4.90-08
sunAm                        4.90-08
```

```
Jboss-Quantum                4.90-08
privateCA                    4.90-08
emWeb                        4.90-08
isclient                     4.90-08
bcc                          4.90-08
Snmp-Daemon-TrapLib          4.90-08
solid                        4.90-08
```

basefirewallconfig

Syntax:

`basefirewallconfig <options>`

Configures firewall rules.

Options are:

- help - print this help
- start - start firewall
- restart - restart firewall
- stop - stop firewall
- show - show rules added by this command
- showall - show all firewall rule
- add <add options> - add rule

  Add options are:

  - -proto - the protocol of the rule to check
  - -port - the destination port
  - -srcport - the source port
  - -icmptype - this allows specification of the ICMP type
  - -if - name of an interface via which a packet was received
  - -host - source hostname specification
  - -eth - number of the eth interface via which a packet was received
  - -dscp - DSCP field within the TOS field in the IP header
- del <rule number> - delete rule [use basefirewallconfig show to get rule_number]

Note:

All modified rules are permanent. They will survive a reboot.

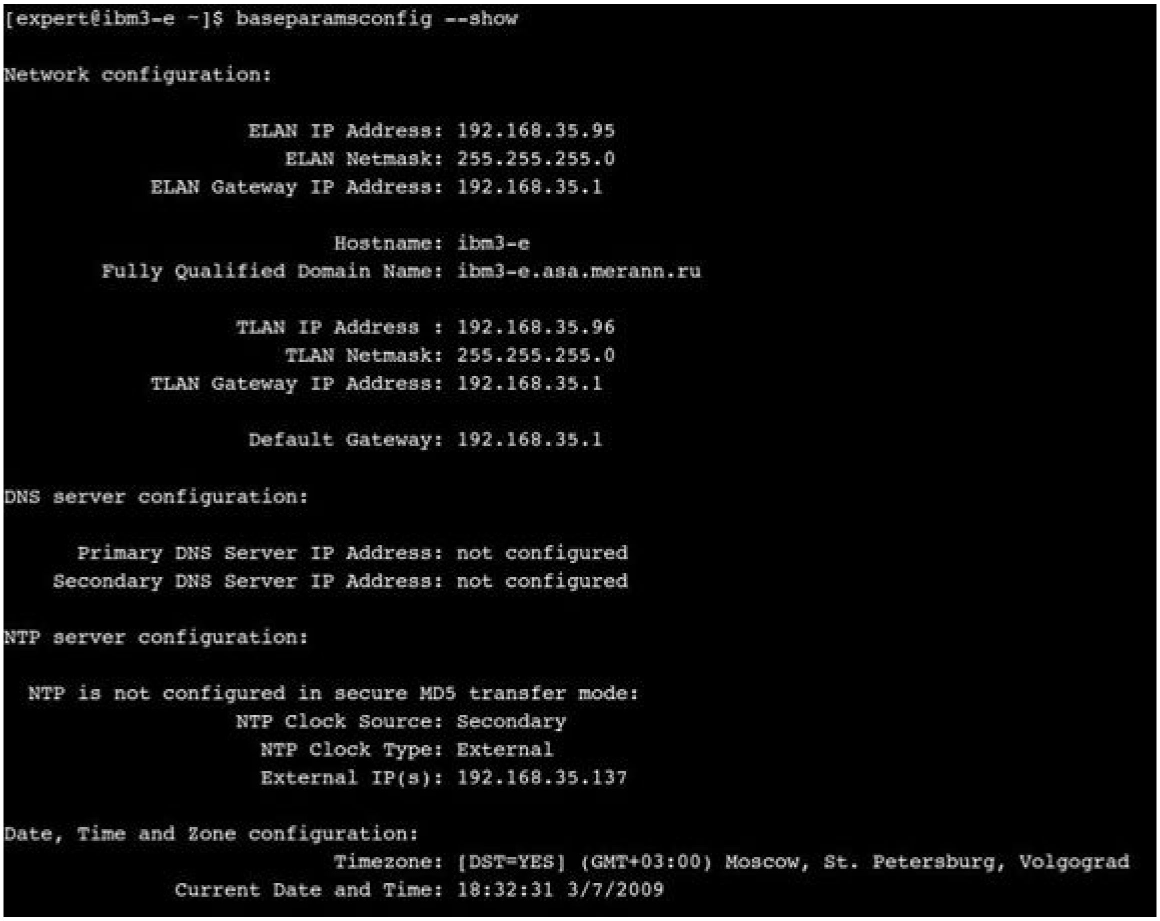
baseparamsconfig

Syntax:

`baseparamsconfig [--show]|[--help]`

baseparamconfig command configures the kernel-resident network interfaces and DNS settings. System reboot is required to activate the configuration changes. baseparamconfig with “--show” option prints existing configuration. baseparamconfig without parameters starts interactive session and asks required parameters for network and DNS setting. Network parameters are located in the /etc/sysconfig/network, /etc/sysconfig/network-scripts/ifcfg-eth0, /etc/sysconfig/network-scripts/ifcfg-eth1 and /etc/hosts configuration files. DNS settings define 'primaryDNS', 'secondaryDNS' and 'tertiaryDNS' IPs at etc/hosts file. See “dnsconfig” command for more details.

baseparamconfig with the “--help” parameter shows information about the command.



```
[expert@ibm3-e ~]$ baseparamsconfig --show

Network configuration:

                    ELAN IP Address: 192.168.35.95
                       ELAN Netmask: 255.255.255.0
            ELAN Gateway IP Address: 192.168.35.1

                           Hostname: ibm3-e
        Fully Qualified Domain Name: ibm3-e.asa.merann.ru

                   TLAN IP Address : 192.168.35.96
                       TLAN Netmask: 255.255.255.0
            TLAN Gateway IP Address: 192.168.35.1

                    Default Gateway: 192.168.35.1

DNS server configuration:

      Primary DNS Server IP Address: not configured
    Secondary DNS Server IP Address: not configured

NTP server configuration:

  NTP is not configured in secure MD5 transfer mode:
                   NTP Clock Source: Secondary
                     NTP Clock Type: External
                     External IP(s): 192.168.35.137

Date, Time and Zone configuration:
                           Timezone: [DST=YES] (GMT+03:00) Moscow, St. Petersburg, Volgograd
              Current Date and Time: 18:32:31 3/7/2009
```

Figure 3: baseparamsconfig --show

baseVersionShow

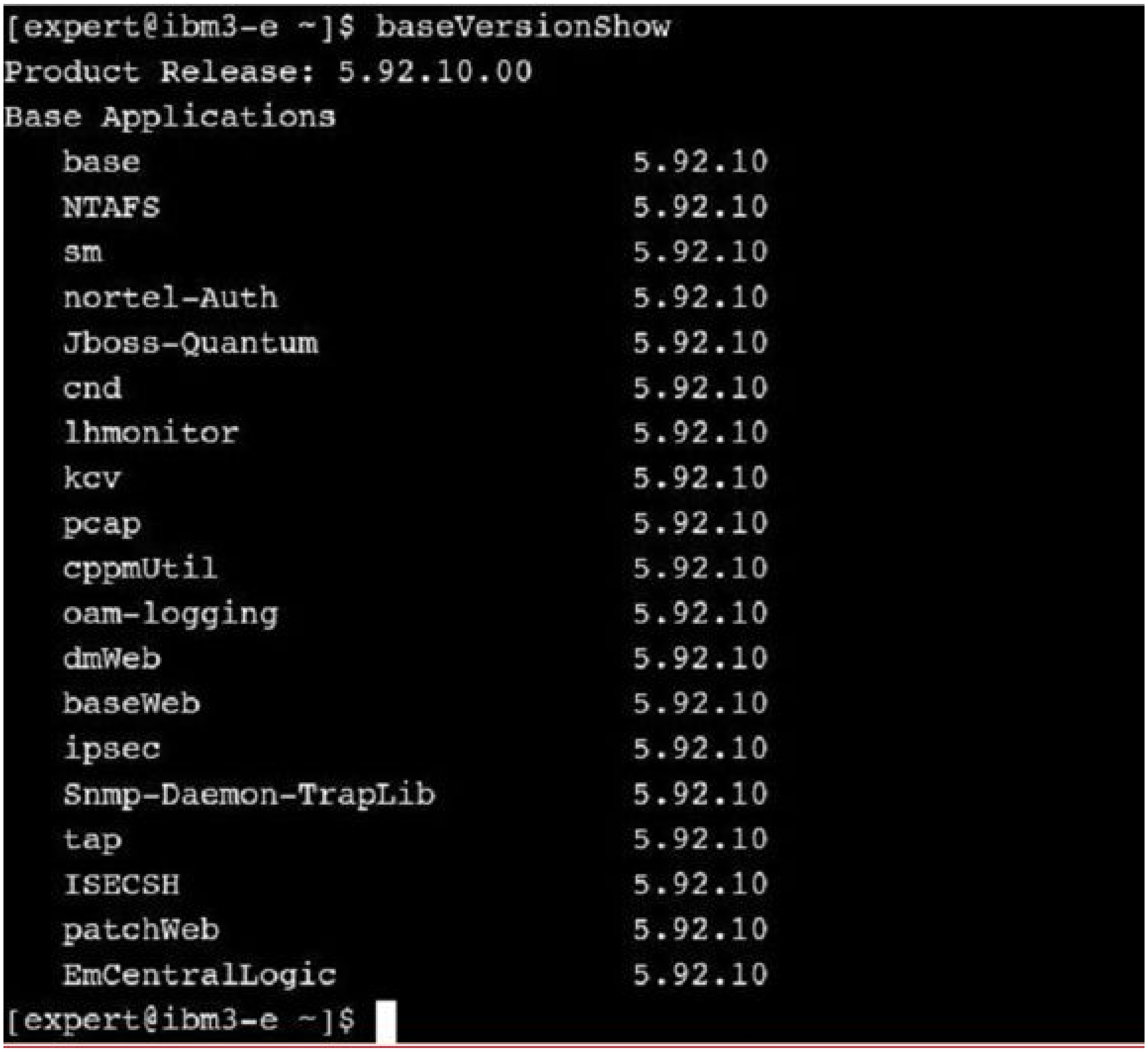
Syntax:

```
baseVersionShow [--help]
```

Print the server base software version

baseVersionShow without parameters gives the name of the installed base configuration and Base Applications names and versions list. Configuration name and version are located in the /admin/nortel/install/installedbaseappconfig file. List of Base Applications is defined in /admin/nortel/install/baseappsinstall. xml configuration file under appropriate “supportedConfig” section.

baseVersionShow with “--help” parameter shows information about the command.



```
[expert@ibm3-e ~]$ baseVersionShow
Product Release: 5.92.10.00
Base Applications
   base                             5.92.10
   NTAFS                            5.92.10
   sm                               5.92.10
   nortel-Auth                      5.92.10
   Jboss-Quantum                    5.92.10
   cnd                              5.92.10
   lhmonitor                        5.92.10
   kcv                              5.92.10
   pcap                             5.92.10
   cppmUtil                         5.92.10
   oam-logging                      5.92.10
   dmWeb                            5.92.10
   baseWeb                          5.92.10
   ipsec                            5.92.10
   Snmp-Daemon-TrapLib              5.92.10
   tap                              5.92.10
   ISECSH                           5.92.10
   patchWeb                         5.92.10
   EmCentralLogic                   5.92.10
[expert@ibm3-e ~]$
```

Figure 4: baseVersionShow

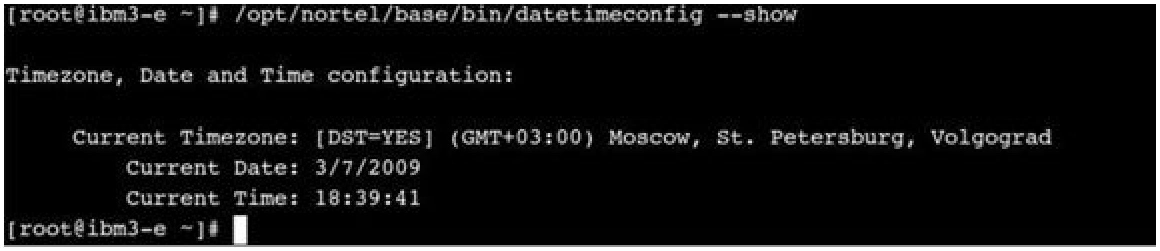
datetimeconfig

Syntax:

`datetimeconfig [--show]|[--help]`

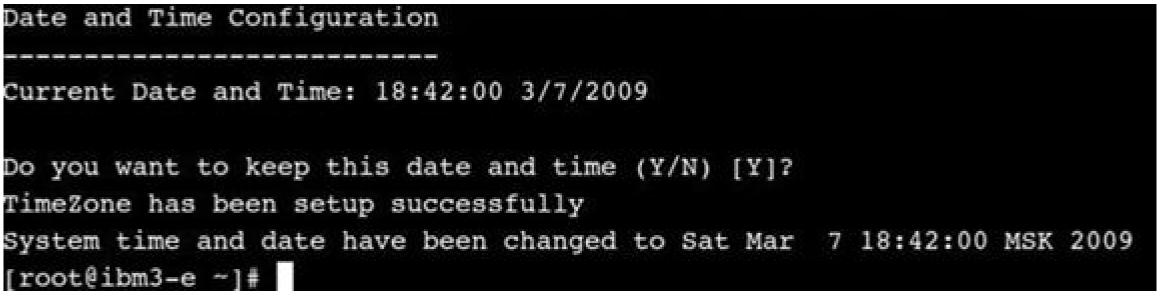
datetimeconfig with “--show” option prints existing settings.

datetimeconfig with “--help” parameter shows information about the command.



```
[root@ibm3-e ~]# /opt/nortel/base/bin/datetimeconfig --show

Timezone, Date and Time configuration:

     Current Timezone: [DST=YES] (GMT+03:00) Moscow, St. Petersburg, Volgograd
         Current Date: 3/7/2009
         Current Time: 18:39:41
[root@ibm3-e ~]#
```

Figure 5: datetimeconfig --show



```
Date and Time Configuration
---------------------------
Current Date and Time: 18:42:00 3/7/2009

Do you want to keep this date and time (Y/N) [Y]?
TimeZone has been setup successfully
System time and date have been changed to Sat Mar  7 18:42:00 MSK 2009
[root@ibm3-e ~]#
```

Figure 6: Date and Time Configuration

dnsconfig

Syntax:

`dnsconfig <options>`

Configure DNS servers.Configure DNS servers. If there are no CLI arguments provided, then user will be prompted to enter them.

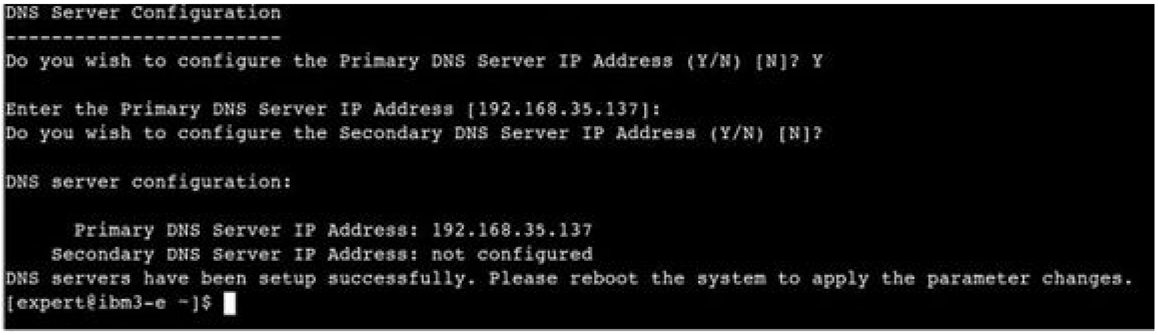
Options are: [-dns1 <ip>] - Primary DNS Server IP Address [-dns2 <ip>] - Secondary DNS Server IP Address [-dns3 <ip>] - Tertiary DNS Server IP Address

The command must be invoked under the systemadmin role account. dnsconfig supports the following options:

- “--show” - Shows the current network settings.
- “-- help” - Prints help message and exit. Please use “man dnsconfig” to get more information about the command.
- “--unconfigure” - Unconfigures DNS settings.
- “-dns1 <DNS IP>" - Specifies the first DNS IP.
- “-dns2 <DNS IP>" - Specifies the second DNS IP. To specify the second DNS IP, the first DNS IP must be defined.
-

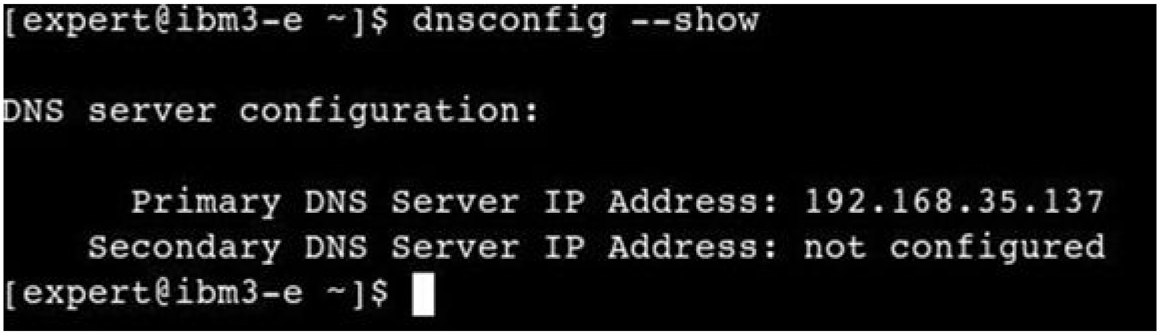
Note:

“dnsconfig” command can be invoked during high traffic load with “--help” and “--show” options only. Reconfiguring DNS settings could affect ongoing processes.



```
DNS Server Configuration
------------------------
Do you wish to configure the Primary DNS Server IP Address (Y/N) [N]? Y

Enter the Primary DNS Server IP Address [192.168.35.137]:
Do you wish to configure the Secondary DNS Server IP Address (Y/N) [N]?

DNS server configuration:

      Primary DNS Server IP Address: 192.168.35.137
    Secondary DNS Server IP Address: not configured
DNS servers have been setup successfully. Please reboot the system to apply the parameter changes.
[expert@ibm3-e ~]$
```

Figure 7: DNS Server Configuration



```
[expert@ibm3-e ~]$ dnsconfig --show

DNS server configuration:

      Primary DNS Server IP Address: 192.168.35.137
    Secondary DNS Server IP Address: not configured
[expert@ibm3-e ~]$
```

Figure 8: dnsconfig --show

ecnconfig

Syntax:

`ecnconfig 'on'|'off'|'show'|'help'`

Handle ECN feature - enable, disable and show status.

Note:

User will be prompted to provide root password to execute this command.

Note:

This command takes effect until the next application restart (for example, appstart restart).

faillog

Syntax:

faillog [-a | -r]

Options

- -a Shows incorrect login attempts.
- -r Resets user counters.

hostconfig

Syntax:

hostconfig <parameter>

Configures hosts in the hosts entry table

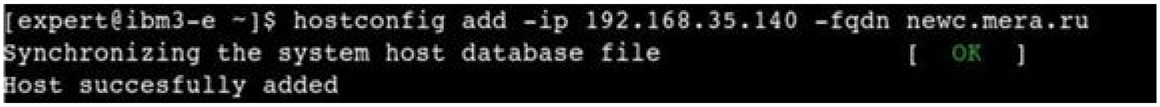
The command must be invoked under the systemadmin role account. hostconfig supports the following options:

- “--show” - Shows all the hosts configured with the “hostconfig” command. The index number printed can also be used to delete hosts.
- “--help” - Prints help message and exits. Use “man hostconfig” to get more information.
- “add <parameters>" - Adds a host to the system host database. The host can be added either using 2 parameters, or 3 parameters. Use “man hostconfig” to get more information.
- "del <parameters>" - Deletes a host from the system host database. A host can be deleted in one of 3 ways, using 2 parameters, 3 parameters or an index number.
-

Use “man hostconfig” to get more information.

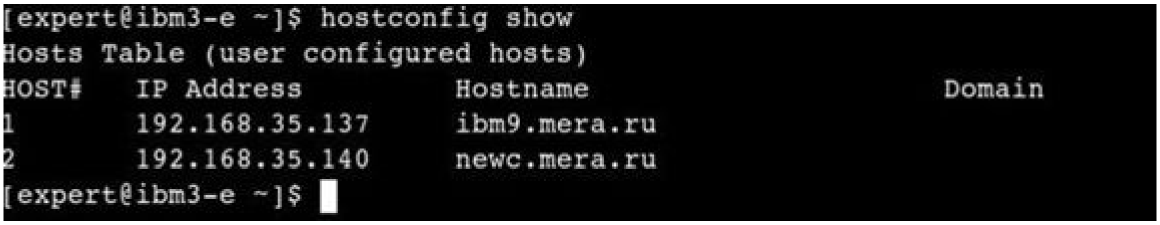
```
Hostconfig MAN page:
HOSTCONFIG(1)                                User Contributed Perl
Documentation                               HOSTCONFIG(1)
NAME
hostconfig - configure host in the system host database
SYNOPSIS
hostconfig  [-h]
[add [-ip <ip> ] [-host <hostname>] [-domain <domain>]]
[add [-ip <ip>] [-fqdn <fqdn>]]
[del [-ip <ip> ] [-host <hostname>] [-domain <domain>]]
[del [-ip <ip>] [-fqdn <fqdn>]]
[del [index number]]
[show]

DESCRIPTION
Hostconfig is a system level command used to modify the system hosts database.  This
command allows users to add and delete hosts to the system.  It can also be used to
```

```
all the hosts configured on the system using this command.

OPTIONS
-h      Print a brief help message and exit.

add parameters
Add a host to the system host database.  The host can be added either using 2
parameters or 3 parameters.

For 2 pararmeters the IP-Addres and the FQDN (Fully Qualified Domain Name = Hostname
+ Domain) are required,              the entry in the database will look as follow:
IP-Address     FQDN

For 3 parameters the IP-Address, the Hostname and the Domain Name are required, the
entry in the database               will look as follows:
IP-Address     FQDN     Hostname

del parameters
Delete a host from the system host database.  A host can be delete in one of 3 ways,
using 2 parameters, 3               parameters or an index number.

For 2 pararmeters the IP-Addres and the FQDN (Fully Qualified Domain Name = Hostname
+ Domain) are required.

For 3 parameters the IP-Address, the Hostname and the Domain Name are required.

For the index number, this is the host number printed by the show option.
show    Show all the hosts configured using hostconfig.  The index number printed
can also be used to delete hosts.

Hosts are show in the following format:
Host#     IP-Address     Hostname     Domain
perl v5.8.5
2007-11-01                                          HOSTCONFIG(1)
```



```
[expert@ibm3-e ~]$ hostconfig add -ip 192.168.35.140 -fqdn newc.mera.ru
Synchronizing the system host database file               [  OK  ]
Host succesfully added
```

Figure 9: hostconfig add - ip



```
[expert@ibm3-e ~]$ hostconfig show
Hosts Table (user configured hosts)
HOST#   IP Address        Hostname                      Domain
1       192.168.35.137    ibm9.mera.ru
2       192.168.35.140    newc.mera.ru
[expert@ibm3-e ~]$
```

Figure 10: hostconfig show

ifconfig

Syntax:

`ifconfig interface [aftype] options | address`

Ifconfig command is used to configure the kernel-resident network interfaces. During system boot time it sets up interfaces as necessary. This command can be used during debugging or when system tuning is needed. ifconfig may be used to check if network interfaces are working correctly, as well as to enable/disable interfaces, or to temporarily change interface parameters.

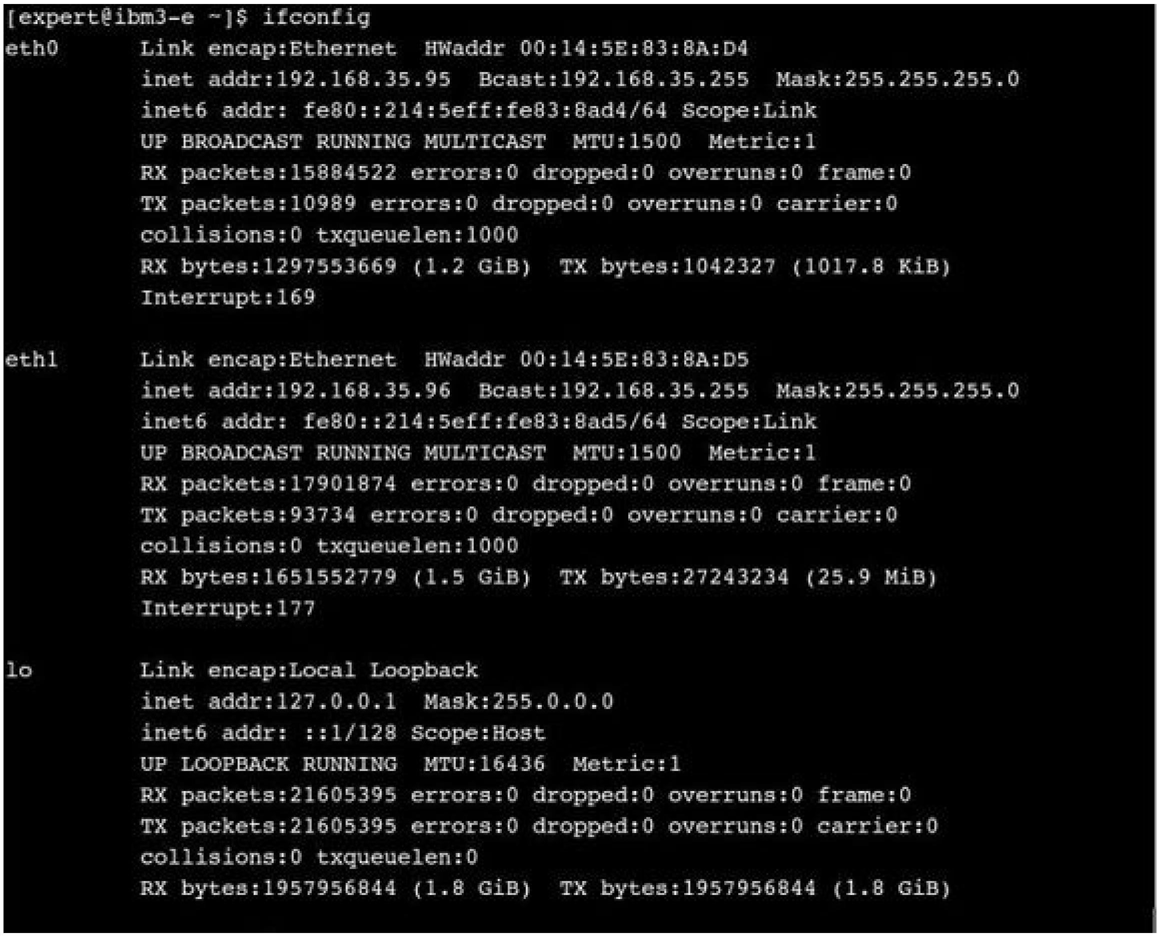
If no arguments are given, ifconfig displays the status of the currently active interfaces. If a single interface argument is given, it displays the status of the given interface only; if a single argument is given, it displays the status of all interfaces, even those that are down. Otherwise, it configures an interface.

Useful options:

- Interface - The name of the interface. Currently eth0 used for ELAN interface and eth1 used for TLAN interface.
- Up - This flag causes the interface to be activated. It is implicitly specified if an address is assigned to the interface.
- Down - This flag causes the driver for this interface to be shut down.
- [-]promisc - Enable or disable the promiscuous mode of the interface. If selected, all packets on the network will received by the interface. May be useful for capturing packets.
- -a - Displays all interfaces.

Note:

Use of this command will cause network service availability interruptions. Do not use on live system other than during planned maintenance windows.



```
[expert@ibm3-e ~]$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:14:5E:83:8A:D4
          inet addr:192.168.35.95  Bcast:192.168.35.255  Mask:255.255.255.0
          inet6 addr: fe80::214:5eff:fe83:8ad4/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:15884522 errors:0 dropped:0 overruns:0 frame:0
          TX packets:10989 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1297553669 (1.2 GiB)  TX bytes:1042327 (1017.8 KiB)
          Interrupt:169

eth1      Link encap:Ethernet  HWaddr 00:14:5E:83:8A:D5
          inet addr:192.168.35.96  Bcast:192.168.35.255  Mask:255.255.255.0
          inet6 addr: fe80::214:5eff:fe83:8ad5/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:17901874 errors:0 dropped:0 overruns:0 frame:0
          TX packets:93734 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1651552779 (1.5 GiB)  TX bytes:27243234 (25.9 MiB)
          Interrupt:177

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:21605395 errors:0 dropped:0 overruns:0 frame:0
          TX packets:21605395 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:1957956844 (1.8 GiB)  TX bytes:1957956844 (1.8 GiB)
```

Figure 11: ifconfig

pins

Syntax:

`pins [-all] pins <patch id>`

Put a patch in service

```
[admin2@arkh-linux-ibm ~]$ pins 0
Patch handle: 0 Performing the installation:
Activating patch. Please wait...
The patch has been activated successfully
You must restart target application
```

plis

Syntax:

plis

Show detailed information about a patch.

```
[admin2@arkh-linux-ibm ~]$ plis 0
Handle:           0
Filename:         /var/opt/nortel/patch/p11115_1.el4
Dependency List: None
Dependency List Issue:
Patch name:      11115
Ref. num.:       ISS1:1OF1
PRS number:      Q00000000
Engineer:        Alex Arkhipov
Release:         LINUX-4.91.12
Created:         Tue Oct 31 12:16:44 2006
Loaded:          Tue Oct 31 12:17:08 2006
Patch is out of service
Out of service date: N/A
Patch info of element #1:
Patch name:              p11115_1_1.jar
Patch type:              JAR
Application to patch:    base:4.91.12
md5sum of the patch:     3a06b3a949012eafbe7f06f070f28d90
```

pload

Syntax:

`pload <patch file>` Pload patch <patch file> from current or patch directory **`pload -all`** Pload all patches from patch directory

Load patch into system database

```
[admin2@arkh-linux-ibm bin]# pload -h
Pload patcher. Load patch into system

[admin2@arkh-linux-ibm ~]$ pload p11115_1.el4
Patch p11115_1.el4 Patch successfully installed.
Handle: 0
```

poos

Syntax:

`poos -app "application" poos <patch id>`

Put patch out of service

```
[admin2@arkh-linux-ibm ~]$ poos 0
Patch handle: 0 Performing the uninstallation:
Deactivating patch. Please wait...
The patch has been deactivated successfully.
You must restart target application.
```

pout

Syntax:

`pout <handle>`

Unload patch from system database

> **Note:**
> patch has to be out of service to be unloaded

```
[admin2@arkh-linux-ibm ~]$ pout -h
Unload patch.

[admin2@arkh-linux-ibm ~]$ pout 0
Patch 0 has been removed successfully.
```

pstat

Syntax:

`pstat <handle>` for information about patch with handle <handle> **`pstat -l, --list`** to list all installed in-service patches **`pstat -a, --all`** to list all installed patches in detail

Show list of installed patches .

```
[admin2@arkh-linux-ibm ~]$ pstat
In system patches:1
Patch handle 0
Filename /var/opt/nortel/patch/p11115_1.el4
Patch release version: 4.91.12
Reference number: ISS1:1OF1
Patch is out-of-service
Patch category: EMG
Patch special instructions: no
Patch type: JAR
Patch members:
p11115_1_1.jar

[admin2@arkh-linux-ibm ~]$ pstat -l
In service patches: 1
PAT#  PRS/CR     PATCH REF#  NAME      DATE      FILENAME      SPECINS  TYPE
APPLICATION
0     Q00000000  ISS1:1OF1   p11115_1  31/10/06  p11115_1.el4  no       JAR   base:
4.91.12
```

reboot

Syntax:

`reboot`

Reboot the whole system.

Note:

User will be prompted to provide root password to execute this command.

Available starting from load LinuxBase-4.91.32

routeconfig

Syntax:

`routeconfig command [options]`

Commands are: add/del/show. When command is show, there is no options. When command is add or del, options are: -net <ip> - <ip> : network ip address -netmask <mask> - <mask>: network mask -dev <eth0/eth1/..> - eth0 - ELAN; eth1 - TLAN; routeconfig -h prints this help

Show, manipulate the IP routing table

The following example shows the output for the various uses of the routeconfig command.

```
[admin2@asa-hp4-e ~]$ routeconfig show
You have to have the root privilege to execute this command.
Password for root:
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
192.168.35.0    0.0.0.0         255.255.255.0   U     0      0        0 eth0
192.168.35.0    0.0.0.0         255.255.255.0   U     0      0        0 eth1
169.254.0.0     0.0.0.0         255.255.0.0     U     0      0        0 eth1
0.0.0.0         192.168.35.1    0.0.0.0         UG    0      0        0 eth0

[admin2@asa-hp4-e ~]$ routeconfig add -net 192.168.35.0 -netmask=255.255.255.255 -
dev eth1
You have to have the root privilege to execute this command.
Password for root:
Done!

[admin2@asa-hp4-e ~]$ routeconfig show
You have to have the root privilege to execute this command.
Password for root:
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
192.168.35.0    0.0.0.0         255.255.255.255 UH    0      0        0 eth1
192.168.35.0    0.0.0.0         255.255.255.0   U     0      0        0 eth0
192.168.35.0    0.0.0.0         255.255.255.0   U     0      0        0 eth1
169.254.0.0     0.0.0.0         255.255.0.0     U     0      0        0 eth1
0.0.0.0         192.168.35.1    0.0.0.0         UG    0      0        0 eth0

[admin2@asa-hp4-e ~]$ routeconfig del -net=192.168.35.0 -netmask=255.255.255.255 -
dev=eth1
You have to have the root privilege to execute this command.
Password for root:
Done!

[admin2@asa-hp4-e ~]$ routeconfig show
You have to have the root privilege to execute this command.
Password for root:
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
192.168.35.0    0.0.0.0         255.255.255.0   U     0      0        0 eth0
```

```
192.168.35.0    0.0.0.0         255.255.255.0   U     0      0        0 eth1
169.254.0.0     0.0.0.0         255.255.0.0     U     0      0        0 eth1
0.0.0.0         192.168.35.1    0.0.0.0         UG    0      0        0 eth0

Note: When eth0 options provided ELAN gateway will be used, eth1 - means TLAN
gateway will be used.
```

Note:

User will be prompted to provide root password to execute this command.

swVersionShow

Syntax:

`swVersionShow`

Print the server software version

```
admin2@hp2 ~]$ swVersionShow
APP_INSTALLED=CS1000 Element Manager
APP_VERSION=4.90-08
sunAm                        4.90-08
Jboss-Quantum                4.90-08
privateCA                    4.90-08
emWeb                        4.90-08
isclient                     4.90-08
bcc                          4.90-08
cs1000-linuxbase                  4.90.08
Snmp-Daemon-TrapLib          4.90-08
solid                        4.90-08
```

sysbackup

Syntax:

`sysbackup {–r | -s | -b | -c } | [--help]`

Where: -r remove sysbackup task from schedule -s show sysbackup task schedule settings -b execute one-time backup -c setup a backup schedule --help Print help message and exit.

Perform system backup (both base and applications)

This command allows users to define the storage to backup data (USB device or SFTP server), and choose the type of backup (one-time backup or scheduled). It uses the crontab mechanism to perform scheduled backup.

Run `sysbackup -b` to execute one-time backup. The user will be invited to choose back up to USB device or backup via SFTP to a remote server:

```
$ sysbackup -b
1. Backup to USB device.
2. Backup to SFTP server.

Enter your choice (q for exit): 2
If user chooses SFTP backup he/she will be invited to input remote backup server
```

```
parameters:

Enter the secure FTP server's IP address: 47.11.44.2
Enter the SFTP login: user1
Enter the SFTP password:
Enter the remote SFTP directory: /home/user1

Remote Configuration File Validation
--------------------------------------------------
SFTP server IP: 47.11.44.2
SFTP userid: user1
SFTP password: **********
SFTP directory: /home/user1

Is this information correct (Y/N) [Y]?

After confirmation the backup archive will be created:

Backup started. Please wait...
INFO Initializing
ThreadPoolExecutor
INFO Result=
Quantum backup restore completed
Successfully. Status=Quantum backup restore completed.
Performing Base Backup.
Checking for available patches in /var/opt/nortel/patch
Base Backup
Completed
Backup archive with name cppm2hardening2009_
03_0216_
39_32.tar.gz and size 640947 bytes was generated.
Backup operation may take a long time.
Do you want to continue (Y/N) [Y]? Y

To continue backup operation input `yes` - the backup archive will be provided to
backup server, operation will be completed:

Operation in progress. Please wait.
Read 638976 of 640947 bytes
Backup complete.
```

Scheduled backup:

Run `sysbackup -c` to execute scheduled backup. The user will be invited to choose backup to USB device or backup via SFTP to a remote server (as in case of one-time backup):

```
$ sysbackup -c
1. Backup to USB device.
2. Backup to SFTP server.
Enter your choice (q for exit): 1

For example in this case we have chosen USB backup (the backup USB device should be
plug-in at that time). The first time using USB device for backup it should be
formatted:

This disk must be formatted to use it as a backup storage.
Do you want to format it (Y/N) [Y]?

After formatting select the schedule of the backup (for example every Friday at
23:00):

Do you want to use default backup time (midnight Sunday) (Y/N) [Y]? N

The value in the brackets is the default one. Use asterisk if you are going not to
```

```
use this parameter.

Enter the minutes (059) [0]: 0
Enter the hour (023) [0]: 23
Enter day of month (131) [1]: *
Enter month (112) [1]: *
Enter day of week (17) [7]: 5

After that every Friday at 23:00 the backup will be started on the system until the
backup schedule will be reset by the following command:

sysbackup -r

To review your backup schedule the following command need to be executed:

$ sysbackup -s
Backup configured:
Minute: 0
Hour: 0
Month: *
Day of month: *
Day of week: 7
Star symbol(*) means any number.
```

Example usage:

```
$ sysbackup -b
1. Backup to USB device.
2. Backup to SFTP server.

Enter your choice (q for exit): 2
Enter the secure FTP server's IP address: 47.11.44.2
Enter the SFTP login: user1
Enter the SFTP password:
Enter the remote SFTP directory: /home/ user1
Remote Configuration File Validation
--------------------------------------------------
SFTP server IP: 47.11.44.2
SFTP userid: user1
SFTP password: *********
SFTP directory: /home/ user1

Is this information correct (Y/N) [Y]?
Backup started. Please wait...
INFO Initializing ThreadPoolExecutor
INFO Result=Quantum backup restore completed
Successfully. Status=Quantum backup restore completed.
Performing Base Backup.
Checking for available patches in /var/opt/nortel/patch
Base Backup Completed
Backup archive with name cppm2-
hardening2009_03_0216_39_32.tar.gz and size 640947 bytes was generated.
Backup operation may take a long time.
Do you want to continue (Y/N) [Y]? Y
Operation in progress. Please wait.
Read 638976 of 640947 bytes
Backup complete.
```

syslogLevelSet

Syntax:

syslogLevelSet [--help] PROCESS TASK LEVEL

Sets syslog level for a defined application

Example: syslogLevelSet linuxbase Base DEBUG Options: PROCESS, TASK - Process and task for which changing level. To obtain list of allowable processes with their tasks start syslogShow command without arguments. LEVEL - New level. Available levels:

- NONE
- EMERG
- ALERT
- CRIT
- ERROR
- WARNING
- NOTICE
- INFO
- DEBUG

```
--help - Print this help message and exit.

To manage logging of Linux base system you should specify PROCESS parameter as
‘linuxbase’.

The parameter TASK specifies subsystem. There are five subsystems in Linux base
system.
They are:
```

- Base - common Linux base subsystem
- Base_Appinstall - application installation subsystem
- Base_Appstartup - application management subsystem
- Base_Backup - backup/restore subsystem
- Base_Patch - patching subsystem

```
The parameter level sets what kind of information is logged per the list below.
Setting a subsystem to a level allows messages of that level and lower to log. By
default, all subsystems are set to INFO.
```

- NONE - None, no logging
- EMERG - Emergency, system is unusable
- ALERT - Alert, action must be taken immediately
- CRIT - Critical, critical conditions
- ERROR - Error, error conditions
- WARNING - Warning, warning conditions
- NOTICE - Notice, normal but significant condition
- INFO - Info, informational
- DEBUG - Debug, debug level messages

```
To change information for multiple subsystems, the command is entered multiple
times.
```

Note:

activation DEBUG mode could cause excessive disk space usage.

syslogShow

Syntax:

`syslogShow [--help] [PROCESS]...`

Shows the current values of syslog levels

Options: PROCESS... List of processes to show. If none given, show all processes. --help Print this help message and exit. To view current syslog levels of Linux base system you should specify PROCESS parameter as ‘linuxbase’.

Defined log level settings are located in the file: /etc/opt/nortel/base/log/cs1000_syslog.ini

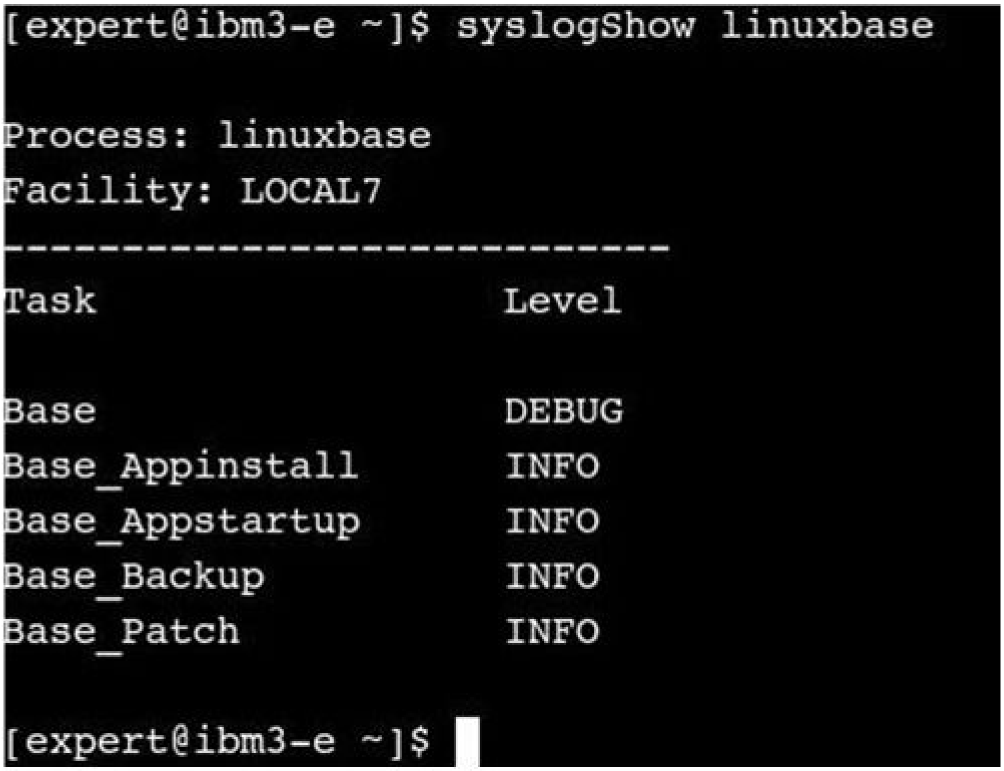
Log files are placed at /var/log/nortel/ folder. The log file for Linux base system is linuxbase.log. It is plain text file, which can be viewed by different tools. For example cat, less, head, tail, vi/ vim, emacs, etc. Please refer to command documentation how to use specific command.

Viewing log examples

cat /var/log/nortel/linuxbase.log | grep base_monit.pm - display messages from base_monit.pm.

less /var/log/nortel/linuxbase.log - view all messages per page..

tail -f /var/log/nortel/linuxbase.log - print all messages in real time..



```
[expert@ibm3-e ~]$ syslogShow linuxbase

Process: linuxbase
Facility: LOCAL7
----------------------------
Task                    Level

Base                    DEBUG
Base_Appinstall         INFO
Base_Appstartup         INFO
Base_Backup             INFO
Base_Patch              INFO

[expert@ibm3-e ~]$ 
```

Figure 12: syslogShow

sysrestore

Syntax:

`sysrestore [--help]`

Restore data from the backup archive.

Note:

All applications will be stopped before restoration and started after.

This script retrieves the backup archive from the storage (USB device or SFTP server), restores application backed up data to the default backup directory and executes the restore scripts for installed applications (if they are defined).

All applications should be stopped before executing of the restore operation (this is done automatically as the first step of restore operation). After that user will be able to select target for uploading the backup archive:

1. Recover from USB device. 2. Recover from SFTP server. Enter your choice (q for exit): 2

If the recovery from SFTP have been chosen the user should provide the access parameters to the remote backup archive: IP address of the backup server, password, path where backup archive should be:

Enter the secure FTP server's IP address [47.11.44.2]: Enter the SFTP login [user1]: Enter the SFTP password: Enter the remote SFTP directory [/home/ user1]:

After confirmation of the input parameters the list of the available backup archives under this path will be provided to user. One of backup archives should be chosen for continuation of the restore operation:

Please select one of files (0 means exit): 1) cppm2hardening2009_03_0216_39_32.tar.gz
Select (0,11):1

Example usage:

```
$ sysrestore
All Avaya and Base applications will be stopped.
Do you want to continue (Y/N) [Y]?
Stopping ISECSHd: [ OK ]
Shutting down commonTrapServer: [ OK ]
Shutting down configProcess: [ OK ]
Shutting down snmpd: [ OK ]
lhmonitor has been stopped
Stopping slapd: [ OK ]
Stopping jbossd:[ OK ]
Stopping sm.
Stopping NTAFS: [ OK ]
1. Recover from USB device.
2. Recover from SFTP server.
Enter your choice (q for exit): 2
Enter the secure FTP server's IP address [47.11.44.2]:
Enter the SFTP login [user1]:
Enter the SFTP password:
Enter the remote SFTP directory [/home/ user1]:
Remote Configuration File Validation
--------------------------------------------------
SFTP server IP: 47.11.44.2
SFTP userid: user1
SFTP password: *********
SFTP directory: /home/ user1
Is this information correct (Y/N) [Y]?

Retrieving file listing from 47.11.44.2...
Please select one of files (0 means exit):
1) cppm2hardening2009_03_0216_39_32.tar.gz
Select (0,11):1
Operation in progress. Please wait.
Read 638976 of 640947 bytes
Your security server will be restarted now.
The restart process may take up to 10 minutes to complete, after which you may
establish a web browser session and log in with your administrative user credentials.
Stopping sshd: [ OK ]
Starting sshd: [ OK ]
There are no patches to restore.
Backup system wide data found.
Synchronizing the system host database file [ OK ]
Updating iptables rules: [ OK ]
Restore completed.
Updating iptables rules: [ OK ]
Synchronizing the system host database file [ OK ]
Starting NTAFS: [ OK ]
Starting sm:
VerifySMDataStoreIsValid 1.0
```

```
SM Datastore is valid.
Data files checked.
InitSMSemaphore 1.0
InitSMSemaphore: semaphore already exists
Semaphore files checked.
Starting Jboss daemon procss
Starting slapd: [ OK ]
lhmonitor has been started
dsDetect return ok.
Update secDev.info successfully.
cppmInfo: cppmInfo completed successfully
/admin/nortel/install/installedconfig not found. Skipping it.
Successfully updated baseOs.properties
Starting snmpd: [ OK ]
Starting configProcess: [ OK ]
Starting commonTrapServer: [ OK ]
Starting ISECSHd: [ OK ]
Updating iptables rules: [ OK ]
Synchronizing the system host database file [ OK ]
```

upgrade

Syntax:

`upgrade`

Perform backup, show the "Insert CD" message and reboot the machine

```
$ upgrade
You have to have the root privilege to execute this command.
Password for root:

This tool will perform Linux Base upgrade. Before the upgrade it will back up all
data.

Do you agree? (Y/N) [n]? y

Please insert Linux Base CD for upgrade, then press any key
```

Log Files Locations

There are many log files generated by the Linux Base and the various applications running on a Linux Target. These log files may be used to troubleshoot a problem live on switch during a problem occurrence, or can be used later to do a postmortem analysis. For new problems the typical starting point would be to look at the ss_common.log and linuxbase.log (Attatch these to new trouble tickets or escalations) Next would be to zero in on the application logs, or base subsystem logs as appropriate.

Linux Base Logs

The Linux Base logs are found in the /var/log/nortel/linuxbase.log. The SS common logs are in: /var/log/nortel/ss_common.log. The ss_common log files are archived when they get too large. Old versions can be found in the folder: /var/log/nortel/old_logs/. Other base logs can be found in: /admin/nortel/base/log

Several Linux Base subsystems exist:

- Base
- Base_Appinstall
- Base_Appstartup
- Base_Backup
- Base_Patch

To manage logging, use the baselogLevelShow and baselogLevelSet commands.

baselogLevelShow

Syntax:

baselogLevelShow

```
[admin2@arkh-linux-ibm ~]$ /opt/nortel/base/bin/baselogLevelShow
Subsystem          Level
===============    =======
Base               INFO
Base_Appinstall    INFO
Base_Appstartup    INFO
Base_Backup        INFO
Base_Patch         INFO
/opt/nortel/base/bin/baselogLevelSet
```

baselogLevelSet

Syntax:

baselogLevelSet <subsystem><priority>

Subsystems are: Base,Base_Appinstall,Base_Appstartup,Base_Backup,Base_Patch
Priorities are: ALERT, CRIT, DEBUG, EMERG,ERROR,INFO,NONE,NOTICE,WARNING.

Application Logs

Log files for various applications are predominantly found under: /var/log/nortel.

The following are examples of log file locations for various applications:

- Jboss: /var/log/nortel/Jboss-Quantum/log
- Element Manager /var/log/nortel/mgmt/em.log
- BCC: /var/log/nortel/mgmt/bcc.log
- Patch Manager: /var/log/nortel/mgmt/pm.log
- Base Manager: /var/log/nortel/mgmt/bm.log
- NRS Manager: /var/log/nortel/mgmt/nrsm.log
- NRS: /var/log/nortel/nrs.log

Co-resident Call Server Logs

Log files and other CS files on the Co-resident CS and SS Linux Targets are under: /var/opt/nortel/cs and: /var/log/nortel.

The cs_console.log keeps a record of the Call Servers Console which can be useful for several debugging situations. The following are examples of log file locations for various applications:

- LOG000000.RPT: /var/opt/nortel/cs/fs/e/rpt
- cs_console.log: /var/log/nortel
- callserver.log: /var/log/nortel
- cs_extra.log: /var/log/nortel

Using logs to troubleshoot

Log files can be used to troubleshoot live systems using the tail command. You can use the tail command in several ways, but the following are the most common uses. From a Linux shell:

- **`tail –f <logfilename>`** Gives a constantly updating snap shot of the last 10 log file entries
- **`tail <logfilename>`** provides a one time shapshot of the last 10 log file entries.

The following is an example for the Element Manager logs:

```
 [admin2@bvwbuffyss1 ~]$ tail /var/log/nortel/mgmt/em.log
2009-04-24 20:20:39,857 INFO [centralLogic] (?:?) [EmCentralConfigService]
[CentralLogic] Em
CentralConfigService is started!! - SUCCESS
2009-04-24 20:23:07,077 INFO [centralLogic] (?:?) [EmCentralConfigService]
[CentralLogic] Em
CentralConfigService is stopped!! - SUCCESS
2009-04-24 20:23:07,077 ERROR[centralLogic] (?:?) [EMCentralConfigReceiver]
[CentralLogic] Socket closed
Connection to CP - FAIL
2009-04-24 20:23:32,444 INFO [centralLogic] (?:?) [EmCentralConfigService]
[CentralLogic] Em CentralConfigService is started!! - SUCCESS
2009-05-04 11:45:12,043 INFO [centralLogic] (?:?) [EmCentralConfigService]
[CentralLogic] Em
CentralConfigService is started!! - SUCCESS
[admin2@bvwbuffyss1 ~]$
```

For more information about the tail command, use **tail –h**:

```
 [admin2@bvwucm avaya]$ tail --h
Usage: tail [OPTION]... [FILE]...
Print the last 10 lines of each FILE to standard output.
With more than one FILE, precede each with a header giving the file name.
With no FILE, or when FILE is -, read standard input.
Mandatory arguments to long options are mandatory for short options too.
--retry    keep trying to open a file even if it is inaccessible when tail starts
or if it becomes inaccessible later; useful when following by name, i.e., with --
follow=name
-c, --bytes=N     output the last N bytes
-f, --follow[={name|descriptor}]                           output appended data as
the file grows;                        -f, --follow, and --follow=descriptor
are                            equivalent
-F same as --follow=name --retry
-n, --lines=N  output the last N lines, instead of the last 10
--max-unchanged-stats=N
with --follow=name, reopen a FILE which has not changed size after N (default 5)
iterations to see if it has been unlinked or renamed (this is the usual case of
rotated log files)
--pid=PID            with -f, terminate after process ID, PID dies
-q, --quiet, --silent    never output headers giving file names
-s, --sleep-interval=S   with -f, sleep for approximately S seconds (default 1.0)
between iterations.
-v, --verbose            always output headers giving file names
--help     display this help and exit
--version  output version information and exit
```

If the first character of N (the number of bytes or lines) is a plus sign (+), print beginning with the Nth item from the start of each file; otherwise, print the last N items in the file. N may have a multiplier suffix: b 512, k 1024, m 1024*1024.

With --follow (-f), tail defaults to following the file descriptor, which means that even if a tail'ed file is renamed, tail continues to track its end. This default behavior is not desirable to track the actual name of the file, not the file descriptor (for example, log rotation). To track the actual name of the file, use --follow=name. This causes tail to track the named file by reopening it periodically to see if it was removed and recreated by another program.

Report bugs to <bug-coreutils@gnu.org>.[admin2@bvwucm avaya]$

Chapter 16: Tools for Linux

PCAP tools for Linux

PCAP Tools for Linux is a network packet capture utility to aid in troubleshooting network and protocol issues that may arise in the field. PCAP is intended to simpify the use of tethereal by providing a simple menu-driven interface at the CLI, or a remote GUI-driven interface on a Windows-based machine. It is implemented as set of wrapper scripts around Wireshark/ Ethereal to provide interface compatibility with PCAP Tools for VxWorks and the PCAP Capture Control remote GUI to eliminate the need for retraining support personnel. See the PCAP for VxWorks expert guide for more information on the PCAP Capture Control GUI.

Only a limited subset of the PCAP for VxWorks commands are available on Linux.

The following commands are available:

- pcapStart
- pcapStop
- pcapRestart
- pcapConfig
- pcapConfigShow
- pcapStatus
- pcapHelp
- pcapCtrlStart
- pcapCtrlRemove

The following limitations and requirements apply to the use of this tool:

- PCAP for Linux can only be run by a user belonging to the ‘maintadmin’ group.
- Only one instance of PCAP can be active at any time.
- Capture files cannot be retrieved while PCAP is running.
- Any changes in the PCAP configuration will only take effect after restarting PCAP.
- Wireshark must be enabled since the Linux Hardening framework disables it by default. A user belonging to the ‘secuirtyadmin’ group must run “harden nettools on” to enable it
- Tethereal will show up when running ps –ef
- Capture files are stored in /var/opt/nortel/dfoTools/pcap by default.

Linux PPP Tool

This tool allows the customer to make a point-to-point connection through the serial port on COTS Linux boxes. The connection can be on either ttyS0 or ttyS1. To set up PPP connection on COTS Linux server, issue the command ppp using the following arguments: (Use ppp –h to get the help menu.)

Usage: ppp [OPTION] Initiate a PPP connection.

- -l LOCAL_IP Set local IP address, by default is set to 137.135.132.1
- -r REMORE_IP Set remote IP address, by default is not set
- -f Use hardware flow control signals during PPP connection
- -lcp-restart n Set the LCP restart interval (retransmission timeout) to n seconds (default 3).
- -lcp-max-configure n Set the maximum number of LCP configure-request transmissions to n (default 10).
- -stop Kill ppp if there is hanged ppp.

Log information about the PPP session can be found at: /var/log/nortel/base_others.log

Linux Modem Configuration Tool

This tool can be used to configure a modem on a Linux COTS platform. There are basically two possible uses: (Use modemConfig –h for help menu.)

on turns on modem connection possibility on a serial port. off takes off modem configuration from /etc/inittab so modem cannot be used on a serial port anymore.

Typical output messages:

- "Warning: modem already configured." Means that there is no need to use the tool in order to turn on modem connection possibility because it is already done.
- "Warning: the serial port is not configured for modem connectivity." Means that there is no need to turn off modem connection possibility due to it is already turned off.
- “Done.” Means the action successfully performed.

Usage: modemConfig <on|off> [OPTION] Configure the serial port for either modem or direct connection.

on: Configure the serial port for modem connectivity off: Configure the serial port for a direct connection (no modem).

Options -tty N : apply settings to ttySN port where N either 0 or 1. (Default: 0) -init "<init string>" : modem initialization string.

Log information about the modem configuration tool can be found at: /etc/inittab

Chapter 17: SIP Line Gateway command reference

The following commands can be run from the linux prompt on the SIP Line Gateway (SLG) hardware (COTS) platforms. The commands and variables in this chapter are listed in alphabetical order.

slgSetShowAll

Syntax: **`slgSetShowAll`**

Briefly list all users on this SLG

Note:

This command will go through the registration list to print out details of users. It should not impact operation. However it may print too many entries on the screen.

The following is an example of the output.

```
[admin2@bvw1 ~]$ slgSetShowAll
UserID           TN               Clients  Calls  SetHandle
---------------  ---------------  -------  -----  ---------
sipl3420        104-00-02-00     1        0      0x322abcdc
```

Related Commands

slgSetShowByUID

slgSetShowByUID

Syntax: **`slgSetShowByUID <userid>`**

List more detailed information for a given user. Use when detailed information for a given user is required, for example key map, registration status, contact info, phone type, user-agent data, etc..

The following is an example of the output.

```
[admin2@bvw1 ~]$ slgSetShow “sipl3420”
UserID           TN               Clients  Calls  SetHandle
---------------  ---------        -------  -----  ---------
sipl3420     104-00-02-00        1      0  0x322abcdc
StatusFlags = Registered Controlled KeyMapDwld SSD
FeatureMask =
Current Client = 0, Total Clients = 1
Num  IP:Port:Trans             Type  UserAgent                       x-nt-guid
RegDescrip  RegStatus  PbxReason        SipCode

0      47.11.181.132:5060 :udp  SIPN  PCC 4.0.398
Login"      2          OK                   200

Key  Func  Lamp  Label           0    3     0     3420
1    6     0
2    2     0     453420
17   16    0
18   18    0
19   27    0
20   19    0
21   52    0
22   25    0
24   11    0
25   30    0
26   31    0
value = 0 = 0x0
```

Related Commands

slgSetShowByUID

slgShow

Syntax: **slgShow**

Verify the status of SLG, including AML link number and SLG trace setup.

The following is an example of the output.

```
[admin2@bvw1 ~]$ slgShow

===== General    ======
SLG State            = AppReady
Total User Registered = 1

===== AML Info   ======
hAppBlk     TaskName         Tid     LinkState      NumRetry  LinkNum
Trace
0x18e3aa8   SLG              0xfb00  Up             0         33       0

===== Trace Info ======
No trace enabled
value = 0 = 0x0
```

Related Commands

slgAmlShow slgTraceShow

Chapter 18: Co-Resident Call Server command reference

Unless otherwise specified, the following commands can be run from the linux prompt on the Co-resident Call Server and Signaling Server (Co-res CS and SS) hardware platform. The commands and variables in this section are listed in alphabetical order.

appstart cs

Syntax: **`appstart cs status`**

Issue this command to check CS application status.

The following is an example of the output.

```
[admin2@bvw1 ~]$ appstart cs status l
Updating iptables rules: [  OK  ]
Synchronizing the system host database file [  OK  ]
vxell (pid 27756) is running...
csProxy (pid 27884) is running...
cshwd (pid 27938) is running...
```

Related Commands

none

calibrate_delay1us

Syntax: **`calibrate_delay1us<flag>`**

Calibrates the delay6us() and us100Delay() functions and prints info about the calibration, to get information about the system clock accuracy. This command can be issued from the call server pdt shell. Enter “csconsole” at the Linux prompt and then use <cntr>pdt to enable the pdt shell and log in using a pdt2 (Level 2) user and password. (Note, use <CTRL>AD to return to Linux Prompt.)

For this command, set flag = 0, to run the calibration in silent mode with no printout, and set flag = 1 to run the calibration in verbose mode with the results printed out. This function will be called at call server application startup.

```
pdt> calibrate_delay1us 1
Calibration of delay1us()...
----------------------------
Each request:       100 us
Minimum latency:      0 us
Latency as average:   1 us
Final latency value:  0 us
value = 27 = 0x1B
pdt> calibrate_delay1us
value = 0 = 0x0
pdt>
```

Related Commands

none

rpt

This command can be issued from the Linux shell to open the call server report log files for viewing. This command supports the classic pdt logfile commands such as rdtail, rdgo, rds, etc.

The following is an example of the output.

```
[admin2@cores avaya]$ rpt
Reading /var/opt/nortel/cs/fs/e/rpt/LOG00016.RPT
Newest File Name     : "/var/opt/nortel/cs/fs/e/rpt/LOG00016.RPT"
File being viewed    : "/var/opt/nortel/cs/fs/e/rpt/LOG00016.RPT"
Capacity in bytes    : 1000000
Capacity in records  : 980
Number of records = 19
Oldest record = 0, logged at 23/10/2008 11:35:32
Newest record = 18, logged at 23/10/2008 13:54:04
Current Record = 18
Display Increment = 10 records

Please enter rpt command rdhelp for options, quit(q) to exit rdhelp
RD Report Display Tool
RD COMMANDS:
rdhelp          -Browse help information
rdhelp [1]
[1] - turn on display of examples
rdopen          -Open a report log file
rdopen [filename]
Opens report log filename for browsing.
rdgo            -Go to a specific record
rdgo [N]
Go to absolute record number N.
rd              -Display records
rd [S] [R] [1]
Go S steps and display R records.
```

```
[1] - turn on display stack information if available
Both S and R may be positive or negative.
rds             -Display records with symbolic dump
rds [S] [R]
Like rd but with a symbolic dump.
rdshow          -Show general log file info
rdshow
Shows general information about the current log file
and the current rd settings
rdall           -Display all records
rdall [1]
Displays (without symbolic dump) all records.
[1] - turn on display stack information if available
rdtail          -Display newest records
rdtail [N] [1]
Displays (without symbolic dump) newest N records.
[1] - turn on display stack information if available
rdhead          -Display oldest records
rdhead [N] [1]
Displays (without symbolic dump) oldest N records.
[1] - turn on display stack information if available
rdnext          -Open the next log file
rdnext []
Open the next log file.
rdprev          -Open the previous log file
rdprev []
Open the previous log file.
EXAMPLES:
rdopen                 - set rd-file at "rpt.log"
rdtail 20              - show 20 newest reports
rdhead 20               - show 20 oldest reports
rdhead 20 1             - show 20 oldest reports and their stack if avilable
rd                      - show [next] [20] reports
rd -30, 10              - go back 30 and show 10 subsequent reports
rd -30, -10             - go back 30 and show 10 previous reports
rd -20                  - show 20 previous reports
rd                      - show [20] [previous] reports

Please enter rpt command rdhelp for options, quit(q) to exit
rdtail 3
[452] 24/03/2009 11:20:35 SRPT0164 PDT: Task (tr35f37c30) being deleted,
tid=0x35f30130.
[451] 24/03/2009 11:19:35 SEC0007 USR=hms, SRC=Rlogin 47.11.32.29:41991 DST=PDT,
EVT=RLOGIN Login Request, RESULT=success
[0450] 24/03/2009 11:19:09 LOG0003 pdtShell03: generr**** No valid RADIUS responses
received

Please enter rpt command rdhelp for options, quit(q) to exit q
admin2@cores avaya]$
```

Related Commands

none

vxellHwdShow

Syntax: **`vxellHwdShow`**

This command can be issued from VxELL CS pdt shell. Enter “csconsole” at the Linux prompt and then use <cntr>pdt to enable the pdt shell and log in using a pdt2 (Level 2) user and password. (Note, use <CTRL>AD to return to Linux Prompt.)

```
pdt> vxellHwdShow


Watchdog is enabled and Running
Configured level1 timeout   = 3 s
Configured level2 timeout   = 32 s
Time left to level1 timeout = 2100 ms
Number of level1 timeout since last cold start = 0
value = 47 = 0x2F
pdt>
pdt> vxellHwdDisable
value = 0 = 0x0
pdt>
pdt> vxellHwdShow
Watchdog is disabled
Configured level1 timeout   = 3 s
Configured level2 timeout   = 32 s
Time left to level1 timeout = 2329 ms
Number of level1 timeout count since last cold start = 0
value = 47 = 0x2F
pdt>
```

Related Commands

none

Chapter 19: NRS Manager

The Network Routing Service (NRS) provides routing services to both SIP and H.323-compliant devices. The NRS allows customers to manage a single network dialing plan for SIP, H.323, and mixed SIP/H.323 networks.

The NRS is associated with the following applications:

- Linux-based NRS dependency on UCM security domain: There must be network connectivity to the UCM Primary Security Service during the installation of the NRS Manager.
- The NRS can operate in stand-alone mode, without being connected to the Call Server.

Troubleshooting Checklist

The following sections list various failure scenarios from the User Interface (UI) where the user is repeatedly not able to run operations from the UI.

Unable to launch NRS Manager

- Check NRS Manger installation. This can be done by checking if all the following NRS Manger artifacts are present in the mentioned location:
    a. nrsm.war is present at path: /opt/nortel/Jboss-Quantum/server/default/nortel/deploy/
    b. nrsm folder is created at path: /var/opt/nortel
    c. nrsm folder is created at path: /etc/opt/nortel
    d. nrsm log file is created at path: /var/log/nortel/mgmt
    e. nrsmWeb_6_0 folder is created at path: /var/opt/nortel/Jboss-Quantumwork/jboss.web/localhost/
- Restart the Jboss.
    a. Login to CLI.
    b. Execute the command: appstart Jboss-Quantum restart

Unable to start Services

- For GateKeeper Service, check if the Primary TLAN configured in NRS server settings is proper:
  a. Go to CLI.
  b. Execute: appstart sps status/start/stop/restart.
  c. Execute: appstart gk status/start/stop/restart.
  d. Execute: appstart ncs status/start/stop/restart.

If the above commands fail, contact technical support for further assistance.

Unable to add Domains, Endpoints, Etc…

- Check if StandBy database is selected.
- Check if SPS and GK services are enabled.

Unable to perform Auto Backup

- Click System > System Wide Settings.
- Check if FTP site IP, path, username and password are correct.
- Check if the FTP site enabled checkbox is checked.
- Go to CLI and traverse to path: /opt/nortel/sps/bin/
- Execute the command: ../spcmd -D -d backup
- It is advised to give backup time with a difference of at least 5mins from the current (server) time.

Unable to add Route

- Check if StandBy database is selected.
- Check if Service Domain, L1 Domain, L0 Domain and Endpoints are configured.
- Check if mandatory fields are filled in and the data is within the specified limits.

Unable to perform H.323 routing test

- Check if the Gatekeeper Service is enabled.
- Check if 'DN to query' exists.
- Go to CLI.
- Traverse to path: /opt/nortel/groups/systemadmin/bin/
- Execute the command: nrsGKTestQuery <DN>,<DNType>,<originatingEPName>,<DBname>
    - If it returns 0, the test is successful.
    - If it returns a non zero Error Code, it’s an error.

If a routing entry is present in the database, the routing test will pass.

If it still fails, contact technical support for further assistance.

Unable to perform SIP routing test

- Check if the Gatekeeper Service is enabled.
- Check if 'DN to query' exists.
- Go to CLI.
- Traverse to path: /opt/nortel/groups/systemadmin/bin/
- Execute the command: nrsGKTestQuery <DN>,<DNType>,<originatingEPName>,<DBname>
    - If it returns 0, the test is successful.
    - If it returns a non zero Error Code, it’s an error.

If a routing entry is present in the database, the routing test will pass.

If it still fails, contact technical support for further assistance.

Unable to perform Restore operation

- Check if the SPS service is enabled.
- Go to CLI and traverse to path: /opt/nortel/sps/bin/
- Execute the command: ./spcmd -D -d restore

If the command fails, contact technical support for further assistance.

Unable to perform Backup operation

- Check if the SPS service is enabled.
- Go to CLI and traverse to path: /opt/nortel/sps/bin/
- Execute the command: ./spcmd -D -d backup

If the command fails, contact technical support for further assistance.

Unable to perform GK/NRS Data Upgrade operation

- Go to CLI and traverse to path: /opt/nortel/sps/bin/
- Execute the command: ./spcmd -D -d backup

If the command fails, contact technical support for further assistance.

Unable to perform Database operations

- Go to CLI and traverse to path: /opt/nortel/sps/bin/
- Execute the command: ./spcmd -D -d cutover
- Execute the command: ./spcmd -D -d revert
- Execute the command: ./spcmd -D -d commit
- Execute the command: ./spcmd -D -d rollback

If the command fails, contact technical support for further assistance.

Unable to search an Endpoint

Check if the Endpoint ID being searched, exists.

Search can only be done for Endpoints that exist.

Multi-user scenarios

All bulk operations such as Import, Export, Restore and GK/NRS Data Upgrade are restricted to one user at a time. This is to prevent potential data corruption. Other users who try to initiate any of these operations will be displayed an error indicating the same.

Simultaneous database operations (Cut Over, Commit, Revert, Rollback, Backup, Restore, GK/NRS Data Upgrade and Routing Tests) are restricted to prevent potential data corruption.

Chapter 20: Unicode Name Directory

Unicode Name Directory is a Personal Directory based application storing the database of user names translated to different languages. Unicode Name Directory feature delivers a CPND capability in Unicode.

Unicode Name Directory is capable to hold multiple Unicode names per DN for a large enterprise customer. The user may select a Unicode language preference to match against the Unicode Name and Personal Directories.

The CS1000 Unicode Name Directory project is a software development that provides the following main possibilities to Unistim and in future SIP clients:

- To display localized name in UTF-8 Unicode character encoding for incoming and outgoing calls.
- To store up to six localized names and one English name in the database for the particular DN.
- To support Korean, Traditional and Simplified Chinese, Japanese and other Unicode languages for called or caller party name displaying.
- To work with 2007, 1120E, 1140E, 1150E, 2050V3, 1110, 1210, 1221, 1241 UniSTIM terminals.
- Non-Unicode capable IP sets are also supported to allow external number to name lookups for non-Unicode languages. These sets are 1220, 1230, 2001, 2002, 2004 and 2033. Note that 2001 and 2033 do support the Preferred Name Match feature and will be supported as long as MADNs are used. To be clear, it is not a requirement for these sets to display Unicode characters.
- To use System Management Solution for Unicode Name Directory application configuration, user display names provisioning and user CLID/URI generation.

Feature interactions

- Feature is not supported by SIP terminals that support Unicode.
- Manual intervention is required for the migration from Release 5.5 where the patched solution exists:
    - Backup/export the Release 5.5 PD DB and ND DB XML files
    - Convert XML file into CSV file
    - Restore/import the Release 5.5 PD DB and ND DB CSV files into Release 6.0
- Is limited only for those user names and phone numbers which are propagated from CND LDAP server to Unicode Name Directory database.
- Unicode name will not be displayed during a trunk call if the trunk side does not provide reliable Caller Line ID (CLID) and correct type of the call. It is related to both incorrect call processing logic and to the configuration issues.

- Only characters supported by the client side (including phone firmware and font files) can be used for name displaying. If a system administrator enters for localized name Unicode characters unsupported by IP clients, user name will be displayed incorrectly during the call.
- IP client firmware has a limitation for simultaneous Japanese, Chinese and Korean characters displaying. Avaya 1110, 1120E, and 12x0 IP Deskphones can store only one downloadable font in the FW. Avaya 1140E, 1150E, and 2007 IP Deskphones can store 4 fonts simultaneously.
- Primary/Alternate redundancy model is not supported for Unicode Name Directory application in Release 6.0. This is planned for next release.
- Unicode Name Directory application as a part of PD will not be able to serve multiple telephone nodes located on different Call Servers.
- For Japanese Katakana only half-width Katakana font is supported for name displaying.
- Phone numbers entered in Subscriber Manager for specific subscriber as ‘external’ should be unique within all CND database. UND feature does not guarantee correct user name displaying in case ‘External’ number are not unique.
- Signaling server should have certificates signed by Primary UCM in order to establish secure LDAP connection with Common Network Directory server.

Associated Applications

- PD (Personal Directory)

Troubleshooting

- Check that SSD messages containing information required for Unicode Name Directory lookup are sent from Call Server to Signaling Server during call.

  Enable SSD content printing in LD 77 for specific set TN:

  ```
  >ld 77
  PASS
  .dmtn
  TN  1   096  0  00  03
  ```

  See LD77 specification for details.
- Check UND logs at TPS layer.

  Set log level to DEBUG for tSET process using following command:

  ```
  [admin2@und-pd ~]$ syslogLevelSet tps tSET 7
  ```

  Find info related to UND feature in TPS logs.

- Enable Unicode Name Directory DEBUG logs on Application server configured in LD117. Use the following command for that:

  ```
  [admin2@und-pd ~]$ nd debugOn
  ```

  For details see command section of this guide for Unicode Name Directory feature.
- If Name Directory feature does not work.
  - Ensure that Application Server is up and reachable by TPS.
  - Ensure CPND block exists. Use following Call server overlay command for that.

    ```
    >ld 95
    REQ  prt
    TYPE cpnd
    CUST 0

    TYPE CPND
    CUST 0
    CNFG ALON
    MXLN 17
    STAL YES
    DFLN 13
    DES  NO
    RESN NO
    NITC NI
    ```

  - Ensure CNDA and DNDA classes of service are enabled for specific phone.

    ```
    >ld 11
    REQ: prt
    TYPE: 2004p2
    TN   96 0 0 4
    DATE
    PAGE
    DES
    MODEL_NAME
    EMULATED
    KEM_RANGE

    DES  2004
    TN   096 0 00 04  VIRTUAL
    TYPE 2004P2
    CDEN 8D
    CTYP XDLC
    CUST 0
    NUID
    NHTN
    CFG_ZONE 000
    CUR_ZONE 000
    ERL  0
    ECL  0
    FDN
    TGAR 1
    LDN  NO
    NCOS 0
    SGRP 0
    RNPG 0
    SCI  0
    SSU
    XLST
    SCPW
    SFLT NO
    CAC_MFC 0
    CLS  CTD FBD WTA LPR MTD FND HTD TDD HFD CRPD
    MWD LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
    POD DSX VMD SLKD CCSD SWD LND CNDA
    ```

```
CFTD SFD MRD DDV CNID CDCA MSID DAPA BFED RCBD
ICDD CDMD LLCN MCTD CLBD AUTU
GPUD DPUD DNDA CFXD ARHD CLTD ASCD
CPFA CPTA ABDD CFHD FICD NAID BUZZ AGRD MOAD
UDI RCC HBTD AHD IPND  DDGA NAMA MIND PRSD NRWD NRCD NROD
DRDD EXR0
USMD USRD ULAD CCBD RTDD RBDD RBHD PGND FLXD FTTC DNDY DNO3 MCBN
FDSD NOVD VOLA VOUD CDMR ICRD MCDD T87D KEM2 MSNV FRA  PKCH
CPND_LANG ENG
```

- Ensure that CPND names are displayed properly (for the cases when CPND names are configured) for the same call scenario.
- Ensure that Preferred Name Match feature works properly for the same call scenario.
- Ensure in Subscriber Manager that localized name is present for specific subscriber.
- Ensure in Subscriber Manager that phone is associated with subscriber.
- Ensure in Subscriber Manager that Numbering group is configured for specific phone.
- Ensure that ND database is synchronized with CND server.

  Use following commands:

```
[admin2@und-pd ~]$ nd getDbInfo
=== PD ===
Name records:413
Phone accounts:335
Database size:114688 bytes

[admin2@und-pd ~]$ nd ldapSyncStatus
=== PD ===
Result: Failed
Info: Link is down
```

- If Phone displays incorrect Unicode name
  - Ensure that corresponding font files are loaded to the phone
- If all settings are correct
  - Check logs on the Application PD/ND server for the error messages.
  - Enable Name Directory debug logs:

```
[admin2@und-pd ~]$ nd debugOn
=== PD ===
Name Directory debug enabled.
.
.
.
<The output will be printed to the current terminal.>
.
.
.
```

Chapter 21: OAM Transaction Audit Logs

OAM application description

The primary purpose of the OAM (Operations And Maintenance) Transaction Audit Logs feature is to securely maintain an audit trail of all system administrator OAM activities and security related events in a centralized location on the CS 1000 management framework, with the ability to forward the log files to an external Operational Support System (OSS) using SYSLOG.

OAM logging framework

This framework is used by CS 1000 management applications running on a Linux platform to insert the OAM logs with the standard log message format. The OAM logs from backup and member servers are forwarded to the primary UCM server, which serves as the centralized consolidation point for the OAM logs.

LogViewer interface

The LogViewer provides an interface to view and analyze the application and OAM logs. This interface provides the option of displaying the log for the last 30 days, sorting the logs based on a particular field, filtering the logs and exporting the logs as a CSV file. The LogViewer tool can be accessed from base element manager to view the system local storage of application logs. In the primary UCM server, this tool is used to access consolidated OAM logs that are forwarded from the backup and member servers.

Support for third party OSS Syslog server

The consolidated OAM logs from the primary UCM server can be forwarded in real-time to an external third party Operation Support System (OSS) Syslog server for monitoring and analyzing purposes. This facility is not provided in backup and member servers for forwarding their own local OAM logs.

OAM application interactions

- The communication from a backup/member server to the primary UCM server, as well as from the primary UCM server to the external third party OSS, is not secured as the communication is UDP based for both cases.
- A maximum of up to 4 external Syslog servers are supported for receiving the OAM logs from the primary UCM server.
- When the log storage space is exhausted, an SNMP alarm is generated and warning messages appear on the CLI.. Events after this will not be logged in the OAM audit logs. In case of storage exhaustion, the user must manually remove the old log files.
- Dependent on base element manager for showing the application logs.
- SPS Application log files can not be viewed by the LogViewer interface as SPS does not follow SYSLOG approach.

Associated Applications

OAM has dependencies on all the other applications running in the UCM in the form of adding the OAM audit log statements. The applications include the following:

- UCM
- EM
- BCC
- NRS Manager
- Subscriber Manager
- Web Services
- Base Element Manager
- LTPS
- SIP Line Gateway
- SIP Signaling Gateway
- NRS Routing Bundle (NCS, H323 GK, SIP Redirect Server)
- Co-resident Signaling Server
- Linux Base Log

Troubleshooting Checklist

A variety of failure scenarios from the UI are summarized below. If the user is repeatedly not able to run operations from the UI, try from the CLI.

Unable to launch the Logs page

- Check the OAM installation by verifying that all the following OAM artifacts are present in the mentioned location:
  - oamAudit.jar is present at path: /opt/nortel/Jboss-Quantum/server/default/nortel/lib/
  - oam-logging.war file is present at path: /opt/nortel/Jboss-Quantum/server/default/nortel/deploy/
  - oam-logging folder is created at path: /opt/nortel/
  - rsyslogConfiguration.sh file is present at path: /opt/nortel/oam-logging/
- Restart the Jboss
  - Login to the CLI
  - Execute: appstart Jboss-Quantum restart.
- If the problem persists, contact technical support and provide the following log files:
  - /var/log/nortel/Jboss-Quantum/log/server.log
  - All files at path: /var/log/nortel/oam/

Unable to view Logs

- Check if the Log file is present at path: /var/log/nortel/OAM/<filename>.gz.

  To view the logs (except for the current date) the log file for the next day’s date in <filename>.gz. format must be present.

  Example: To view the logs of Dec 12, <filename>.gz. must be present.
  - If the file is not present, an error message will be displayed on the UI.
  - If the file is present and logs are not shown, check the file permissions
- Check the log file permissions. Check whether the user has Read-only, Write-only or Read-Write permission.

Example:

```
-rw------- 1 root root 109454 Dec 16 19:20 oam.log
-rw------- 1 root root 174464 Dec 16 19:22 security.log
```

- Check if the disk size is exhausted.
  - Go to path: /var/log/nortel/
  - Execute: df –h OR du –h.
  - If the disk space is exhausted, backup the older log files to a different (backup) machine.
- Check the logs on the Secondary server.
  - Go to the Base Manager Page of the Secondary server.
  - Click on the OAM logs page to view the logs.
- If SMC is present in the Network,
  - Enable the UDP port 514 on the SMC
- If the problem persists, contact technical support and provide the following log files:
  - /var/log/nortel/Jboss-Quantum/log/server.log
  - All files at path: /var/log/nortel/oam/

Unable to Forward the Logs

- Check if the destination server is up.
- The port mentioned in the UI must be opened in the destination server.
- In case of further issues, contact technical support and provide the following log files:
  - /var/log/nortel/Jboss-Quantum/log/server.log
  - All files at path: /var/log/nortel/oam/

Options not available on Logs page

If one or more options, such as the Forward button, are not available on the Logs page:

- Check the User permissions. The User must have either ‘Network Security’ or ‘Security Administrator’ permission to see links such as the Log Forwarding button or the Security events drop down list on the Logs page.
- In case of further issues, contact technical support and provide the following log files:
  - /var/log/nortel/Jboss-Quantum/log/server.log

- All files at path: /var/log/nortel/oam/

Chapter 22: IP Media Services

Overview

- The IP Media Services feature provides IP based conference, tone, music, RAN and attendant services.
- Allows CS 1000 to provide delivery of media services to IP endpoints without the requirement for use of existing TDM hardware or DSPs.
- Call Server re-uses the same media control methods that it currently uses for its TDM based media resources by extending those models to virtual TN based IP media resources.
- Media services are provided by using MAS servers as the media providers.

IP Media Service Components

- Call Server
    - New IP conference and tone loop types
    - New IP music and RAN route/trunk types
- Media Service Controllers
    - New middleware applications deployed on the SS platform
        - Use existing PBX link protocols to talk to CS
        - Use SIP to control the MAS resources
- Network Routing Service
    - New MSC feature process is added on the existing Linux SIP redirect server to provide location service to the MSC applications
- Media Service Providers
    - Actual media services are provided by MAS
    - Standard SIP RFC4240 for conference and announcements
    - Proprietary XML body to specify tone parameters

Signaling Server Troubleshooting

The target devices and IP addresses in the following commands are examples only.

Launch wireshark

- **`ssh –X –l admin2 47.11.70.242`**
- **`harden nettools on`**
- **`wireshark &`**

wireshark plugin

- **`unistim: decodes the unistim message`**
- **`pbx: decodes the pbx message`**

Launch gnome-system-monitor

- **`ssh –X –l admin2 47.11.70.242`**
- **`gnome-system-monitor &`**

Firewall show command

`[admin2@symzcppmss ~]$ basefirewallconfig show`

```
Firewall is started.
No rules defined
```

Firewall showall command

This command prints out the detail firewall configuration

Firewall start command

`[admin2@symzcppmss ~]$ basefirewallconfig start`

```
Updating iptables rules: [  OK  ]
```

Firewall stop command

`[admin2@symzcppmss ~]$ basefirewallconfig stop`

```
This action will bring the system in less secure state.
Do you want to proceed? (Y/N) [Y]? y
Do you want to proceed? (Y/N) [Y]? y
Flushing firewall rules: [  OK  ]
Setting chains to policy ACCEPT: filter mangle nat [  OK  ]
Unloading iptables modules: [  OK  ]
```

netstat is a useful tool for checking your network configuration and activity

netstat commands

- netstat –nr

display routing table

- netstat –la

  display all the sockets

- netstat –i

  display interface table

  - netstat command can be used for checking the socket issues.

pbxLinkShow is used to check the PBX link status between call server and MSC application

pbxLinkShow

```
=== PBX ===
Active Call Server type = CS 1000E
Active Call Server S/W Release = 634F
Supported Features: CorpDir  UserKeyLabel  VirtualOffice  UseCSPwd  2001P2  2004P2
2002P2  PD/RL/CL  QoS Monitoring  NAT Traversal  ACF  IP ACD  1150  NextGen Phones
IP Phones 1200
Call Server Main: ip = 47.11.70.228, ConnectID = 0x86eb2d0, BroadcastID = 0x86eb888,
Link is up
Call Server Redundant: ip = 137.135.128.254, ConnectID = 0x86eb3d0, BroadcastID =
0x0, Link is in TBD state
Call Server Signaling Port = 15000
RUDP portID = 0x86e36f0
Tcp Link state = up
Tcp Signaling Port:  15000
Tcp socket fd:       22
Tcp msgs sent:       102205
Tcp msgs recd:       954333
```

electShow is used to check the mastership of the signaling server

electShow

```
=== ELECT ===
Node ID       : 8787
Node Master   : Yes
Up Time       : 1 days, 10 hours, 6 mins, 44 secs
TN            : 000 00 00 00
Server Type   : Signaling Server
Platform Type : CPPMv1
TLAN IP Addr  : 47.11.70.243
ELAN IP Addr  : 47.11.70.229
Election Duration       : 15
Wait for Result time    : 31
Master Broadcast period : 30
===== Node Master =====
Server Type       Platform          TN            TLAN IP Addr
Signaling Server  CPPMv1     000 00 00 00  47.11.70.243
Next timeout    : 28 sec
AutoAnnounce    : 1
Timer duration  : 60 (Next timeout in 40 sec)
====== Registered node elements ======
Num  Server Type       Platform          ELAN MAC           TLAN IP          ELAN IP
001  Signaling Server  CPPMv1     00:1B:BA:FD:35:95  47.11.70.243     47.11.70.229
TN                 = 000 00 00 00
UpTime             = 001 10:06:44
NumOfSets          = 3
NumOfCensusTimeout = 0
====== All elements in node configuration are registered ======
```

Media Services Controller Troubleshooting

Check Media service applications status

- **appstart mscAnnc status**
- **appstart mscAttn status**
- **appstart mscMusc status**
- **appstart mscConf status**
- **appstart mscTone status**

Troubleshooting MSC (syslogLevelSet)

Media service application log task The common log task are tMSC, tQueue, tDBUS and tStartup. For debugging the MSC application common problems tMSC should be set

Media service application log level The common log level are ERROR, DEBUG, INFO and WARNING. For investigating an MSC application issue, DEBUG level log should be set.

Media service application log set commands **syslogLevelSet mscAnnc tMSC|tQueue|tDBUS|tStartup ERROR|DEBUG|INFO|WARNING** **syslogLevelSet mscAttn tMSC|tQueue|tDBUS|tStartup ERROR|DEBUG|INFO|WARNING** **syslogLevelSet mscMusc tMSC|tQueue|tDBUS|tStartup ERROR|DEBUG|INFO|WARNING** **syslogLevelSet mscConf tMSC|tQueue|tDBUS|tStartup ERROR|DEBUG|INFO|WARNING** **syslogLevelSet mscTone tMSC|tQueue|tDBUS|tStartup ERROR|DEBUG|INFO|WARNING**

- Media service applications log file **/var/log/nortel/ss_common.log**

Media Services Controller (SIP Signaling) Troubleshooting

- pdt command only works, when the service is running.

pdt show command for IP Media Services **pdt> mscAttnShow** **pdt> mscAnncShow** **pdt> mscMuscShow** **pdt> mscConfShow** **pdt> mscToneShow**

pdt show command example **pdtShell** **pdt> mscConfShow**

```
=== MSCCONF ===
mscConf state: Active
mscConf SIP Trace: off
mscConf SIP Trace TN Filter: undefined
Total number of active conferences : 0
```

Network Routing Service Troubleshooting

Turn on SPS trace

/opt/nortel/sps/bin/spcmd -L -v all -s on

Turn off SPS trace

/opt/nortel/sps/bin/spcmd -L -v all -s off

The SPS log files

/var/opt/nortel/sps/LOG/SIPLogFile

/var/opt/nortel/sps/LOG/tcpcLogFile

/var/opt/nortel/sps/LOG/tcpsLogFile

/var/opt/nortel/sps/LOG/tlsBrokerFile

/var/opt/nortel/sps/LOG/udpcLogFile

/var/opt/nortel/sps/LOG/udpsLogFile

nrsRegShow command displays the registration info

nrsRegShow

```
=== GK ===
Id      RegistrationStatus      RegistrationExpiryTime  UserAgent
ContactAddressQty       Role
-----------------------------------------------------------------------------------
-------------------------
6      1      180    ipDialog SipTone(TM) III 1.3.1 build 13 patch 4 UA    513    0
56      1       900     Avaya one-X Communicator        1025    0
Total Rows:3
Id      Usage1  FqdnType       HostFqdn       Transport      Port    Preference
ParentGWEndpoint        ExpiryTime      RoleSips     ContactStr
-----------------------------------------------------------------------------------
--------------------------------------------------------------------------------
113     2       0       47.11.70.233    1       5060    1       6       180
0       0       sip:symzipdlg@47.11.70.233
251     2       0       47.11.181.77    2       5062    1       56      900
0       1       sips:henryyx@47.11.181.77:5062;transport=tls
```

nrsDBStateShow command displays the database state and version

[admin2@symzsps] nrsDBStateShow

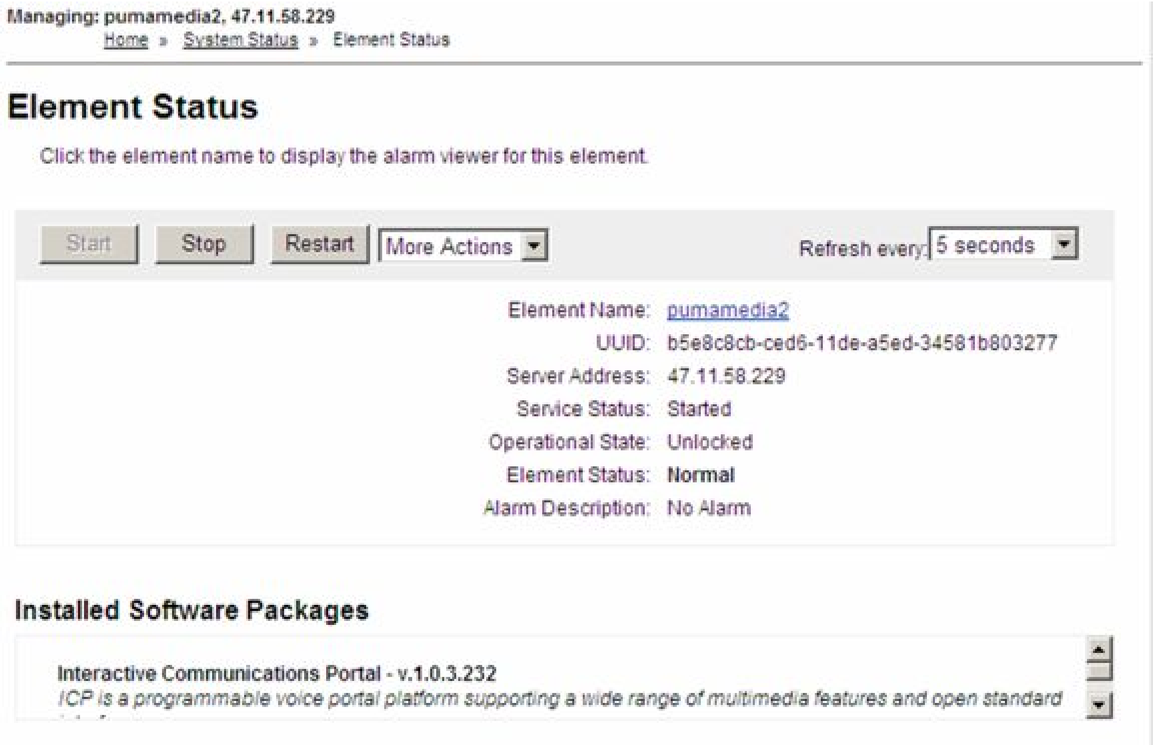
```
=== GK ===
Active  DB : A
Standby DB : B
Commit  DB : A
DB Version : 35
DB State   : Committed
QueryEntry : Generation is done!
DbChange   : Data Modified (Info For Secondary)
```

Check details in the NRS database

```
nrsCollaboratingServerShow

nrsGWEndpointShow

nrsL0DomainShow

nrsL1DomainShow

nrsQueryShow

nrsRoutingEntryShow

nrsServiceDomainShow

nrsUserEPShow
```

Media Application Server Troubleshooting

- For the full set of Media Application Server (MAS) troubleshooting tool refer to MAS Linux.
- The most useful data here is to run wireshark on the MAS and capture an entire call trace.
- On MAS Element Manager (EM) check for errors or warnings. Do “print screen” captures if necessary.
- MAS has a directory containing all system log files. This entire directory can be zipped-up by issuing the following command “logcapture -t” from any directory within a Dos command line window. It takes a few minutes to complete and will produce a “log.zip” file in that directory. (This zip file is typically tens of Meg in size or more.)



Managing: pumamedia2, 47.11.58.229

Home » System Status » Element Status

Element Status

Click the element name to display the alarm viewer for this element.

Refresh every: 5 seconds

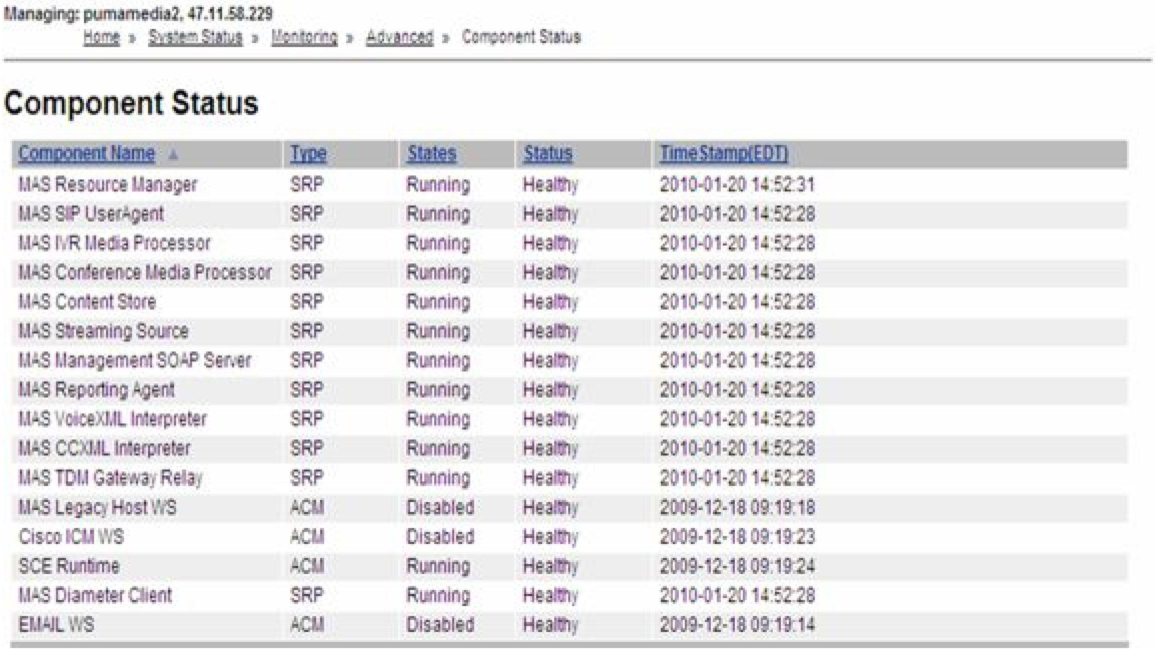
Element Name:	pumamedia2
UUID:	b5e8c8cb-ced6-11de-a5ed-34581b803277
Server Address:	47.11.58.229
Service Status:	Started
Operational State:	Unlocked
Element Status:	Normal
Alarm Description:	No Alarm

Installed Software Packages

Interactive Communications Portal - v.1.0.3.232

ICP is a programmable voice portal platform supporting a wide range of multimedia features and open standard

Figure 13: MAS Element Manager page to view the Element Status



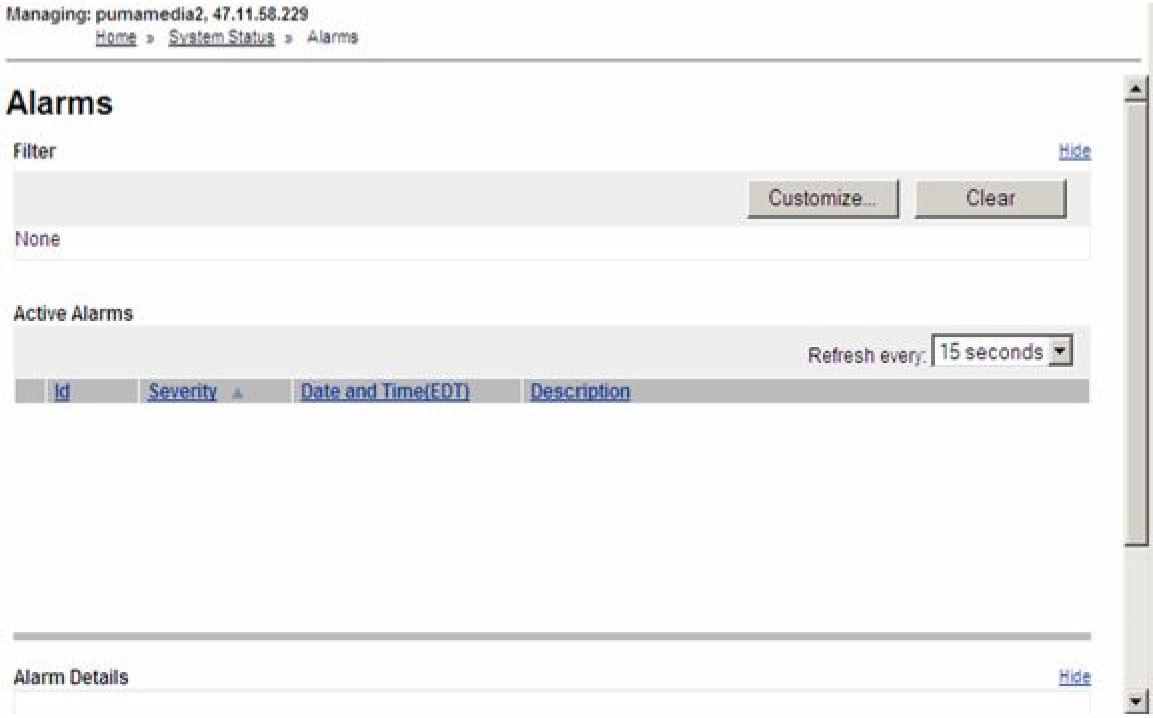
Managing: pumamedia2, 47.11.58.229

Home » System Status » Monitoring » Advanced » Component Status

Component Status

Component Name ▲	Type	States	Status	TimeStamp(EDT)
MAS Resource Manager	SRP	Running	Healthy	2010-01-20 14:52:31
MAS SIP UserAgent	SRP	Running	Healthy	2010-01-20 14:52:28
MAS IVR Media Processor	SRP	Running	Healthy	2010-01-20 14:52:28
MAS Conference Media Processor	SRP	Running	Healthy	2010-01-20 14:52:28
MAS Content Store	SRP	Running	Healthy	2010-01-20 14:52:28
MAS Streaming Source	SRP	Running	Healthy	2010-01-20 14:52:28
MAS Management SOAP Server	SRP	Running	Healthy	2010-01-20 14:52:28
MAS Reporting Agent	SRP	Running	Healthy	2010-01-20 14:52:28
MAS VoiceXML Interpreter	SRP	Running	Healthy	2010-01-20 14:52:28
MAS CCXML Interpreter	SRP	Running	Healthy	2010-01-20 14:52:28
MAS TDM Gateway Relay	SRP	Running	Healthy	2010-01-20 14:52:28
MAS Legacy Host WS	ACM	Disabled	Healthy	2009-12-18 09:19:18
Cisco ICM WS	ACM	Disabled	Healthy	2009-12-18 09:19:23
SCE Runtime	ACM	Running	Healthy	2009-12-18 09:19:24
MAS Diameter Client	SRP	Running	Healthy	2010-01-20 14:52:28
EMAIL WS	ACM	Disabled	Healthy	2009-12-18 09:19:14

Figure 14: MAS Element Manager page to view the Component Status



Managing: pumamedia2, 47.11.58.229

Home » System Status » Alarms

Alarms

Filter

None

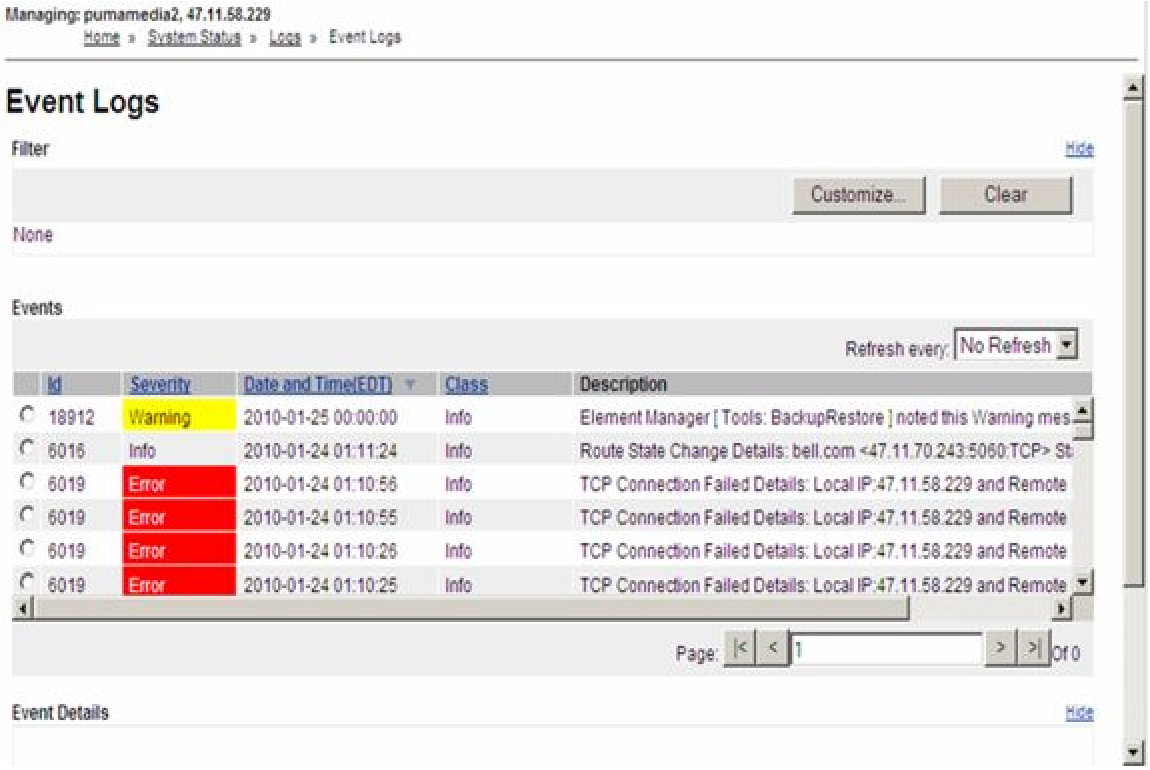
Active Alarms

Refresh every: 15 seconds

Id	Severity	Date and Time(EDT)	Description

Alarm Details

Figure 15: MAS Element Manager page to view the Alarms



Managing: pumamedia2, 47.11.58.229

Home » System Status » Logs » Event Logs

Event Logs

Filter

None

Events

Refresh every: No Refresh

	Id	Severity	Date and Time(EDT)	Class	Description
○	18912	Warning	2010-01-25 00:00:00	Info	Element Manager [Tools: BackupRestore] noted this Warning mes
○	6016	Info	2010-01-24 01:11:24	Info	Route State Change Details: bell.com <47.11.70.243:5060:TCP> St
○	6019	Error	2010-01-24 01:10:56	Info	TCP Connection Failed Details: Local IP:47.11.58.229 and Remote
○	6019	Error	2010-01-24 01:10:55	Info	TCP Connection Failed Details: Local IP:47.11.58.229 and Remote
○	6019	Error	2010-01-24 01:10:26	Info	TCP Connection Failed Details: Local IP:47.11.58.229 and Remote
○	6019	Error	2010-01-24 01:10:25	Info	TCP Connection Failed Details: Local IP:47.11.58.229 and Remote

Page: 1 Of 0

Event Details

Figure 16: MAS Element Manager page to view the Event Logs

Media Services Frequently Asked Questions

Question: What if an IP attendant client cannot register onto the CS?

Answer: A number of factors need to be checked

1. Run **“`appstart mscAttn status`”**command on signaling server to make sure the IP attendant gateway is working.
2. Check if the MAS works and the network between the MAS and IP attendant gateway works.
3. Check if the network between the IP attendant client and IP attendant gateway is working.
4. Check the firewall on the signaling server to see if it is fine.
5. Check the configuration of the IP attendant client to make sure the port numbers for the SIP and TCM are correct.
6. Check if the TNs used by the IP attendant client are configured properly on the CS.

Question: What if I don’t have speech path on my phone.

Answer: A number factors affect Media speech path establishment. Listed below are a few basic steps to debug speech path issues

1. Run **“`appstart mscAttn status`”** command on signaling server to make sure the MSC application is start OK.
2. Run **“`appstart sps status`”** command on NRS server to make sure the SPS is running
3. Check the MAS EM element status page to make sure MAS is running.
4. Run **“`pbxLinkShow`”** to check the PBX link and make sure the link is up.
5. Ping the NRS and MAS from signaling server and make sure the network connection are OK.
6. Run **“`syslogLevelSet mscAttn tMSC DEBUG`”** to turn on the debug log, check the ss_common.log
7. If there is no message coming from call server, check the call server configuration.
8. Otherwise, turn on the wireshark on NRS
   - If you see SIP 4XX message, check the MSC routing configuration on call server, MSC and NRSM.
9. If you see SIP 3XX message coming from NRS, turn on the wireshark on MAS.
   - If you see 4XX message coming from MAS, check the MAS configuration and License

- If you see 200 message coming from MAS, check the bandwidth zone configuration on the call server.

Question: What if I see the message “the phone-context could be wrong. Please check the configuration on both call server overlay 15 FTR and EM Node page” in the MSC log?

Answer: Check call type in FTR data of the LD 15.

Go to EM node page, check SIP URI map in Media services section and make sure the call type associated phone-context is defined.

Question: What if I see the message “mNegotiatedCodec=32” in the MSC log?

Answer: 32 means no codec, the call server codec negotiation failed. Check the bandwidth zone management on the call server, make sure it is configured correctly.

Question: What if I see the message “SIP 480 temporary unavailable” coming from NRS?

Answer:

1. Check the MAS, make sure MAS is up and running
2. Check the MAS configuration, make sure it points to the correct NRS and register is checked in EM/SIP route page
3. Check the network connection between MAS and NRS, make sure the IP connection is OK.

Question: What if I see the message “SIP 403 Forbidden” coming from NRS?

Answer: Check NRSM and make sure MSC is defined on NRSM as a static endpoint and make sure the static IP address is MSC TLAN IP address.

Check SIP domain from EM node page under Media service section and NRSM service domain page, and make sure they match.

Question: What if I see the message “SIP 404 Not Found” coming from NRS?

Answer: Check MSC routing DN and call type on the call server and NRSM routing entry, make sure they match.

Go to EM node page, check SIP URI map in Media services section and phone-context in NRSM routes page, make sure they match.

Question: What if I see the message “SIP 480 temporary unavailable” coming from MAS?

Answer: Check the MAS and make sure it has enough License to provide media service.

Question: What if I don’t see any SIP response coming from MAS?

Answer:

1. Check the MAS, and make sure it is up and running
2. Check the MAS configuration and make sure
    - The SIP domain is configured on MAS.
    - The MSC TLAN IP address is configured as a trusted node on the MAS

Question: What if I don’t see any SIP Register message coming from MAS to the NRS?

Answer:

1. Check the MAS, and make sure it is up and runningCheck the MAS, and make sure it is up and running
2. Check the MAS configuration and make sure
    - The NRS TLAN IP address is configured as a trusted node on the MAS
    - NRS is configured as SIP Route and register flag is checked on the MAS EM SIP route page

Chapter 23: SIP DECT alignment with SIP Line

Call Server console log

Console log is saved in **`/var/log/nortel/cs_console.log`** on Linux systems (VxELL).

Console log example (call trace):

```
DCH 1 OMSG SETUP    REF 000001ED CH 200 0 0 9 TOD  11:50:05 CK 11F5F0A8
HEADER:01 01 00 A9 08 02 01 ED 05
BCAP:04 03 80 90 A2
CHID:18 04 E9 A0 83 6D
FAC :1C 35 11 F6 A1 31 02 01 01 02 01 01 01 00
28 30 30 30 30 30 30 30 61 30 62 33
32 30 35 31 63 30 32 40 20 20 20 20
20 20 20 20 20 20 20 20 2D 30 30 30
30 30 30 30 30
FAC :1C 12 11 F5 A1 0E 02 01 01 02 01 01 01 06
12 01 2A 06 38 02
FAC :1C 11 11 FA A1 0D 02 01 01 02 02 01 00 CC
04 2A 06 12 01
PROG:1E 02 81 83
NLS5:9D
IPNW:40 0A 01 00 01 00 02 00 00 00 00 00
NLS5:9D
ZBD :4F 18 01 00 36 00 16 01 00 00 69 06 00 00
00 00 05 00 00 00 00 00 63 A4 00 00
CLNG:6C 06 69 80 33 36 34 30
CLED:70 05 89 35 31 30 30
DCH 1 IMSG CALLPROC REF 000001ED CH 200 0 0 9 TOD  11:50:05 CK 11F5F0DA
HEADER:2F 01 00 0B 08 02 81 ED 02
CHID:18 04 E9 A0 83 6D
DCH 1 IMSG ALERT    REF 000001ED CH 200 0 0 9 TOD  11:50:05 CK 11F5F768
HEADER:2F 01 00 05 08 02 81 ED 01
DCH 1 IMSG CONNECT  REF 000001ED CH 200 0 0 9 TOD  11:50:05 CK 11F5FE32
HEADER:2F 01 00 05 08 02 81 ED 07
DCH 1 OMSG CONN ACK REF 000001ED CH 200 0 0 9 TOD  11:50:05 CK 11F5FE34
HEADER:01 01 00 05 08 02 01 ED 0F
```

Signaling Server

Signaling Server log is in file **`/var/log/nortel/ss_common.log`** on Linux systems.

Log levels can be changed with the following commands

syslogLevelSet – overall log level for an application (for example - **syslogLevelSet vtrk tSLG DEBUG**)

slgAmlTrace <log level> - AML link message tracing (level 5 – maximum description. This function should be called from VxWorks shell)

slgTraceAdd – per user tracing (for example, from pdtShell - **slgTraceAdd 1,”5002”**)

Example (call trace fragment):

```
Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: level for tSLG task is found: 7

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG: User "5002" TN 200-00-04-00
slgKeyGetByType: key type 1 is found at keyNum 0, keyFunction 3, label 5002

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG: OUTGOING: 03 27 00 00 00 00 16 0e 02 84 00
00 01 00 00 00 c8 10 00 00 00 00 02 02 2a a5 aa 15 3e 01 00 96 04 06 2a 01 03 b6 01 00

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:     Message Type: CON (0xe)

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:     Application : TPS (0x16)

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:        OrigPtyManner = [0x1] Belligerent

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:        TermPtyManner = [0x0] Polite

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:        CallingPtyTN = 00 c8 10

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:        CalledPtyTN = 00 00 00

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:        CallingPtyDN = 2a a5

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:        CalledPtyDN = aa 15

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:        IE (0x3e) = CalledDNType, Len 0x1,
Data = TypeUnknown [00]

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:        IE (0x96) = CallID, Len 0x4, Data
=  [06 2a 01 03]

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG:       IE (0xb6) = SipLineID, Len 0x1, Data
=  [00]
Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: level for tSLG task is found: 7

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG: User "5002" TN 200-00-04-00
slgCallMakeWithSiplId: make a call from 5002 to 5100, dnType 0(TypeUnknown),
refCallId 0x62a0103

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: Read  msg q... (2)

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: level for tSLG task is found: 7

Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG: User "5002" TN 200-00-04-00
slgX11IndicatorStateHandler: key 1 = 5555002, func 126, lamp 5

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: Read  msg q... (1)

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: level for tSLG task is found: 7
Feb 28 12:23:12 sipl3 vtrk: (INFO) tSLG: User "5002" TN 200-00-04-00
slgX11AlerterHandler: command 38912(Alerter)

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: Read  msg q... (1)

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: sipNpmIgccMsgHandler: IgccNpmCallAccept
received for chid 100

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: sipNpmSessionFindByAppData Found session
with chid 100

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: sipNpmUipeMsgTypeConvert: Into
sipNpmUipeMsgTypeConvert

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: sipNpmUipeMsgTypeConvert: Allocated
memory for msgMcdn

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: tunnell msgType  is 1:

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: sipNpmUipeMsgParse: Outgoing Msg is call
assosiated

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: sipNpmUipeMsgParse: MsgType 0x4403

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: sipNpmUipeCrefSave: Saving cref length 0x2

Feb 28 12:23:12 sipl3 vtrk: (DEBUG) tSLG: sipNpmUipeCrefClear: clear callref(0x64)
index=1 crefVal=0x64
```

Chapter 24: New PDT commands

Four new PDT commands have been added that were previously delivered through diagnostic patches

The commands are detailed below:

- ptn for checking DSP usage
- HBdebug for the LAN issue on MGC's loosing heartbeats
- PEG_DSP_TRF DIAG using DFO 4 1 format - Print warning of inadequate DSP resources
- CS ossdDbg - Provide RAS and call register information for a particular SSD message to a particular TN (up to 6 TNs)

ptn for checking DSP usage

New pdt SL1 debug command ptn is for checking DSP usage and link integrity. It is useful for troubleshooting BUG6504 and AUD093 or AUD104 scenarios.

Usage

Scenarios where Tool should be used: Large Call center with mixture of IP trunks and TDM trunks, and a mixture of IP agents and TDM agents encounters many BUG6504 errors per day. These BUG6504 messages are accompanied by various other Audit messages and BUG messages. Site also continues to complain about random one way speech issues.

Impact

A certain percentage of calls are lost due to BUG6504. No available debug tools for the problem.

The purpose of implementing the new PDT debug command PTN which can quickly trace out the PTN connections in the system, or for a particular TN.

User interface

%% Function: PTN diagnostic tool %% Command format: ptn <cmd><sub_cmd><loop><bank> %% cmd 0 - PTN help %% 1 - Print out PTNs assinged to timeslots %% sub_cmd 0 - PTN assinged to TS in <loop> <bank> %% 1 - PTN assinged to TS in all loops and banks %% 2 - Scan all TNs and accumulate then print a summary of the

PTN states %% sub_cmd 0 - Scan all TNs and accumulate then print a summary of the PTN states. %% x - Scan all TNs and accumulate then print a summary of the PTN states. During the scan print all PTNs matching state x %% x = 1 PTNs with ACTIVECR in the Idle Queue (IQ) %% x = 2 PTNs with no ACTIVECR but have a non zero VITN_PTN_COUNT (VC) %% x = 3 PTNs with no ACTIVECR but have a non zero VITN_VTNLINK, FAR_TNLINK, or VITN_VIRTUALTN (VL) %% x = 4 PTNs with a non zero PTN_AUDITTED (XA) %% x = 5 PTNs with an apparently valid ACTIVECR (BSY) %% x = 6 Not implemented would be all idle and unlinked PTNs (IDLE) %% x = 7 PTNs that are not registered or disabled. %% 3 - Print the links for TN <sub_cmd> %% If TN <sub_cmd> is TDM, check if it's ACTIVECR is set. %% If the TDM has an ACTIVECR and the other party is IP, then print the links for the other party in the active call. %% 4 - Scan all TNs and print information on any PTN, VTRK, or IPSET that is linked to TN <sub_cmd>

```
pdt> ptn

ptn <CMD><SUBCMD><LP><BANK>

CMD: 0 - PTN HELP

1 - PTNS ASSINGED TO TS

2 - PTN STATES

3 - LINKS FOR TN SUBCMD

4 - PTN, VTRK, IPSET LINKED TO TN SUBCMD
```

Where tool output/information is stored

The CS SL1 debug ptn output are generated on the CS TTYs designated as maintenance (MTC) terminals.

pdt debug command HBdebug

New pdt debug command HBdebug for the LAN issue on MGC's loosing heartbeats.

Usage

Scenarios where Tool should be used: HBdebug is very useful in debuging LAN issue on MGC's loosing heartbeats.

- When the Heartbeat timeout occurs it prints the IP and the cabinet number of which MGC is not sending the heartbeat.
- When an internal error like socket error occurs which prevents sending and recieveing the heatbeat.

- When a delay in heartbeat creates a sequence number mismatch it prints the IP of the MGC which is sending with incorrect sequence number.
- When a sychronisation message was sent during normal operation time. Syncronisation messages should be sent only during state change of the heatbeat state machine, but if it was sent without a state change then it should be captured.

Sample output ******************

```
dbg> rdtail

[009] 18/09/2008 17:05:05 DIAG0002 (cont'd)

[008] 18/09/2008 17:05:05 DIAG0002 Diagnostic: DELAYED ACK from [47.11.98.39]

[007] 18/09/2008 17:05:05 DIAG0002 (cont'd)

[006] 18/09/2008 17:05:05 DIAG0002 Diagnostic: DELAYED ACK from [47.11.98.39]

[005] 18/09/2008 17:05:05 DIAG0002 (cont'd)

[004] 18/09/2008 17:05:05 DIAG0002 Diagnostic: DELAYED ACK from [47.11.98.39]

[003] 18/09/2008 17:05:05 DIAG0002 Diagnostic: Timeout for
ipmg:IP[47.11.98.39]:cabNum[3]

[002] 18/09/2008 17:05:04 DIAG0002 Diagnostic: Timeout for
ipmg:IP[47.11.98.39]:cabNum[3]

[001] 18/09/2008 17:05:03 DIAG0002 Diagnostic: Timeout for
ipmg:IP[47.11.98.39]:cabNum[3] [000] 18/09/2008 17:04:46 RPT0003 Unknown report
(not in DB): cat# = 0, report# = 0

dbg> rd

[000] 18/09/2008 17:04:46 RPT0003 Unknown report (not in DB): cat# = 0, report# = 0

dbg>

dbg>  SRPT016 OMM: IP link is DOWN between Call Server and IPMG[4 0]  SRPT257
shutDownServerSession: shutting down ssd server session [2] for IPMG [4 0]  ELAN009
ELAN 0 host IP=47.11.98.39 disabled, write to socket   fail due to far end
disconnect or Ethernet problems  SRPT226 Registration has been granted for
IP[47.11.98.39] IPMG[4 0]
```

Parameters syntax

The HBdebug (Heartbeat Application) PDT Commands:

pdt> HBdebug on - Start HBdebug.

pdt> HBdebug off - Stop HBdebug.

pdt> HBdebug status - Display HBdebug status.

pdt> HBdebug help - Print HBdebug help.

Where tool output/information is stored

The diagnostic logs will be stored in the CS rpt log and can be reviewed with rpt log commands – rd or rdtail.

DFO 4 PEG_DSP_TRF DIAG

Print warning of inadequate DSP resources.

Usage

Scenarios where Tool should be used: From New installation of CS1000E after several weeks in service starts complaining about Blocked calls and BUG6504. Problem seems to be traffic related. It was not at all obvious from the multiple BUG6504 and BUG330 messages that the problem was that all of the DSP resources in one IPMG were disabled. Whenever a call came in on a PRI in that IPMG and tandemed on to the SIP route due to converged desktop on the target DN, multiple BUG6504 messages were generated against the SIP trunk member, but nothing was generated to say that the real problem was that there were no DSP resources available in the IPMG. It is believed, but not proven that customer traffic report #12 would have indicated a high peg count for unavailable DSP resources. But this report is only available after the fact at the next traffic report time.

Impact: Customer loosing 15% or more of calls in high traffic times. Multiple GNPS resources required to troubleshoot bug which points away from the real problem. Time to time a key gets lit, or turned off when we do not think it should.

Commands/parameters syntax

The Diagnostic messages is enabled / disabled in the pdt with DFO feature index 4:

```
pdt> dfo 4, 1
```

or

```
pdt> dfo 4, 0
```

In the procedure PEG_DSP_TRF which increments the peg counters when a call:

- is attempted,
- fails due to lack of DSP resources,
- fails due to lack of BWidth.

Outputs diagnostic messages when a call fails due to lack DSP resources or bandwidth.

Use DSP_GEN_FAIL_CNT as a counter for the condition where the loop is unknown.

If BUG105_ENHANCED is on will do a report log DIAG004 for general failures. Output options are:

- INFO400 DSPxxx DSP FOR TN yyyy IPMG# zz
- INFO400 DSPxxx BDW FOR TN yyyy IPMG# zz
- INFO400 DSPxxx GEN FOR TN yyyy

where xxx is the number of pegs already accumulated; yyyy is the packed format TN of the TN requesting a DSP, and zz is the IPMG Number if known.

Output is limited to print only occurence 1, 2, 4, 8, 16, 32, 64, 96, 128 etc in any hour for IPMG specific errors. General errors are limited in the same fashion, but the counter does not restart hourly.

Where tool output/information is stored

The CS INFO reports (INFO400 DSPxxx …) are generated on the CS TTYs designated as maintenance (MTC) terminals. If the History file is configured for MTC, use the following steps to retrieve ossdDbg information data for CS SL1 Call Processing Report.

LD 22

REQ: prt

TYPE: ahst or phst

Provide RAS and call register information for a particular SSD message to a particular TN (up to 6 TNs)

Usage

Scenarios where Tool should be used: From time to time a key gets lit, or turned off when we do not think it should. The ossdDbg tool gives an output for every SSD message to a particular TN.

Example: Site complains that the OSN key is lit on the set with OSDN, but CDR shows no 911 call.

Commands/parameters syntax

The ossdDbg (Output SSD Debug) PDT Commands:

pdt> ossdDbg set x tn msg - set ossdDbg x (1 to 6)

pdt> ossdDbg reset x - reset ossdDbg x (1 to 6)

or

pdt> ossdDbg reset - reset ossdDbg all

pdt> ossdDbg status - Display ossdDbg status

pdt> ossdDbg help - Print ossDbg help

Where tool output/information is stored

The CS ossdDbg INFO reports (INFO900 OSSD …) are generated on the CS TTYs designated as maintenance (MTC) terminals. If the History file is configured for MTC, use the following steps to retrieve ossdDbg information data for CS SL1 Call Processing Report.

LD 22

REQ: prt

TYPE: ahst or phst

For example: INFO900

Chapter 25: IP Attendant Console

The IP Attendant Console feature provides the IP attendant gateway to bridge third party Attendant consoles, called as IP attendant clients, to the Avaya Communication Server 1000.

The IP Attendant client uses PC TCM messages to communicate with the IP attendant gateway for the functional operations, for example, the pressing of Answer and Release buttons, or clicking the functional menu items.

The IP attendant gateway uses SIP signaling messages to manage the media paths on the Media Application Server (MAS) for voice conversations among the IP attendant clients and other parties.

The IP Attendant gateway is one of the Media Service Controller (MSC) applications.

Components

- Call Server
- Support new attendant console type 3260
- IP Attendant Gateway (IP CIU Controller)
- New middleware application running on the SS platform
- Use existing PBX link protocols to talk to CS
- Use SIP to control the MAS resources
- IP Attendant Client
- Windows based application running on a PC
- Provide most of the valuable features that are available for M2250 digital attendant console
- Graphical user-friendly interface
- Media Application Server (MAS)
- Provide media services
- Use standard SIP signaling for media control
- Network Routing Server (NRS)
- Provide SIP redirection service for locating of the MAS and IP attendant gateway

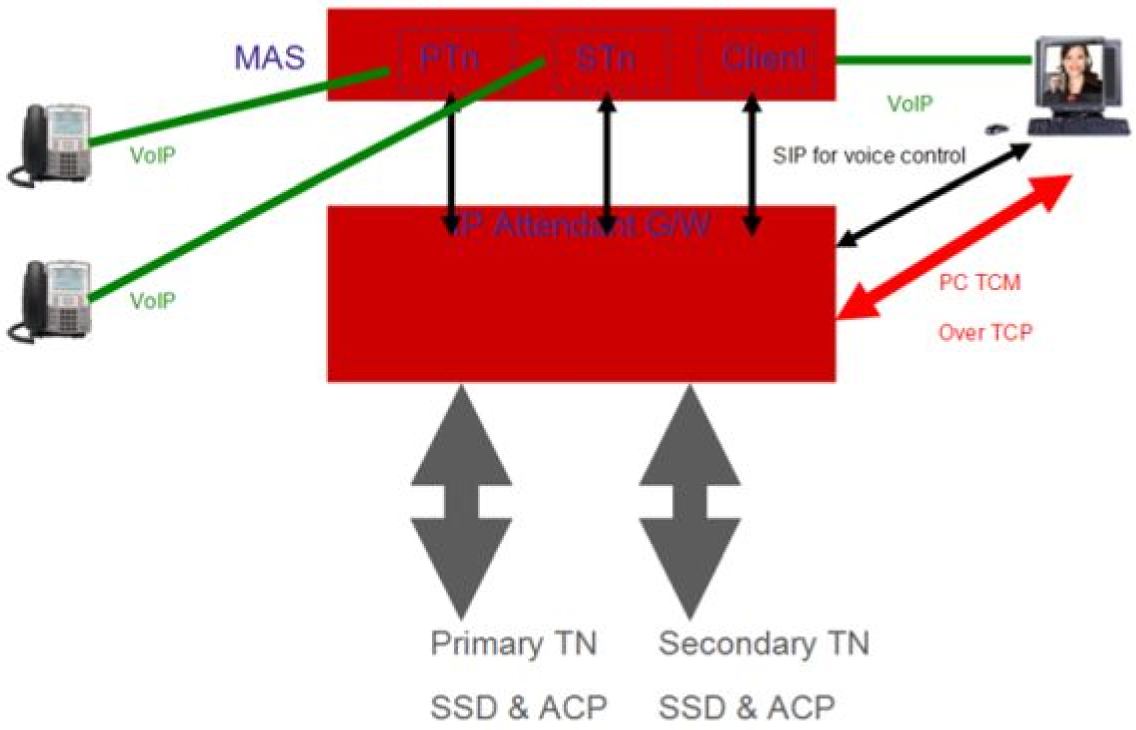


Figure 17: Components

Call Server Troubleshooting

Turn on/off SSD Trace in LD 77

>ld 77

. PASS 9950

To turn on the SSD trace on the TN 8 0 2 0

.dmtn

TN 1 008 0 02 00

To turn off the SSD trace on the first TN (8 0 2 0)

.kill 1

To turn off monitoring of lamp audit

.dlmp 1

Check Status of a Client in LD 117

- While a client is Registered
    - stip tn 248 0 0 16
    - TN type HWID STATUS HOSTIP SIGNALING IP SIGNALING IPv6
    - 248 0 0 16 3260 MAC: REG 47.11.73.211 47.11.181.157:0 [::]:0
    - F9009DB50B2F DTLS SUP:NO ENCR:INSEC
    - CODEC(BW): G711u noVAD(2528), G711a noVAD(2528)
    - MODEL: 3260 FWID: 20eabea4 FWVer: PEC: UNKN

  Where the data for MAC is a faked one and so is the one for FWID
- While a client is not Registered
    - stip tn 248 0 0 16
    - TN was not found

Check Status of a Client in PDT Shell

- While a client is Registered

  pdt> **`prlmShowIPAttn 0xf900`**

```
TN HWID STATUS HOSTIP Media IP PORT Signaling IP PORT CAPS

0xf900 000000000000000000F9009DB50B2F REG 192.168.20.211 192.168.40.157
0x1450 192.168.40.157 0x0 0x00000001

----------------------------------------------------

Media IPv6

----------------------------------------------------

[::]:0

----------------------------------------------------

------------------------------------------

codec bdwth(k) codecCaps desc

------------------------------------------

1 252 0x00000001 1

2 252 0x00000001 1
```

```
3260 IP Attendant Console 3260 0x2bb0f80 UNKN UNKN

--------------------------------

RFC2833:RxFlag RxPT TxFlag TxPT

---------------------------------------------

0x00 82 0xfe 64

---------------------------------------------
```

- While a client is not Registered

```
pdt> rlmShowIPAttn 0xf900
```

Signaling Server Troubleshooting

Launch wireshark

```
$ ssh –X –l admin2 192.168.40.10

$ harden nettools on

$ wireshark &
```

Launch gnome-system-monitor

```
$ ssh –X –l admin2 192.168.40.20

$ gnome-system-monitor &
```

The gnome-syetem-monitor is a process viewer and system monitor with a nice easy-to-use interface.

It provides a tree view for process dependencies, icons for processes, the ability to hide processes that you don't want to see, and the ability to kill/renice processes needing root access as well.

It provides graphical time histories of CPU/memory/swap usage.

Check firewall to make sure the related ports are open

```
$ masterfirewallconfig showall | grep mscAttn

35 mscAttn-SIP-UDP ipv4 UDP any 5090 n/a n/a n/a yes Yes
```

```
36 mscAttn-SIP-TCP ipv4 TCP any 5090 n/a n/a n/a yes Yes
37 mscAttn-SIP-TLS ipv4 TCP any 5091 n/a n/a n/a yes Yes
38 mscAttn-TCM-TCP ipv4 TCP any 3500 n/a n/a n/a yes Yes
39 mscAttn-SIP-UDP1 ipv4 UDP any n/a 5090 160 n/a yes Yes
40 mscAttn-SIP-TCP1 ipv4 TCP any n/a 5090 160 n/a yes Yes
41 mscAttn-SIP-TLS1 ipv4 TCP any n/a 5091 160 n/a yes Yes
42 mscAttn-TCM-TCP1 ipv4 TCP any n/a 3500 160 n/a yes Yes
```

Check network status

```
$ netstat –nr display routing table
$ netstat –la display all the sockets
$ netstat –i display interface table
```

Attendant IP gateway application

Start attendant IP gateway application

```
$ appstart mscAttn start
```

Stop attendant IP gateway application

```
$ appstart mscAttn stop
```

Check the status of IP attendant gateway

```
$ appstart mscAttn status
```

List of available commands in OAM shell

```
$ oamShell
oam> help mscAttn
```

The response of the OAM shell will be as follows,

```
=== MSCATTN ===
mscAttn
Media Services Controller:
mscAttnShow Show information about
```

mscAttn mscAttnSipTrace Turn on/off SIP Call Trace for mscAttn

mscAttnSipStackLog Turn on/off SIP Stack logs for mscAttn

mscAttnSSDTraceSet Turn on or off SSD tracing

mscAttnSSDTraceShow Display the settings for SSD tracing

mscAttnClientShow Display the info about an IP attendant client

List of all available commands in PDT shell

$ pdtShell

pdt> **`help mscAttn`**

The response of the PDT shell will be as follows,

=== MSCATTN ===

mscAttn

Media Services Controller:

mscAttnDbgTrace enable/disable debug tracing

mscAttnDbgFlags set/clear debug trace flags

mscAttnShow Show information about mscAttn

mscAttnSipTrace Turn on/off SIP Call Trace for mscAttn

mscAttnSipStackLog Turn on/off SIP Stack logs for

mscAttnSSDTraceSet Turn on or off SSD tracing mscAttn

mscAttnSSDTraceShow Display the settings for SSD tracing

mscAttnClientShow Display the info about an IP attendant client

Set Log level (syslogLevelSet)

The IP attendant gateway application uses the common log tasks tMSC, tQueue, tDBUS, and tStartup as well.

For debugging of problems related to IP attendant gateway application, the tMSC should be used. IP attendant gateway application log set command,

```
syslogLevelSet mscAttn tMSC | tQueue | tDBUS | tStartup DEBUG | INFO
| WARNING | ERROR
```

The log level are DEBUG, INFO, WARNING, and ERROR, and they are listed in the sequence of the containing: DEBUG level prints out all other level’s log messages, along with those belonging to itself.

Log file

```
/var/log/nortel/ss_common.log
```

Check the general info

```
$ oamShell
oam> mscAttnShow
```

The response of the OAM shell will be as follows,

```
=== MSCATTN ===
mscAttn state: Active
mscAttn SIP Trace: off
mscAttn SIP Trace TN Filter: None
NRS/MAS in use : NRS is not available, using Local Media Server
=== The Setting of SSD/TCM Tracing ===
On the side of the CS: On
On the side of the Client: Off
Tracing Sync. Message: Off
Only applies to an attendant console of the TN: 248-0-0-16
The number of IP attendant client registered: 1
```

Check the status of a client in the OAM Shell

```
$ oamShell
oam> mscAttnClientShow tn 248-0-0-16
```

Or
```
oam> mscAttnClientShow ip 192.168.30.100
```

The output is as follows:

```
=== MSCATTN ===
Client IP Address: 192.168.10.10
Primary TN: 248-0-0-16 (0xF900)
Secondary TN: 248-0-0-17 (0xF901)
```

Client UserID: Administrator

MAS IP Address: 192.168.30.100

Primary MAS Port Number: 19000

Secondary MAS Port Number: 19010

Client MAS Port Number: 19017

Service Routing DN: 4000

Registered on Call Server: Yes

Chapter 26: IP Media Gateway

A common issue in an Avaya Communication Server 1000 (CS 1000) solution is the occurrence of an ELAN bounce to an IP Media Gateway (IPMG). This chapter helps you determine if there is a product issue when an IPMG reset is reported, or when you observe ELAN alarms in CS 1000 report logs associated with one or more IPMGs. The information in this chapter helps you determine:

- if a product issue is involved
- if there are alarms to review, and how to interpret the alarms
- if you should contact Avaya technical support

IPMG Call Server heartbeat mechanism

A heartbeat mechanism ensures stable connectivity for the IPMGs with the Primary Call Server and Alternate Call Server(s). The heartbeat mechanism works as follows:

- Heartbeat packets are exchanged between the Media Gateway Controller, the Primary Call Server, and the Alternate Call Server.
- The heartbeat packets (UDP message) are sent by each end of the IP link in one second intervals.
- After the message is sent there is a waiting period for acknowledgement; the maximum waiting period is 200 msec.
- If twelve consecutive messages are not acknowledged, the link is declared to be DOWN.
- Heartbeat messages are exchanged while the link is DOWN. If four consecutive acknowledgements are received, the link is declared UP.
- If at any time the link between the Call Server and the IPMG goes down and it is not because of a Call Server restart, the IPMG restarts when the link to the Call Server is restored. This ensures the IPMG resources match the state of the hardware/software as stored in the Call Server. Note, when the restart occurs a port reset does not occur in the router.

Related topics:

Alarms on page 454

Alarms

You should begin an analysis of IPMG events by reviewing the associated alarms. Alarms are found in 2 locations:

- The Primary Call Server and the Alternate Call Server.
- The IPMGs that experienced the ELAN bounce.

Call Server alarms

1. Declaring the link DOWN for the affected IPMGs.

   The following log file excerpt provides an example of Call Server alarms declaring a link DOWN as a result of a heartbeat mechanism failure.

   ```
   [0133] 31/03/2011 13:52:41 HWI0931 ETH: No carrier detected on Ethernet
   port side 0. Port is Out Of Service.
   [0134] 31/03/2011 13:52:52 SRPT0016 OMM: IP link is DOWN between Call
   Server and IPMG[8 0]
   [0135] 31/03/2011 13:52:52 SRPT0257 shutDownServerSession: shutting down
   ssd server session [4] for IPMG [8 0]
   [0136] 31/03/2011 13:52:52 SRPT0016 OMM: IP link is DOWN between Call
   Server and IPMG[4 0]
   [0137] 31/03/2011 13:52:52 SRPT0257 shutDownServerSession: shutting down
   ssd server session [2] for IPMG [4 0]
   [0138] 31/03/2011 13:52:56 ELAN0009 ELAN 0 host IP=10.203.106.243
   disabled,
                              write to socket fail due to far end disconnect
   or Ethernet problems
   [0146] 31/03/2011 13:52:59 ELAN0009 ELAN 0 host IP=10.203.106.242
   disabled,
                              write to socket fail due to far end disconnect
   or Ethernet problems
   ```

   These alarms indicate:

   - The ethernet port that is down
   - The affected IPMGs
   - The IP addresses of the affected IPMGs

   In the majority of cases the Call Server and IPMG(s) declare alarms at different but very close (within seconds) times.

2. Declaring the IP link enabled for the affected IPMGs.

   The Call Server and IPMG (s) continue to send heartbeat messages to re-establish connectivity. When 4 consecutive heartbeat messages sent from the Call Server are acknowledged by the IPMG then the link is declared as UP.

   The following log file excerpt shows the recovery of the disconnected link.

   ```
   [0155] 31/03/2011 13:54:55 ELAN0014 ELAN 0 host IP=10.203.106.241 is
   enabled
   [0156] 31/03/2011 13:54:56 SRPT0091 HB: Local side IPL health change:6.
   [0157] 31/03/2011 13:54:56 ELAN0014 ELAN 0 host IP=10.203.106.243 is
   enabled
   [0158] 31/03/2011 13:54:58 SRPT0017 OMM: IP link is UP between Call Server
   ```

```
and IPMG[4 0]
[0159] 31/03/2011 13:54:58 SRPT0219 Reg DENIED for IP[10.203.106.242]
IPMG[4 0]
                           Reason[8] OldStatus[1] MainReset[1]
ExpRegRegStatus[2] TS[-1835900672]
[0160] 31/03/2011 13:54:58 SRPT0017 OMM: IP link is UP between Call Server
and IPMG[8 0]
[0161] 31/03/2011 13:54:59 SRPT0219 Reg DENIED for IP[10.203.106.243]
IPMG[8 0]
                           Reason[8] OldStatus[1] MainReset[1]
ExpRegRegStatus[2] TS[-1835897982]
[0162] 31/03/2011 13:55:14 SRPT0016 OMM: IP link is DOWN between Call
Server and IPMG[4 0]
[0163] 31/03/2011 13:55:15 SRPT0016 OMM: IP link is DOWN between Call
Server and IPMG[8 0]
[0164] 31/03/2011 13:55:18 ELAN0009 ELAN 0 host IP=10.203.106.243
disabled, write to socket fail due to far end disconnect or Ethernet
problems
[0168] 31/03/2011 13:56:02 ELAN0009 ELAN 0 host IP=10.203.106.242
disabled, write to socket fail due to far end disconnect or Ethernet
problems
```

These alarms indicate:

- The ELAN is enabled for IPMG(s). Note that, in the event of multiple IPMGs being affected, the IPMGs recover at slightly different times.
- The IP links are declared as UP.
- Registration is denied for the recovering IPMGs; the IPMG(s) must reset before they can register.
- The IPMG reset causes the IP links to be declared DOWN.

3. Granting Registration to the IPMG(s)

   The IPMG(s) recover from the reset and restore connectivity.

   The following log file excerpt shows the restored IP link.

```
[0172] 31/03/2011 13:56:42 SRPT0210 Reg GRANTED for IP[10.203.106.242]
IPMG[4 0] TS[-1835691879]
[0173] 31/03/2011 13:56:43 SRPT0210 Reg GRANTED for IP[10.203.106.243]
IPMG[8 0] TS[-1835689233]
[0174] 31/03/2011 13:56:49 SRPT0017 OMM: IP link is UP between Call Server
and IPMG[4 0]
[0175] 31/03/2011 13:56:51 SRPT0017 OMM: IP link is UP between Call Server
and IPMG[8 0]
[0177] 31/03/2011 13:56:59 ELAN0014 ELAN 0 host IP=10.203.106.242 is
enabled
[0178] 31/03/2011 13:57:00 ELAN0014 ELAN 0 host IP=10.203.106.243 is
enabled
```

Tips for Call Server Alarms

1. Track each affected IPMG to ensure that all IPMGs recover.
2. Verify that the alarms immediately preceding the HWI0931 “No Carrier” alarm (the first alarm indicating loss of connectivity) do not contain alarms of an event that may have triggered the loss of communication (for example, BERR, SRPT). If there are alarms that indicate a fault triggered the event, contact Avaya support.
3. If multiple IPMGs were affected at the same time (within seconds) and there are no alarms indicating a software event, then a network event probably triggered the loss

of connectivity. Verify the subnets and data switch connections to determine if there was a common point of failure.

4. Calculate downtime from when the IPMG link is declared DOWN until it is declared UP. In the following example, the downtime for IPMG 8 depicted in the above alarms is 4 minutes and 4 seconds.

```
[0134] 31/03/2011 13:52:52 SRPT0016 OMM: IP link is DOWN between Call
Server and IPMG[8 0]
[0138] 31/03/2011 13:52:56 ELAN0009 ELAN 0 host IP=10.203.106.243
disabled,
                           write to socket fail due to far end disconnect
or Ethernet problems
........................
[0175] 31/03/2011 13:56:51 SRPT0017 OMM: IP link is UP between Call Server
and IPMG[8 0]
[0178] 31/03/2011 13:57:00 ELAN0014 ELAN 0 host IP=10.203.106.243 is
enabled
```

IPMG Alarms

1. An IP link is declared DOWN.

   The following log file excerpt provides an example of IPMG alarms declaring the IP link to the Call Server DOWN as a result of the heartbeat mechanism failure.

```
[0906] 31/03/2010 13:52:40 LOG0001 tVlanTask: VGW1014 Ethernet carrier:
eth0, LOST (9)
[0907] 31/03/2010 13:52:40 MGC0016 MGC primary ELAN network carrier down
- portnumber 6 designator 1E
[0908] 31/03/2010 13:52:51 SRPT0016 OMM: IP link is DOWN between Primary
Call Server and IPMG[8 0]
[0909] 31/03/2010 13:52:55 LOG0004 tRUDPSS: Forwarding for connect Id =
-2066500384, error of type = 6 (connection lost).
[0910] 31/03/2010 13:52:55 LOG0003 tRUDPSS: pbxErrorCallBack on link 0,
reset link(s)
[0911] 31/03/2010 13:52:55 LOG0001 PBXResetLink: VGW1036 Call server
communication link: 10.203.106.240 down (20)
[0912] 31/03/2010 13:52:55 LOG0004 PBXResetLink: VGW card event 0x5 ignored
[0913] 31/03/2010 13:52:55 LOG0006 PBXResetLink: pbxTcpLinkStop: send
shutdown msg to tcp recv task
[0916] 31/03/2010 13:52:55 LOG0006 PBXResetLink: pbxTcpLinkStop: Forcing
close TCP socket due to timeout waiting for recv task to shutdown msg pipe
[0917] 31/03/2010 13:52:55 LOG0006 PBXResetLink: pbxTcpLinkClose: Close
the tcpsocket
[0918] 31/03/2010 13:52:55 LOG0006 PBXResetLink: TCP msg pipe closed
[0919] 31/03/2010 13:52:55 LOG0006 PBX: TCP close msg received, hdr
[0920] 31/03/2010 13:52:55 LOG0006 PBX: TCP msg pipe closed, recv task
terminating
[0921] 31/03/2010 13:52:58 LOG0003 VGW: VGW2125 MGC 8 0 DSP daughterboard
1 has un-registered from the Call Server (200)
[0922] 31/03/2010 13:52:58 LOG0006 VGW: GW OffLine msg received from
pbxLib, close all dsp channels and unregister gateways after 600 seconds
```

   These alarms indicate:

   - The ethernet connection is lost.
   - The IP link to the Call Server is DOWN.
   - The RUDP connection is lost and the PBX link is DOWN.
   - The VGW communication link is shutting down.

- The TCP link is shutting down.
- The DSP daughterboard(s) unregister.

2. IPMG Connectivity to the Call Server is restored.

   When 4 consecutive heartbeat messages sent by the Call Server are acknowledged by the IPMG, the link is declared as UP. From the IPMG's perspective, this triggers a series of events to recover the node.

   The following log file excerpt shows alarms that indicate the restoration of IPMG connectivity:

```
[0924] 31/03/2010 13:54:47 MGC0016 MGC primary ELAN network carrier up -
port number 6 designator 1E
[0925] 31/03/2010 13:54:47 LOG0006 tVlanTask: VGW5014 Ethernet carrier:
eth0, OK (9)
[0926] 31/03/2010 13:54:55 LOG0006 PBXResetLink: Sending request msg to
get Call Server S/W information
[0927] 31/03/2010 13:54:56 LOG0006 PBXResetLink: PBX UDP link established
for link 0
[0928] 31/03/2010 13:54:56 LOG0006 PBXResetLink: Successfully got call
server information
[0929] 31/03/2010 13:54:56 LOG0006 PBXResetLink: PBX TCP link established
[0930] 31/03/2010 13:54:56 LOG0004 PBXResetLink: VGW card event 0x5 ignored
[0931] 31/03/2010 13:54:56 LOG0006 PBXResetLink: VGW5036 Call server
communication link: 10.203.106.240 up (20)
[0932] 31/03/2010 13:54:56 LOG0006 VGW: GW OnLine msg received from pbxLib
[0933] 31/03/2010 13:54:56 LOG0006 VGW: VGW5126 MGC 8 0 DSP daughterboard
1 has registered to the Call Server (200)
[0934] 31/03/2010 13:54:59 SRPT0017 OMM: IP link is UP between Primary
Call Server and IPMG[8 0]
[0935] 31/03/2010 13:54:59 SEC0059 SM: FTP security status not found in
Secret Manager, setting FTP security to DISABLED status
[0937] 31/03/2010 13:54:59 LOG0006 tRegCab: Registered successfully to
Primary Call Server[10.203.106.240]
[0938] 31/03/2010 13:54:59 SRPT1013 STARTUP: IPMG 8 0 registration denied:
CallServer has cleaned up resources.
[0940] 31/03/2010 13:55:04 SRPT0781 RST 0: COLD START IN PROGRESS - Reason
-1
[0941] 31/03/2010 13:56:13 LOG0006 tRootTask: trBufLib_init OK, memory at
0x83fe74b0 of size 43650716
[0942] 31/03/2010 13:56:13 LOG0006 tRootTask: TR Memory Library
initialization Ok
[0943] 31/03/2010 13:56:14 SRPT0730 OS 0: Cold Start
Release: MGCCAM01
Created: Friday November 14 2008 00:57:51 EST
```

   These alarms indicate:

   - The ELAN carrier recovers.
   - A message is sent to the Call Server requesting Call Server software information, and the Call Server responds. Note, if the IPMG is not at the expected software level, a software upgrade or downgrade is triggered.
   - The UDP, TCP, and VGW channels are re-established.
   - The DSP daughterboard re-registers with the Call Server.
   - The IP link to the Call Server is declared UP.

- A STARTUP message is received from the Call Server that triggers a cold start.

3. The IPMG completes recovery after a cold start.

   The following log file excerpt shows alarms that indicate recovery is complete:

```
[0980] 31/03/2010 13:56:42 LOG0004 tMgcVgwAppStart: DSP DBs are present,
waiting for mgcdb.xml from Primary Call Server
[0981] 31/03/2010 13:56:42 SEC0059 SM: FTP security status not found in
Secret Manager, setting FTP security to DISABLED status
[0983] 31/03/2010 13:56:43 LOG0006 tIpExpStartup: Registered successfully
to Primary Call Server[10.203.106.240]
[0984] 31/03/2010 13:56:43 LOG0006 tIpExpStartup: Received configuration
data from Primary Call Server on attempt[1]
[0985] 31/03/2010 13:56:51 SRPT0017 OMM: IP link is UP between Primary
Call Server and IPMG[8 0]
[0986] 31/03/2010 13:56:51 LOG0006 TNC: CHANNEL CREATION SUCCESSFUL
[0987] 31/03/2010 13:56:52 LOG0006 CLAN: Slot: 3, Card Type: XMLC (24),
Signaling Type: A10 (2), Map Type: 3
[0988] 31/03/2010 13:56:56 LOG0006 CLAN: Slot: 2, Card Type: XUT (18),
Signaling Type: A10 (2), Map Type: 1
[0989] 31/03/2010 13:56:57 LOG0003 tERpcServer: Failed to send
mgcVgwConfigFileUpdate message - tVGW task is not running.
[0990] 31/03/2010 13:56:58 LOG0006 SYS: VGW5000 Card initialized, all
alarms cleared. (202)
[0991] 31/03/2010 13:56:58 LOG0001 SYS: VGW1036 Call server communication
link:10.203.106.240 down (20)
[0992] 31/03/2010 13:56:58 LOG0006 SYS: Waiting for PBX RUDP link to be
established, timeout is set to 2 seconds.
[0993] 31/03/2010 13:57:00 LOG0006 SYS: PBX RUDP link established
[0994] 31/03/2010 13:57:01 LOG0006 SYS: VGW5036 Call server communication
link:10.203.106.240 up (20)
```

   These alarms indicate:

   - The IPMG receives registration confirmation from the Call Server.
   - The IPMG receives a configuration file from the Call Server. The alarm also indicates on which attempt the file was received.
   - The IP link is declared as UP.
   - The CLAN cards are configured..
   - The VGW channels are configured after the VGW card restart.
   - The RUDP link is established..

Alarms when an Alternate Call Server is present

When an Alternate Call Server is involved, the alarm process associated with a heartbeat mechanism failure changes, but not significantly. If the IPMGs register to the Alternate Call Server, you must verify the following:

- The IPMG registration is correctly transferred to the Alternate Call Server.
- Determine the configuration for the re-registration of the IPMGs back to the Primary Call Server when the IPMGs re-establish communication with the Primary Call Server (manual or automatic).

Note:

If the Alternate Call Server is in a different time zone than the Primary Call Server, then the IPMGs registered to the Alternate Call Server use the time zone of the Alternate Call Server and not the time zone of the Primary Call Server.

Geographic Redundancy and IPMG/MG 1000E

A Geographic Redundancy N-way Replication system consists of:

- 1 Primary Call Server
- Up to 50 Secondary Call Servers

The Call Servers in the system can be:

- CS 1000E
- Half CS 1000E
- CP PM Call Server

Geographic Redundancy (N-Way) introduces survivability over layer 3 connections for the network dispersed MG 1000Es by allowing the Media Gateway to register to either the Primary or Secondary Call Server.

The MG 1000Es in the system are deployed over the network in the zones of the Secondary Call Servers.

In normal operation, all MG 1000Es in the system register to the Primary Call Server; therefore the Primary Call Server provides service to all resources in the system.

An MG 1000E that loses connection to the Primary Call Server registers to it's assigned Secondary Call Server and the resources it controls are serviced by the Secondary Call Server even though the Primary Call Server is operational.

All peripheral equipment in the system is located in the Secondary Call Server zone. If the Primary Call Server is down, each Secondary Call Server provides service only for the peripheral equipment in it's zone.

IPMG connectivity in Geographic Redundant (N-Way) system

The IPMG periodically polls the connection to the Primary Call Server. If the connection to the Primary Call Serve is lost, the MG 1000E reboots and registers on the assigned Secondary Call Server.

While registered to the Secondary Call Server, the MG 1000E continues to poll the Primary Call Server. When the connection to Primary Call Server is re-established, the MG 1000E re-registers to the Primary Call Server according to the configured registration switching policy:

- Automatically — The registration switching policy is defined as automatic; the IPMG reboots and registers on Primary CS
- Manually — The switching policy is defined as manual; the IPMG remains registered on Secondary Call Server until you take the following actions:
    - Enter the **`mgcswitchreg prim`** command in the LDS1 shell - the MG 1000E reboots and registers on Primary Call Server.
    - Reboot the MG 1000E.

Any change in the IPMG registration status is accompanied by an appropriate message, which is captured in the MGC log file.

The output of the **`mgcinfoshow`** command in the LDS1 shell is modified to reflect the optional dual registration, as follows:

```
Registration Status : <Registered on <IP add>/Unregistered>
Uptime : <n> days, <n> hours, <n> minutes, <n> secondsGeographic
MGC Primary CS Hostname : <name>
Primary CS IP Address : <IP address>
Secondary CS IP : <IP address>
Switch to Primary CS : <switch mode>
MGC ELAN IP Address : <IP address>
MGC Subnet Mask : <subnet mask>
MGC Gateway Address : <gateway address>
MGC TLAN IP Address : <IP address>
MGC Subnet Mask : <subnet mask>
MGC Default GW : <gateway address>
DB1 NT code : <NT code of DB/None>
```

IPMG dual registration

The IPMG is allowed dual registration (line and voice gateway applications only) on either the Primary or Secondary Call Server. The definitions and mechanism are based on the existing survivability feature of the small systems.

You must provide the IP addresses of both the Primary and the associated Secondary Call Servers when defining the IPMG.

The IPMG continuously polls the Primary Call Server and if the connectivity fails, it registers to the configured Secondary Call Server. When connectivity to the Primary Call Server is re-established, the MGC registers back to the Primary Call Server either automatically or manually, according to the configured registration switching policy:

Data collection

If you believe an IPMG connectivity issue may have occurred, you must determine the following:

- Use the alarms review methodology discussed in Alarms on page 454 to determine which IPMGs are affected.
- If multiple IPMGs are affected, determine if there are common failure points, such as data switch connections, subnet configuration, or site/location.
- Determine if a scheduled maintenance activity triggered the event.
- Determine if the Primary Call Server experienced an issue that triggered the event.

IPMG data collection recommendation

Command	Result
CTRL+LDB	Login to Problem Determination Tool
oam>mgcInfoshow	IP information of the MGC
oam>swversionshow	Displays MGC software version
oam> dspchanstateshow	List the state (busy, idle, disabled, or unequipped) for all channels on the DSP DBs.
oam> macshow	Display the MAC adress
oam> diskShow	Display compact flash size
oam> mgcDbShow	Display information about DSP DB
oam> pbxLinkShow	Status of the PBX link
oam> memshow	Print memory usage
oam> rdaccess	Audit of the PDT logins
oam> arpShow	Print the ARP table
oam> I	Print the status of the tasks
• oam> ethportshow	Display the Ethernet port settings for the external and internal interfaces.
• oam>isecProfileshow	If ISEC is enabled
• oam> plis	Print patch list
• ldb> cat csTrrt.dat	For IPMGs missing heartbeat messages

Note:

If the issue is a missing heartbeat message between the Call Server and the IPMG, you may require sniffer traces on the Primary Call Server ELAN and the IPMG ELAN with filters on UDP Port 32779 and Port 32780 as a next step in the investigation.

Table 118: Collect report logs

Command	Result
oam> cd /e/rpt	Change directory to report log directory

Command	Result
oam> LL	Perform LL (Long Listings of /e/rpt directory
oam> Rdopen LOG000xx.rpt	Open the first log file from date of outage
oam> rdall	Print all entries
oam> rdgo 0	Go to entry 0 in log file
oam> rds	Print all entries (and stack info) in the log file
oam> rdnext	Open the next log file (if required)
oam> rdprev	Open the previous log file (if required)

Call Server data collection recommendation

Table 119: LD 48 Command

Command	Result
.stat elan	Print ELAN status

Table 120: Capture Report Logs

Command	Result
pdt> cd /e/rpt	Change directory to report log directory
pdt> LL	Perform LL (Long Listings of /e/rpt directory
pdt> rdopen log000xx.rpt	Open the first log file for date of issue
rdall	Print all entries
pdt> rdgo 0	Go to entry 0 in log file
pdt> rds	Print all entries (and stack info) in log file
pdt> rdnext	Open the next log file (if required)
pdt> rdprev	Open the previous log file (if required)

Connect to the other Call Server and capture the report logs if the other Call Server was the active Call Server at the time of the event.
Connect the modem to J25 or J21 of the other Call Server
Do only the PDT data collection

Geographic Redundant cores/N-Way data collection

This section provides information about data collection issues under the following circumstances:

- The IPMG is not registering to the Primary Call Server or Alternate Call Servers.
- The IPMG restarts due to missing heartbeat messages between the Call Server and the IPMG.
- The IPMG registration to the Alternate Call Server fails.
- After swapping registration, the IPMGs do not register to the other Call Server.

Call Server data to be collected

Collect the following data:

- A network diagram depicting all nodes (including routers).
- For all Call Servers (Primary Call Server, Alternate Call Server 1, and Alternate Call Server 2) capture the data as outlined in the section Call Server data collection recommendation on page 462.
- Collect the following from the Primary Call Server:

Table 121: LD 135 command

Command	Result
.stat gr	Geographic Redundancy status

Table 122: LD 117 commands

Command	Result
prt grdrc	Print the Geographic Redundancy data replication control block
prt grsc	Print the Geographic Redundancy state control block
stat ipmg	Display the status of the IPMGs
prt bkr	Print backup rule(s)
prt bks	Print backup schedule
prt isec	Shows system ISEC status. There are three options: ALL, EXCEP and TARGET
prt isectar	Display all targets information

Collect the following from all Call Servers:

Command	Result
pdt>inetstatshow	Displays all the active connections for the IP sockets.
pdt>iosFdShow	Displays all of the file descriptors in use.
pdt>sl1qShow	Displays the number of call registers used in the print queue.

IPMG data to be collected

Capture Data Report Logs from several IPMGs as outlined in the section IPMG data collection recommendation on page 461.