Avaya Media Processing Server with CCTIVR Configuration and Interfaces Guide

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Contents

Chapter 1: PBX Interface Overview

This chapter covers:

1. CTI Overview
2. Interface Components
3. Sample Configurations

CTI Overview

Avaya Interactive Voice Response (IVR) Computer Telephony Integration (CTI) is a suite of products that increases the efficiency of contact centers by providing IVR and desktop client applications access to an extensive set of third-party CTI features including call data association, transfers, and agent control.

Important:

The CTI packages are designed for use with the Avaya Media Processing Server (MPS) 500 and 1000 Series IVR platforms. Scripts running on an MPS system are referred to as IVR applications.

CTI Packages

The Communications Control Toolkit Interactive Voice Response (CCTIVR) system is made of up of several packages, which are installed when CCTIVR is installed. These packages are PERIperl, PERIfw, PERIglobl, PERIase, PERIplic, PERIcti, PERIdoc, PERIdist, and PERIcmpat. CCTIVR supports the following switch interfaces: AACC, CCMS, MLSM, ICM, Avaya G3 ASAI, and Genesys T-Server. These interfaces form the core switch signaling interfaces. CCTIVR can support the following additional interfaces, when these interfaces are enabled and licensed on the system: TAPI, CCMS-RSM, and HDX.

Each of the core packages deliver the following:

- Access to call-related information such as ANI and DNIS. Call information can be used to reduce the number of prompts and enhance application decision-making capabilities. The result is improved customer satisfaction.
- Access to third-party call control, including consultative and blind transfers. A CTI transfer can typically save between 4 and 12 seconds per call compared to hardware-based transfers.
- Access to CTI-based agent state management (IVR port activation). CTI-based agent state management is more predictable compared to state change requests using DTMF tones.
- Association of caller-entered or application-retrieved data with calls. Associated data can be used in screen pops on agent workstations using an ActiveX toolkit (available from Avaya Professional Services Organization). Screen-pop data improves agent efficiency, increases customer satisfaction, and reduces total call times. Screen pops can typically save between 10 and 15 seconds per call.
- Inclusion of an MPS Developer toolkit plug-in to help expedite the development of CTI-enabled IVR applications.

Features provided by each of the enhanced packages are detailed in the relevant sections on the following pages.

CCTIVR interface using MLS

The CCTIVR (Communications Control Toolkit Interactive Voice Response) package integrates Avaya IVR systems with Avaya Meridian 1 (Avaya M1) and Avaya Communication Server 1000 (Avaya CS 1000) switches using the Meridian Link Services (MLS) interface. This package works with both the Contact Center Manager Server and the Legacy Meridian Link.

CCTIVR interface using Intelligent Call Management (ICM)

The CCTIVR package integrates Avaya IVR systems with Avaya DMS-100 and SL-1 switches using ICM. (Avaya LinkPlexer is required when ICM is used with CCMS and for switches that only support AX25.)

CCTIVR interface using ASAI

The CCTIVR package integrates Avaya IVR systems with Avaya G3 switches using the Adjunct Switch Application Interface (ASAI) protocol.

CCTIVR interface using Genesys

The CCTIVR package integrates Avaya IVR systems with Genesys T-server for Meridian 1 and Avaya G3 switches.

CCTIVR interface using CCTContactCenterInterfaces

The CCTIVR package integrates Avaya IVR systems with the HDX, RSM, and IVR.dll interfaces available on CCMS systems. CCTIVR, when enabled with a CCTContactCenterInterfaces license, can integrate with HDX, RSM, and IVR.dll interfaces.

HDX Interface

CCMS scripts can use the HDX interface to send and retrieve information to and from the IVR CTI system. Up to 8000 bytes of data can be sent.

Important:

Only one server for each application ID is allowed. Also, sending key-value pairs places load on the system. If system performance is affected, you may need to reduce the amount of transmitted data.

RSM Interface

The RSM (Real-time Statistics Multicast) interface provides real-time skillset, queue, and agent statistics from CCMS to the IVR application. It supports time-in-queue functions and IVR routing based on skillset information.

CSRSM provides skillset, application and agent statistics from CCMS to the IVR application. (Route IVR and nodal statistics are not supported.)

IVR.dll Interface

The IVR.dll interface provides application skillset data to CCMS from the IVR application. When a call is sent to CCMS, IVR.dll processes the information and passes it to the CCMS script. Call data is sent from the IVR application to the CSTAPILS process.

CCTIVRData

The CCTIVRData package integrates the Avaya IVR system with an Avaya TAPI (Telephony Application Programming Interface) server.

IVR applications use CCTIVRData to send call data to the TAPI Server for screen pops through the IVR.dll socket interface. The application attaches the call data to the Directory Number (DN) through the CSTAPILS process. Up to 3200 bytes of data can be attached.

Important:

On systems with CCTIVR and TAPI, you can acquire IVR ports on either CCTIVR or TAPI. You cannot acquire IVR ports on both CCTIVR and TAPI.

MPS Developer

CTI functionality is provided to IVR applications through a specialized MPS Developer toolkit referred to as the CTI Toolkit. See the MPS Developer CTI Toolkit User Guide for information about CTI IVR application programming.

CCTIVR integration with CCT

The CCTIVR package integrates the Avaya IVR system with the Avaya CCT system. CCTIVR can communicate with the CCT server, depending on how the system is configured.

IVR applications use CCTIVR to send call data to the CCT server for screen pops through the Integrated Peripheral for Meridian Link (IPMLSP) connector.

System Information and Requirements

The set of system requirements includes operating environment and software specifications, as well as hardware recommendations. Do not install any Avaya software on the Windows 2003 or Windows 2008 R2 server unless these minimum requirements are satisfied.

Hardware Requirements

- Pentium IV, Intel Xeon (32- and 64-bit), and Intel Xeon DP with Intel-based, Xeon 2.0 GHz CPU (Recommended: 2.8 GHz Xeon)

  Important:

  The 64-bit operating system for the Xeon 64-bit CPU is not supported.
- 2 GB RAM
- video card
- 40 GB SCSI or SATA hard drive, 80 GB physical disk space with RAID-1
- CD-ROM drive, minimum speed – 4X
- 10/100 Mb/s Ethernet network interface card

Software Requirements

The following are the software requirements:

- Avaya Aura Contact Center 6.2 software installation DVD-ROM
- Microsoft Windows Server 2003 or Microsoft Windows Server 2008 R2.

Important:

CCTIVR cannot be installed coresident with Avaya Aura® Contact Center 6.2 or later release.

Important:

The CCTIVR package requires the English version of Windows. The software is not intended for use with Windows for other languages.

- Remote Desktop Connection (RDC)

Important:

Avaya provides technical support for the packages on the Avaya CCT software installation DVD-ROM only. For technical support for other software, contact your product vendor for those software packages.

Caution:

Except as noted above, Avaya strongly discourages running unrelated third-party software on the MPS and CCTIVR server systems, including any other Avaya products. Do not run TAPI Server, Agent desktop, and so on, on systems intended to perform CTI, telephony, or voice application processing functions. Avaya provides technical support for CCT, when CCT is configured on a CCTIVR server system.

If other types of software are installed and activated, system performance and security can be affected. Avaya recommends the following:

- Do not install or run other software screen savers.
- Do not install Microsoft Office or its components.
- Do not schedule virus scans during peak hours.

Supported Software Versions

The following table lists the software versions required for each product installation:

Package	Supported Release Number	Latest Patch
CTI ToolKit	MPS Developer 4.1	
CCTIVR	Meridian Link Services 4.2	
	AACC 6.2	AACC 6.0 SU05
ICM	DMS100/TCPIP	SCAII 17 or 21
	DMS100/LINKPlexer/TCPIP	
	DMS100/LINKPlexerX.25	
	LinkPlexer 1.2	
ICM	DMS100/TCPIP	SCAII 17 or 21

Package	Supported Release Number	Latest Patch
	DMS100/LINKPlexer/TCPIP	
	DMS100/LINKPlexerX.25	
ASAI/AES	ASAI release 6-11	
	Avaya Communications Manager 2.X	
MAPD	ASAI release 4	
	Avaya Communications Manager 4.X	
Genesys	Genesys T-Server version 6.5	
	Genesys T-Server version 7.0	
CCMS	7.0, AACC 6.2, and AACC 6.3	
TAPI	TAPI SP 3.0	
Windows 2003	Standard	
Windows 2008 R2	Standard Edition (64-bit).	

System Capacities

A multiple-processing server configuration can support up to 1500 IVR ports across 11 processing-server systems with a single CCT server.

The following table indicates the rated call capacities for MPS systems using various CCTIVR interfaces. These are the minimum performance specifications of the system. In general, Avaya expects that systems equipped as described in System Information and Requirements on page 11 can exceed these ratings.

For all interfaces, the maximum size for application attached data is 3200 bytes. For HDX data, a maximum of 20 key/value pairs (with up to 40 bytes per key and 40 bytes of associated data) is supported.

Interface Type	MPS 500/1000
CCTIVR	16,000
CCTIVR + CCMS with HDX	16,000
CCTIVR + CCMS with RSM	16,000
CCTIVR + CCMS with HDX and RSM	16,000
CCTIVR with TAPI	16,000

Interface Type	MPS 500/1000
CCTIVR + CCMS with HDX and TAPI	16,000
CCTIVR + CCMS with HDX, RSM, and TAPI	16,000

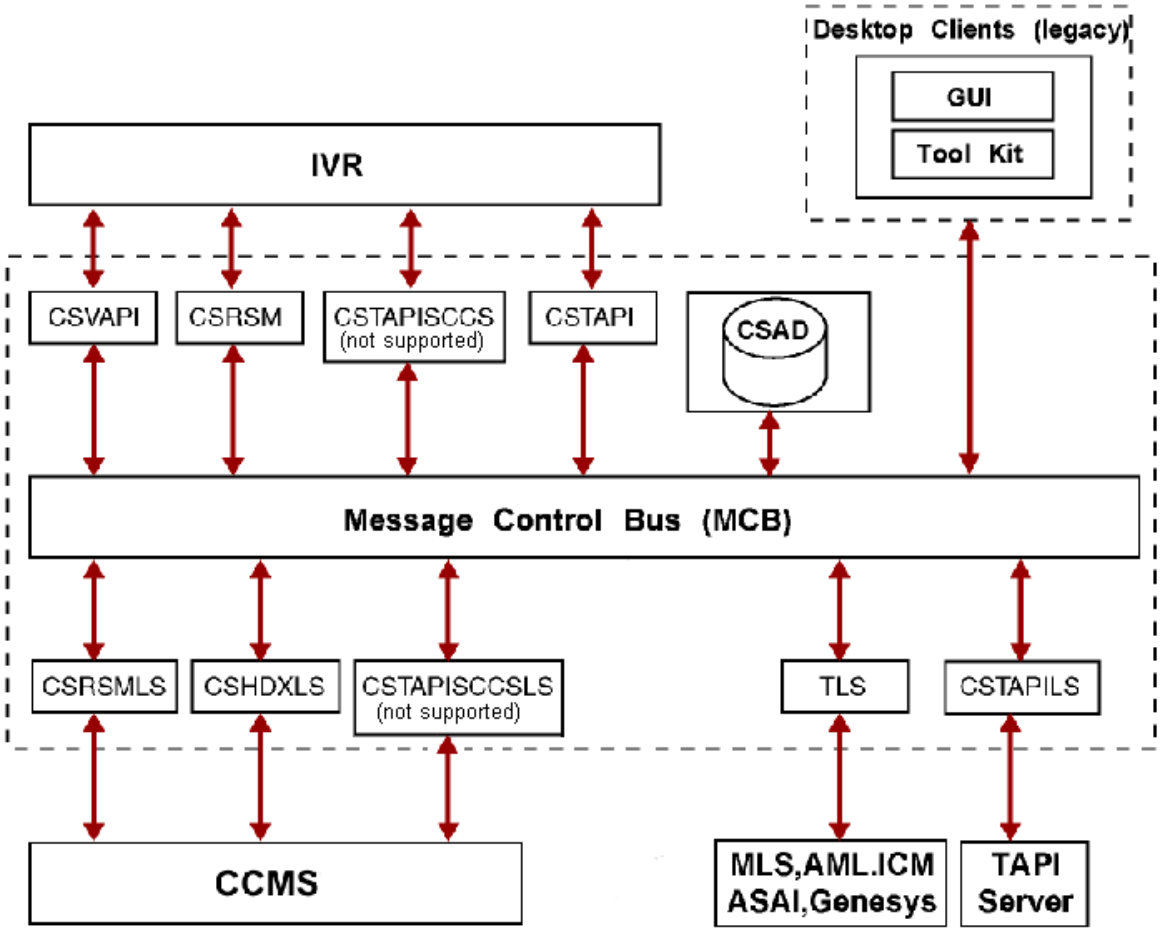
System Interface Components

The CTI interface components provide a link from the Avaya MPS to the CCMS system. The interface software runs on a Windows 2003 or Windows 2008 R2 system, referred to as the CCTIVR. In a single server configuration, the Windows 2008 R2 system performs both CCTIVR Server (CTI) and Media Processing Server (IVR) functions. In a multiprocessing server environment, IVR functions are performed on one or more servers, separate from the CCTIVR on a Windows 2003 or Windows 2008 R2 system.

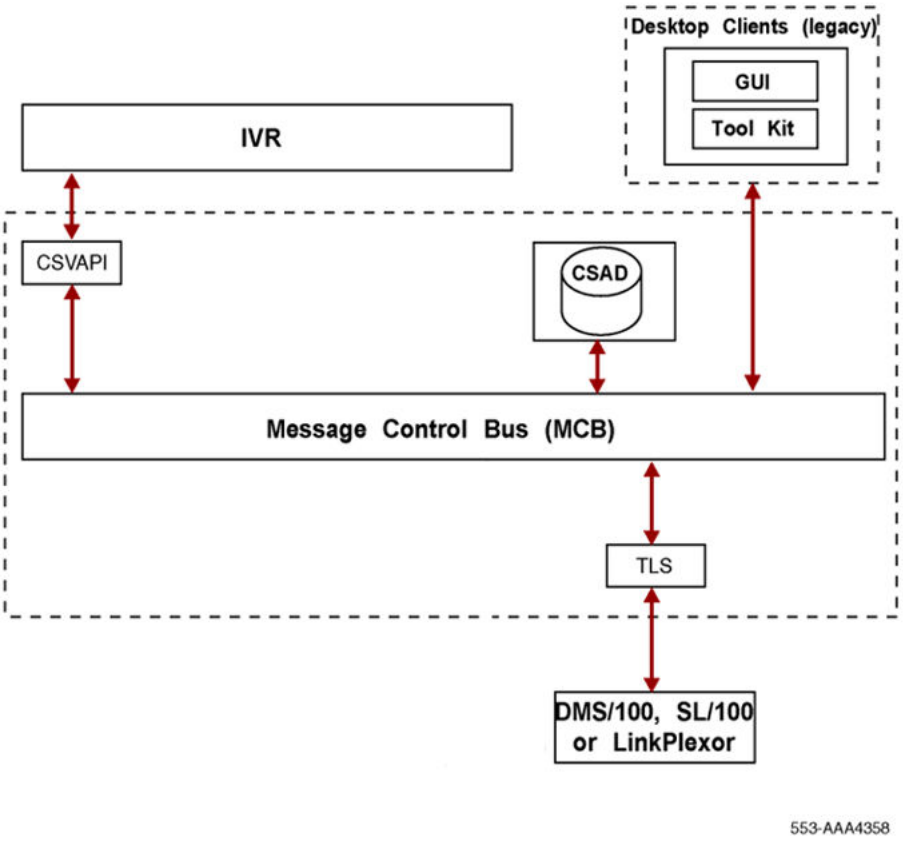
Available Configurations

This section describes the available configuration types for interfacing a CCT Server with an MPS system. Refer to previous paragraphs in this chapter for a description of each configuration.

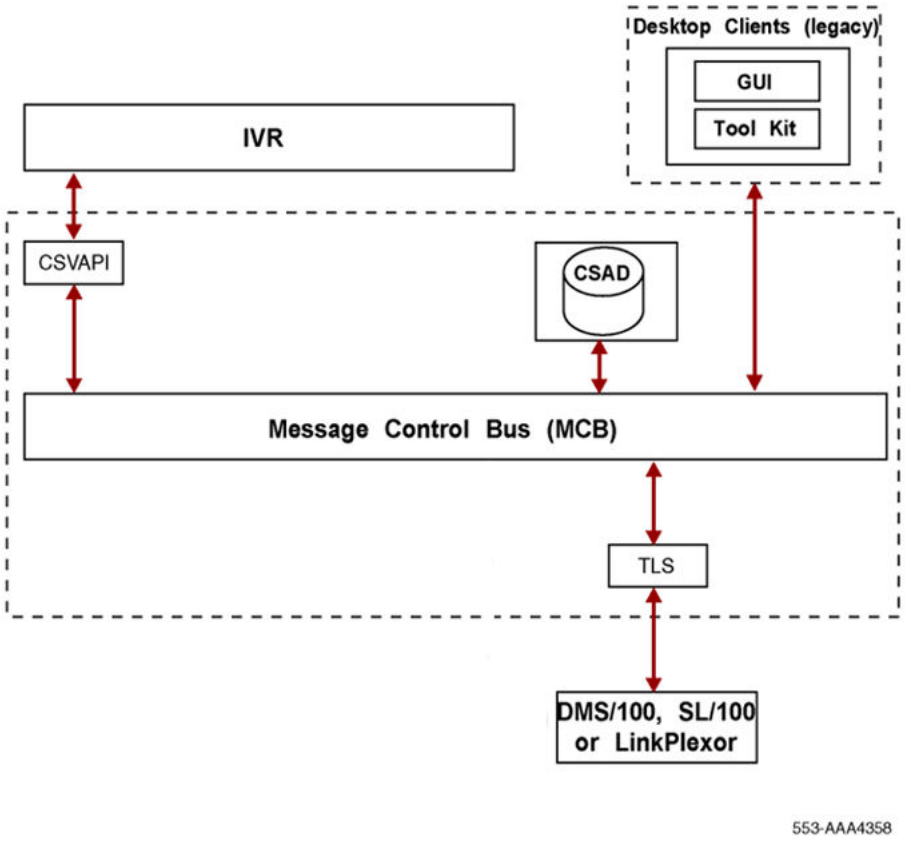
CCTIVR


Desktop Clients (legacy)
GUI
Tool Kit
IVR
CSVAPI
CSRSM
CSTAPISCCS
(not supported)
CSTAPI
CSAD
Message Control Bus (MCB)
CSRSMLS
CSHDXLS
CSTAPISCCSLS
(not supported)
TLS
CSTAPILS
CCMS
MLS,AML.ICM
ASAI,Genesys
TAPI
Server

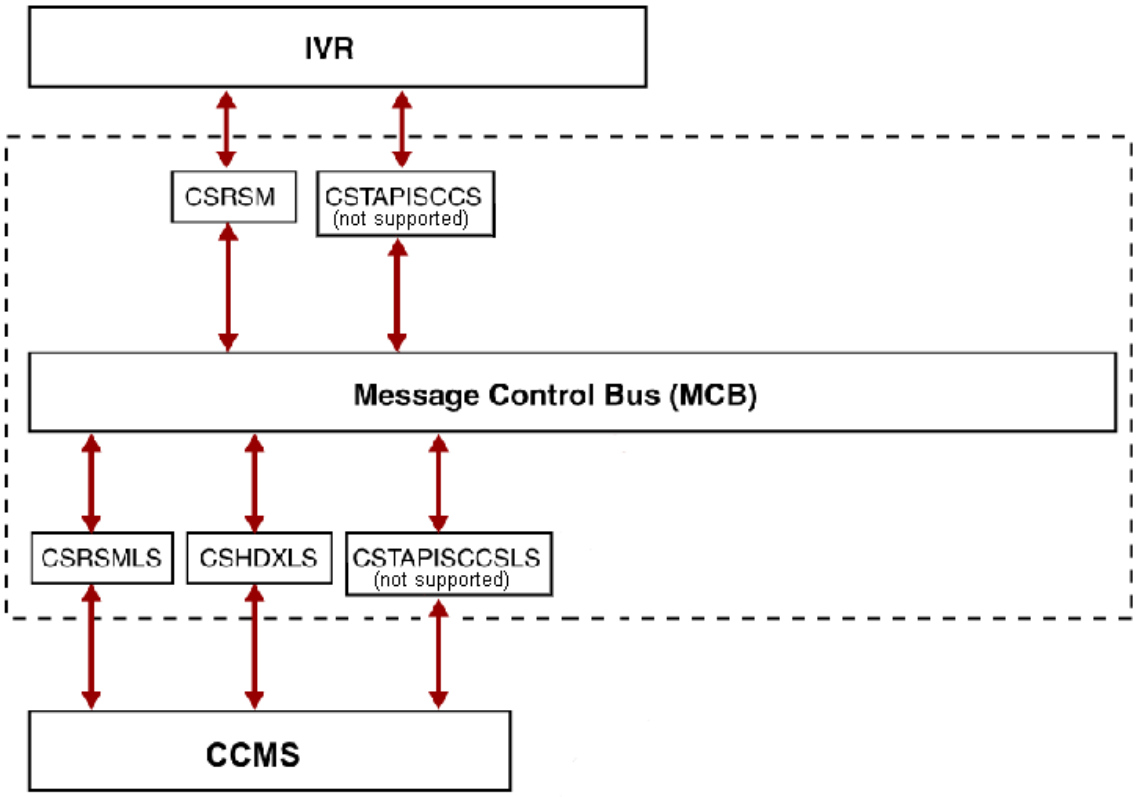
CCTIVR interface with CCMS and MLSM



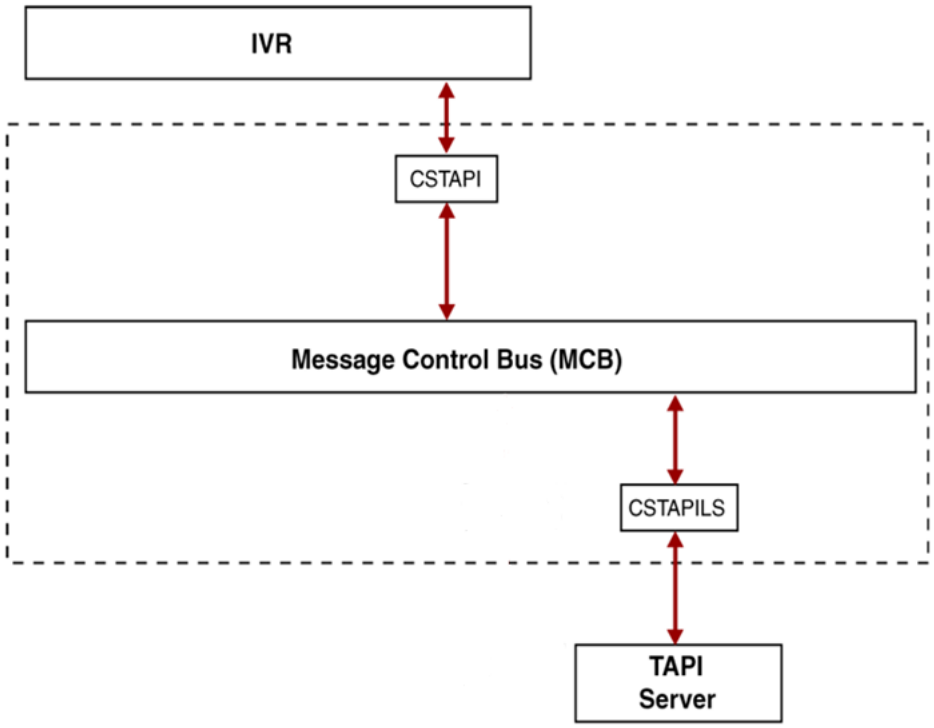
CCTIVR interface with DMS switch



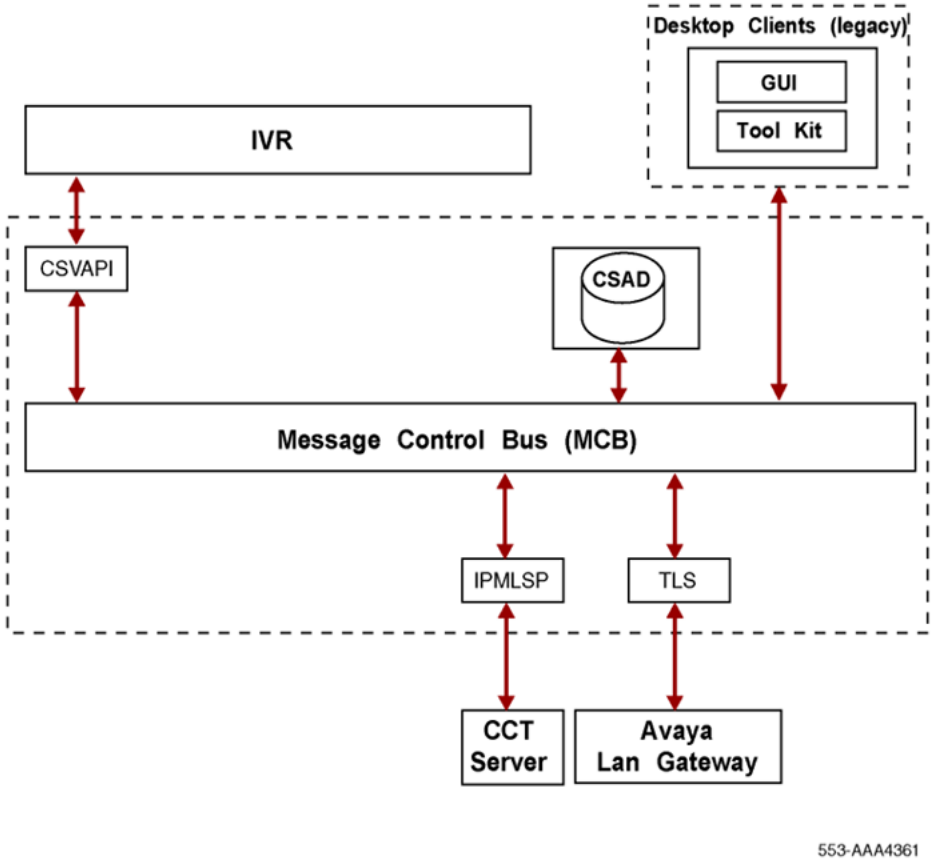
CCTIVR interface with CCMS



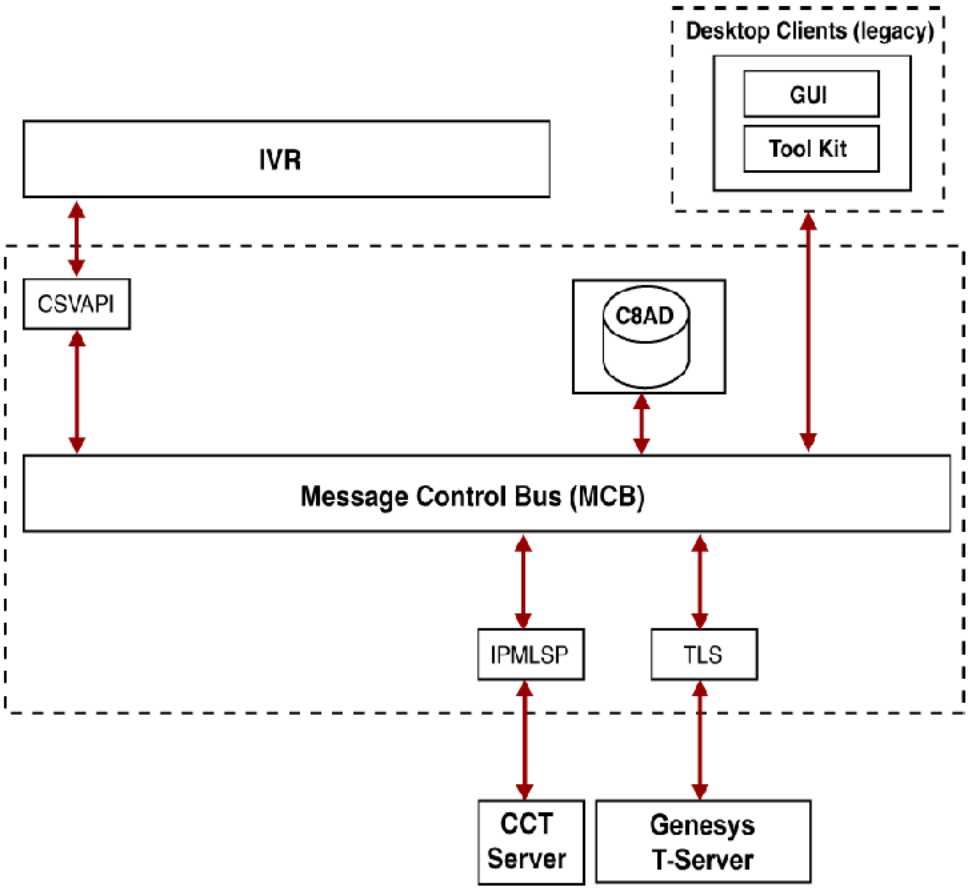
CCT interface with TAPI Server



CCTIVR interface with ASAI



CCTIVR interface with Genesys T-Server



Chapter 2: Installation

This chapter covers:

1. Installation Procedures
2. Licensing Requirements

Installation Procedures

This section identifies the steps required to install the CCTIVR interface packages on a Windows 2003 or Windows 2008 R2 server. This includes installation procedures for setting up a new 2003 or Windows 2008 R2 server and for installing on an existing 2003 or Windows 2008 R2 server.

Important:

Confirm that the hardware and software requirements shown in System Information and Requirements on page 11 are satisfied before proceeding with any software installation.

Caution:

Except for antivirus software and, as described in Software Requirements on page 11, do not install unrelated Avaya or third-party software on MPS and CCT Server systems.

Install all packages on the C: drive partition. The particular directory paths used to store the packages depend on the software release level. Regardless of the software release level, the environment variable %MPSHOME% always points to the appropriate directory as described below.

The directory paths on an MPS are, in general, defined as follows:

```
%MPSHOME% = C:\Program Files\Avaya\SelfService
%ASEHOME% = C:\Program Files\Avaya\PERIase\SelfService
```

If You Are Upgrading From a Previous Release

To migrate from an Avaya Media Processing Server 3.x system to Avaya Media Processing Server 4.1, see the *Avaya Media Processing Server 3.x to Media Processing Server 4.1 Transition Guide*.

To migrate from Avaya Media Processing Server 2.1 to Avaya Media Processing Server 3.5, see *Avaya Media Processing Server 3.5 Transition Guide*.

Note:

Upgrades from VPS/is or MPS 2.1 must be undertaken in stages, upgrading to MPS 3.x first, then MPS 4.1.

Installing CCTIVR on a New Windows 2003 and 2008 R2 Server

To install CCTIVR interface package software on a new Windows server, the procedure applies to the CCTIVR product as it exists with MPS. CCTIVR is installed and released and is resident as part of the CCT installation media.

To install CCT on a new Windows 2003 and 2008 R2 server, see *Communication Control Toolkit Installation and Maintenance Guide*.

Verifying Package Installation

Use the perirev -verbose command to verify package installation and revision levels using the following procedure:

1. From a command prompt, enter the command perirev -verbose.

   A text output is generated listing all the installed packages.
2. Scroll through the list to verify the installed packages.
3. Press Enter to exit the display.

Note:

The PERIase revision level on the CCTIVR Server and on Media Processing Server must be the same for the systems to communicate.

Licensing Requirements

Keycode licensing information must exist on all systems using Avaya software products. Keycodes are based on customer-supplied information, and are obtained from Avaya through an automated Web site or by phone contact with a live representative, see Obtaining Keycodes by KRS or Telephone on page 26.

For general information about licensing requirements, see PERIplic License Server on page 191. For specific information about keycode requirements, see Required Licensing Information (CCTIVR) on page 193.

Licensing information is stored in the %MPSHOME%\PERIplic\etc\plservrc file. This file contains the keycodes for installed software products, and must be modified for each installation as follows:

Example

- For new installations, the plservrc file is empty. You must add new keycode information to this file.
- If the installation is performed on an existing Media Processing Server, you must edit the plservrc file to include the new license information. All existing information must be preserved. Avaya recommends making a backup copy of this file before editing.
- If a new network card (or a new motherboard with a built-in network card) is installed, you must acquire new keycodes.
- If you are running the license server on the CTI server machine, you must also enter a keycode for plicd in plservrc. See the example on License File Example on page 28.

After you edit the file to include the appropriate keycode information, see Configuring the License File on page 27, reboot the system. After the system reboots, confirm that the License Server is working properly by checking the Windows environment setting:

1. Open the Windows Start menu and choose Settings > Control Panel > Services.
2. Confirm the following:
   - The Avaya License Server is listed.
   - The Status is displayed as Started.
   - The Startup option is listed as Automatic.

Note:

Avaya software is licensed to run on a specific fixed node within the network. To run Avaya packages on more than one system, you must purchase additional licenses and add them to the plservrc file.

Obtaining Keycodes by KRS or Telephone

A license keycode is required to activate Avaya software packages. Obtain keycodes by phoning an Avaya representative (1-800-AVAYA) or by using the web-based Keycode Retrieval System (KRS).

To use the web-based KRS, you must have an MPS system, an Internet connection, and specific system information. This information is in Step 2 on page 184 of the Customer Site Survey on page 181.

For both new systems and system upgrades, you must have the customer purchase order (PO) number or the Avaya order number. Also, for new system installations, you must have the MPS serial number (system ID), and PC MAC address of the particular system.

To use the online Keycode Retrieval System:

1. Open a web browser and go to the Avaya KRS Web site: http://support.avaya.com/krs.
2. Under Registration for Avaya Partners, Resellers, Distributors and Associates, follow the registration procedures, if not done already.
3. Under HELPFULL INFORMATION, click KRS Site, or enter http://support.avaya.com/krs in the browser address bar.
4. Select MEDIA PROCESSING SERVER SERIES/VOICE PROCESSING SERIES from the Product Family menu.
5. Follow the instructions posted on the Web site.

Important Notes About Entering Keycodes in the License File

Example

- When adding a keycode to the file, you must copy it exactly as shown. Remove any carriage returns that may be embedded into the keycode data.
- At the end of the keycode data, you must enter a carriage return so the cursor is on the beginning of the next line. (Carriage returns must exist at the end of each line in the license file, including the last line.)
- Include only keycode data received from Avaya in this file. Do not enter any other kind of data.

- If you change information in the license file, you must restart the server to obtain the updated keycode data from the plservrc file. For more information, see PERIplic License Server on page 191.
- To test the accuracy of edited keycodes, use the plicmon utility, see The plicmon Utility on page 29.
- If you are running the license server on the CTI server machine, you must also enter a keycode for plicd in plservrc. See the example on License File Example on page 28.

Configuring the License File

You must edit the plservrc file to include keycodes for all newly installed Avaya software.

New License File

Upon initial installation of the PERIplic software (or if the plservrc file does not appear), you must create the plservrc file:

1. Open a text editor, such as Wordpad or Notepad.
2. Copy the license string into the empty file, removing any embedded carriage returns. Then, add a carriage return to the end of the data. (A carriage return is required at the end of each line.)
3. From the File menu, select Save as. Enter the appropriate path and filename for %MPSHOME%\PERIplic\etc\plservrc. See Installation Procedures on page 23 for information about the value for the %MPSHOME% variable.
4. Using Windows Explorer, make sure file extensions are visible. (Go to **Tools** > **Folder Options** > **View Tab** > **Advanced Settings** and clear Hide file extension for known file types.)
5. Using Windows Explorer, go to the Save directory and select plservrc.txt. Right-click and choose Rename. Remove the .txt extension. Choose Yes when prompted to confirm the changed name.
6. Run the plicmon utility with the -f option, see The plicmon Utility on page 29, to verify the integrity of the plservrc file.
7. Stop and restart the license server process, see Starting and Stopping the License Server on page 198, or reboot the system to have the license server read the latest keycode information.

Existing License File

If the plservrc file already exists, either from another Avaya software product or from an upgrade, you must add the keycode for the new installation to this file.

Caution:

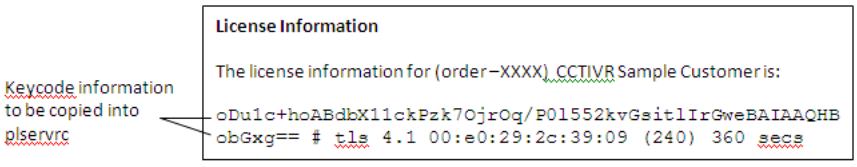
Avaya strongly recommends creating a backup copy of the plservrc file before performing any editing. For information about backing up files, see the MPS System Operator's Guide.

To edit the plservrc file:

1. Open the %MPSHOME%\PERIplic\etc\plservrc file in a standard text editor such as Wordpad or Notepad. See Installation Procedures on page 23 for information about the value for the %MPSHOME% variable.
2. Copy the license string into the existing file, removing any embedded carriage returns. Then, add a carriage return to the end of the data.
3. From the File menu, select Save. Choose Yes when prompted to replace the older version of the file on disk.
4. Run the plicmon utility with the -f option, see The plicmon Utility on page 29, to verify the integrity of the plservrc file.
5. Stop and restart the license server process, see Starting and Stopping the License Server on page 198, or reboot the system to have the license server read the latest keycode information.

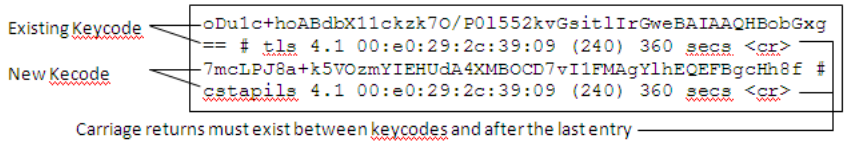
License File Example

The following are examples of keycode information:



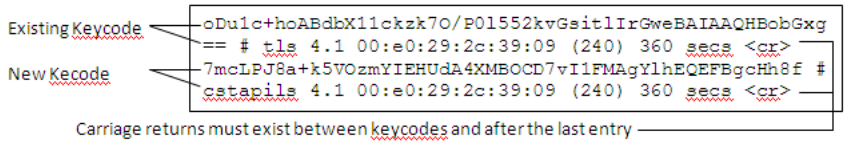
The previous example requires two lines because of the page space limitations of this document. The actual information is never sent with a carriage return embedded in the keycode. However, web-based systems interpret and format messages to their own specifications and a line break may be inserted by the receiving system. Make sure you remove any carriage returns that are embedded in the data.

If the plservrc file already contains licensing information (either from another Avaya software product or from an upgrade), you must add new keycode information to the file. There must be a carriage return between each keycode and after the last keycode. For example:



For software installations with release 2.0.4 or earlier, licenses for CSTAPILS and CSRSMLS were granted on a per client basis without device limitations. For releases 2.1 and later, licensing is based on the number of devices.

If you are running the license server on the CCT server machine, you must also enter a keycode for plicd in plservrc. For example:



The plicmon Utility

Use the plicmon utility to query the contents and test the validity of license files. You must run this utility from a command prompt.

Generally, you run this command as plicmon -f only, to confirm that the plservrc file was edited correctly. Use the following options as needed.

```
plicmon <hostname>|-b|-f [<file>]|-p <#>|-t <sec>
```

Option	Explanation
`<hostname>`	Shows the license keys running on the specified host.
`-b`	Queries the network and displays the names of the hosts that are running license servers.
`-f [<file>]`	Decodes and displays the license keys contained in the optionally specified file. If a file name is not included, the keycodes in the default licensing file (plservrc) are shown.
`-p <#>`	Shows the port number through which the connection to the license server is established.
`-t <sec>`	Sets the license server response timeout limit, in seconds. If this option is not specified, the timeout defaults to 10 seconds.

Antivirus Software

To ensure the highest level of security, Avaya suggests the use of antivirus software on the CCT Server. The CCTIVR packages are tested to be compatible with McAfee Virus Scan, Norton AntiVirus, and Trend Micro ServerProtect software.

The risk of virus infection on a CCT Server is minimal due to the limited administrative access required to support the server. However, there is a need for antivirus software on any Windows-based PC. Avaya recommends the following regarding antivirus software:

- When installing or upgrading system software, you must first disable all antivirus functions (such as firewalls, passive scanning, auto updates, and so on). Do not start antivirus functions again until the entire CCTIVR installation procedure is complete.
- Virus scan software places additional load on the CCT Server. Automatic virus scans should be set to run on the CCT Server during off-peak hours only. If you need to run manual scans during normal operations, use the Windows Performance Monitor to monitor CPU utilization.
- Antivirus software can be configured to automatically repair infected files. If an infected file cannot be automatically repaired, do not attempt to replace or remove it. Instead, contact your distributor or support representative for assistance.
- To reduce the risk of downloading infected files, download virus definitions and file updates to another computer on the network and then manually load them onto the CCT Server. Do not connect the CCT Server directly to the Internet to download virus definitions and file updates.
- To minimize the risk of introducing infected files from outside sources, scan all DVD-ROMs, CD-ROMs, and floppy disks before installing or uploading files to the CCT Server.
- Use the latest version of antivirus software available. Avaya recommends the following packages:
  - McAfee Virus Scan (version 6.02 or later)
  - Norton Anti Virus Corporate Edition (version 7.6 or later)
  - Trend Micro ServerProtect 5 (version 5.31.0.5165 or later)

Warning:

System performance is affected by the complexity and resource utilization of IVR applications. If a sufficient number of resource-intensive applications are running at the same time, system performance may be affected by the use of antivirus software.

Chapter 3: CCTIVR Configurator

This chapter covers:

1. Using the CCTIVR Configurator in MPS Manager to configure your system
2. CCMS Host Data Exchange (Bidirectional) Interface

Introduction to the MPS Control Center

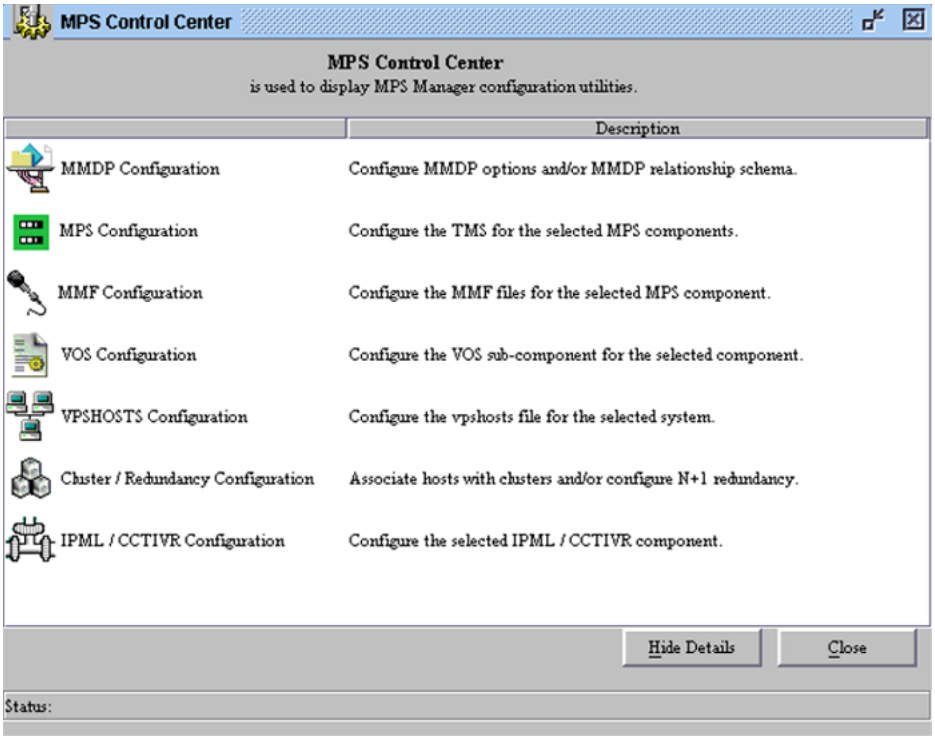
The MPS Control Center contains the following tools:

- MMDP Configuration
- MPS Configuration
- MMF Configuration
- VOS Configuration
- VpsHosts Configuration
- Cluster/Redundancy Configuration
- IPML/CCTIVR Configuration

This section guides you through the IPML/CCTIVR Configurator.

IPML/CCTIVR Configuration

The following window shows the MPS Control Center options.



Use the IPML/CCTIVR Configuration to graphically change configuration files.

Locate the Node to Configure

Before using the IPML/CCTIVR Configuration you must locate the node to configure by performing the following steps.

1. Navigate through the directory structure to locate the node to configure.
2. Click the IPML/CCTIVR Configuration icon.

   You can now choose the packages to configure

Important:

Only the node containing the CCTIVR configuration activates the CCTIVR utility. If the utility is not activated, the footnote displays the "Invalid selection in the Topology tree" message.

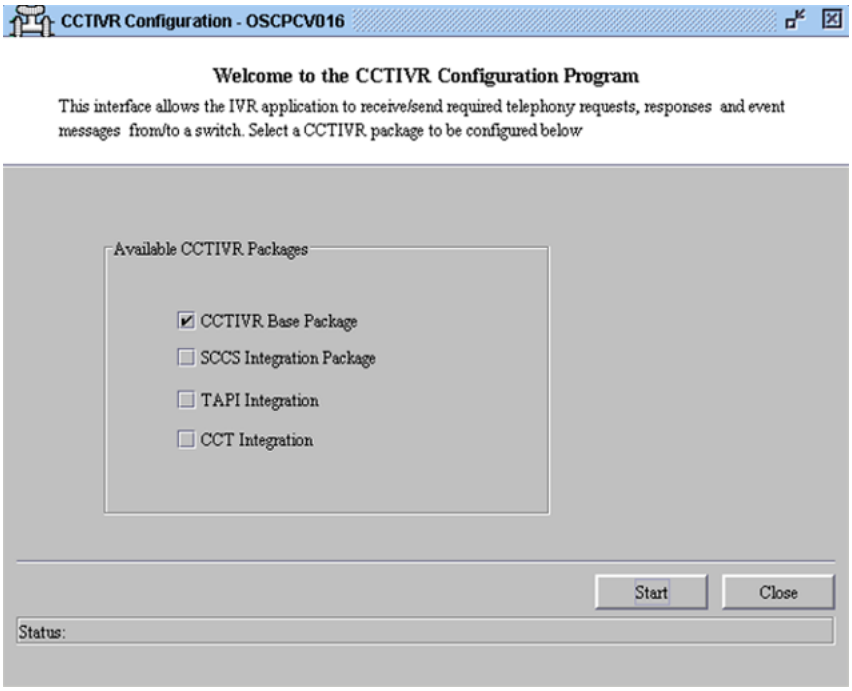
Only one instance of the CCTIVR utility for the node can be active at any given time.

Choose the Packages to Configure

The Welcome to the CCTIVR Configuration Program window shows the packages you can configure. Depending on the choices you make in this window, certain windows may or may not appear throughout the rest of the wizard.

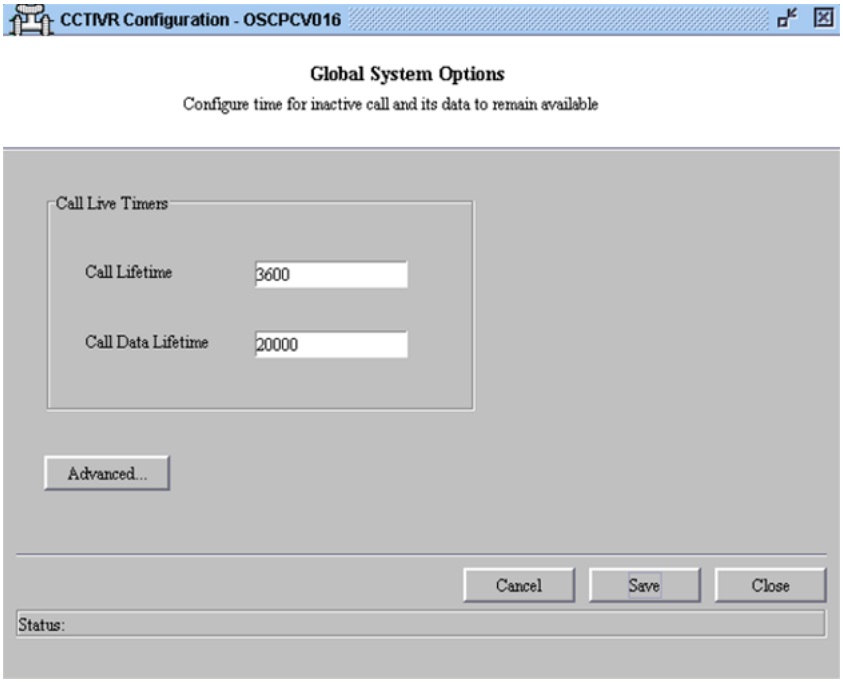
To choose the packages to configure:

1. Select each package you want to configure. Because the base package is required, CCTIVR Base Package is always selected.

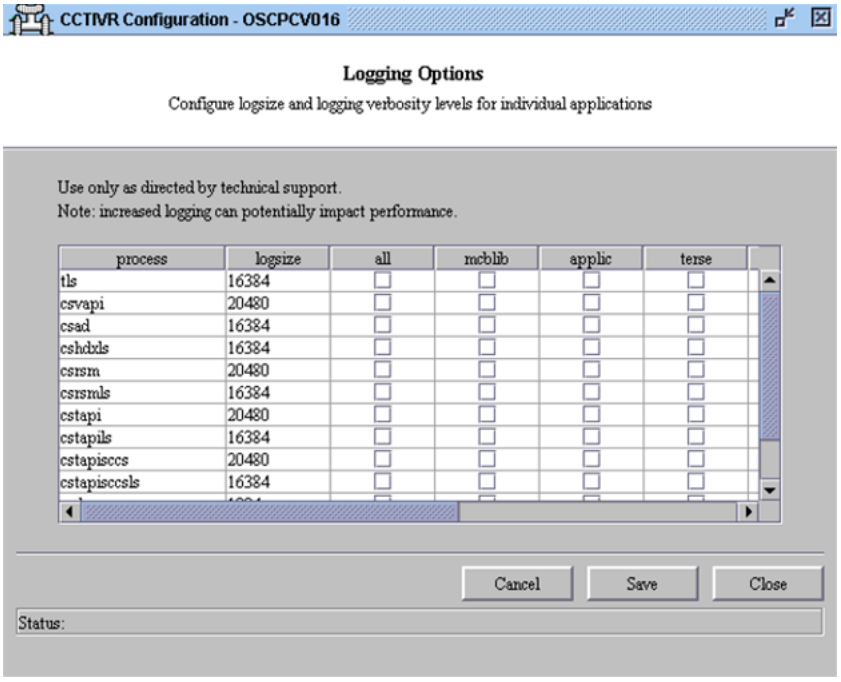


2. Click Start.

   The Global System Options window appears. The window provides options that csad uses for the call data.



3. Click Advanced to view the Logging Options window. This window lists CCTIVR-specific processes and configures the way logging is performed on each process.



The following table shows which windows appear based on the packages you choose. The rest of this chapter describes each of the windows in order.

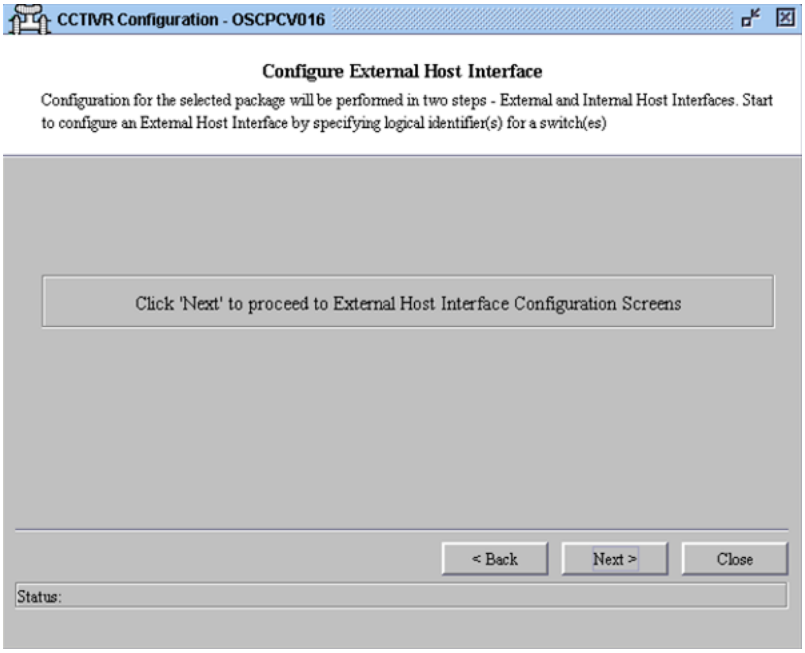
Window in the CCTIVR Configurator	CCTIVR Base Package only	CCTIVR Base Package plus CCTIVR Contact CenterInterfaces	CCTIVR Base Package plus CCTIVRData	CCT IVR Base plus CCTIVRData plus CCTIVR Contact Center Interfaces
Configure External Host Interface	X	X	X	X
Telephony Link Server Identifier	X	X	X	X
Telephony Link Server Interface	X	X	X	X
Telephony Link Interface	X	X	X	X
CCMS Host Data Exchange (Bidirectional) Interface (three windows)		X		X
Server Side Connection for CCMS Server for Real-Time Stats (two windows)		X		X
CCMS Server Connection to Send Data Only (three windows)		X		X
TAPI Server connection to Symposium Microsoft TAPI Server (three windows)			X	X
Configure Internal Host Interface	X	X	X	X
CTI Connection to the IVR (two windows)	X	X	X	X
Advanced Options: CSVAPI	X	X	X	X
Real-Time Agent Stats Connection to		X		X

Window in the CCTIVR Configurator	CCTIVR Base Package only	CCTIVR Base Package plus CCTIVR Contact CenterInterfaces	CCTIVR Base Package plus CCTIVRData	CCT IVR Base plus CCTIVRData plus CCTIVR Contact Center Interfaces
the IVR (two windows)				
Advanced Options: CSRSM		X		X
TAPI CCMS Connection to the IVR (two windows)		X		X
TAPI Connection to the IVR (two windows)			X	X

Telephony Link Server

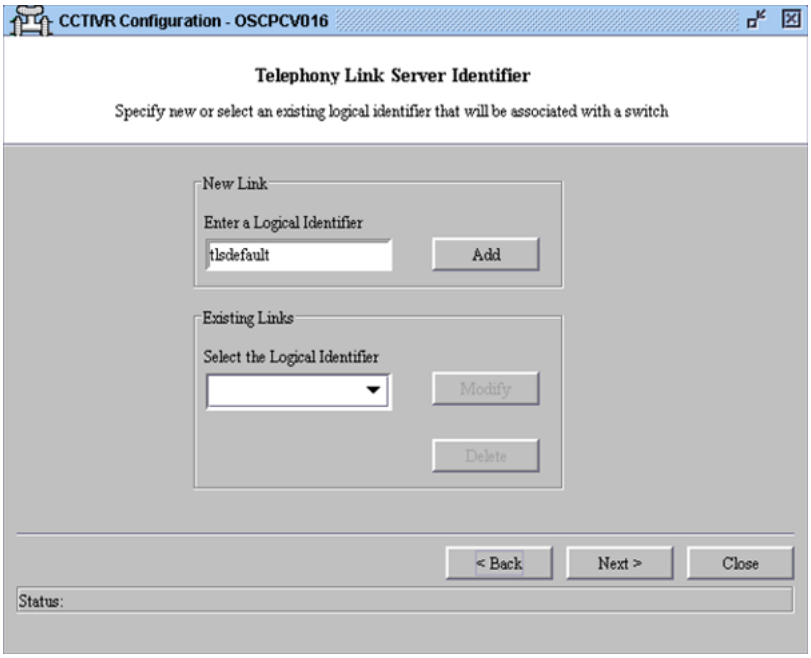
Use the steps in the following procedure to specify the new or existing telephony link server to associate with a switch.

The following windows always appear because they are used to configure the required CCTIVR Base Package.



1. In the Configure External Host Interface window, click Next.

   The Telephony Link Server Identifier window appears.



2. To use an existing link:

   a. In the Select the Logical Identifier box, choose the link and click Modify.

   b. Go to step 4.

If you do not need to make changes to a link or if you do not need to add a new link, click Skip and go to step 4.

Note:

The attributes displayed in the Telephony Link Server Interface window change depending on which switch type you select.

Note:

To delete an existing link, in the Select the Logical Identifier box, select the link and click Delete.

Note:

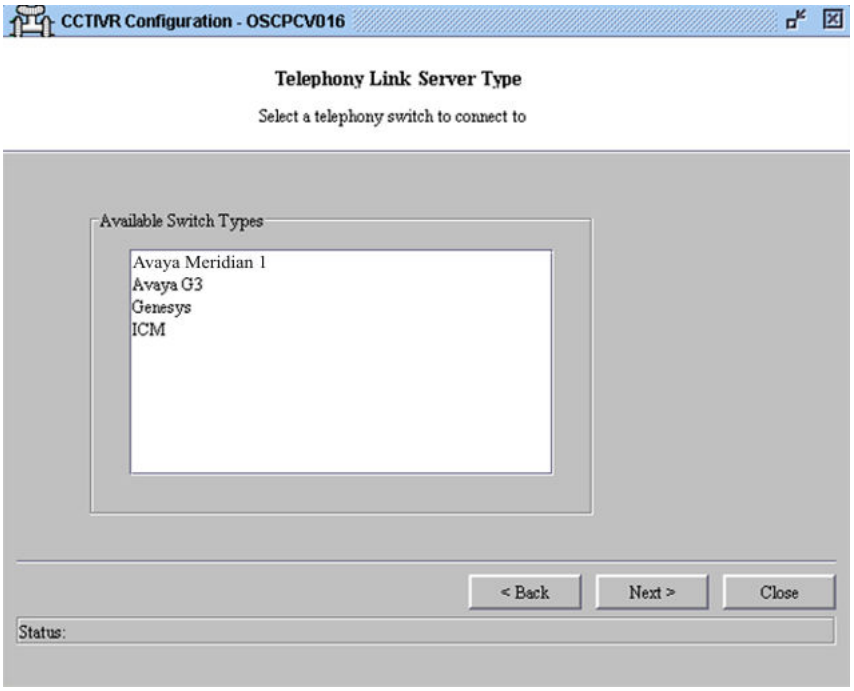
Avaya strongly recommends that you use tlsdefault for the Logical Identifier.

If tlsdefault already exists, but you need to change the switch type, first you must delete the existing tlsdefault Logical Identifier (See the previous Note 2 on how to delete an existing link). After deleting the existing tlsdefault Logical Identifier, re-add Logical Identifier tlsdefault with correct switch type (See step 3 on adding a new link).

3. To add a new link:

    a. In the Enter a Logical Identifier box, type a name and click Add.

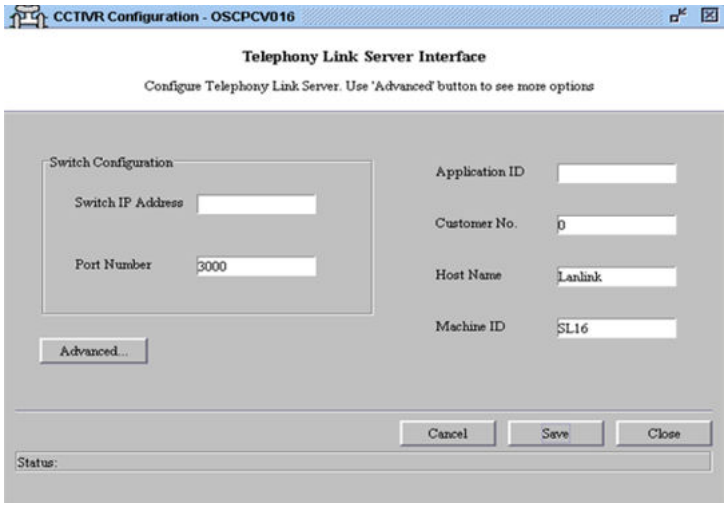
    The Telephony Link Server Type window appears.



b. The window that appears next depends on the switch you selected earlier. Go to the appropriate substep indicated below.

- For Meridian 1, go to substep (1).
- For Avaya G3, go to substep (2).
- For Genesys, go to substep (3).
- For ICM, go to substep (4).

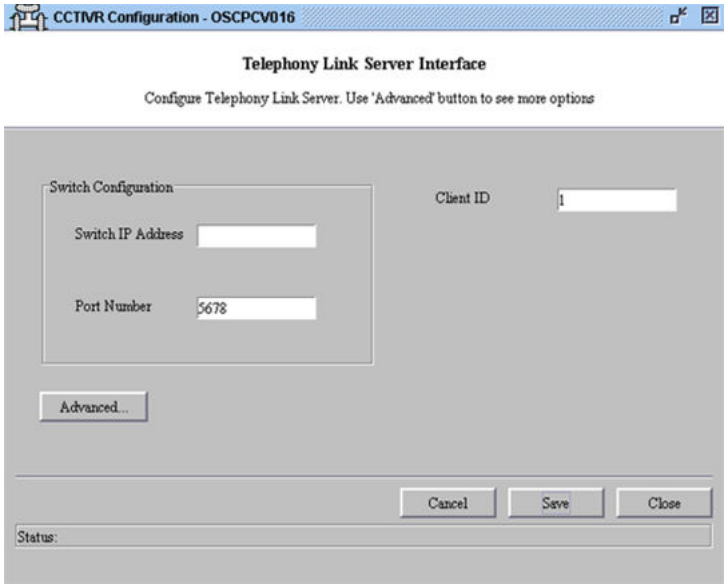
i. For Avaya Meridian 1, the following window appears.



Enter information in the window using the following table.

Field	Explanation
Switch IP Address	The IP address of the switch.
Port Number	The TCP/IP port of the switch.
Application ID	A unique name identifying this system to the switch (optional).
Customer No	The PBX customer number defined in the Customer Data block. Allows numbers 0 through 15.
Host Name	The host name for the Meridian Link/ MLSM.
Machine ID	The PBX machine name. Default is SL16.

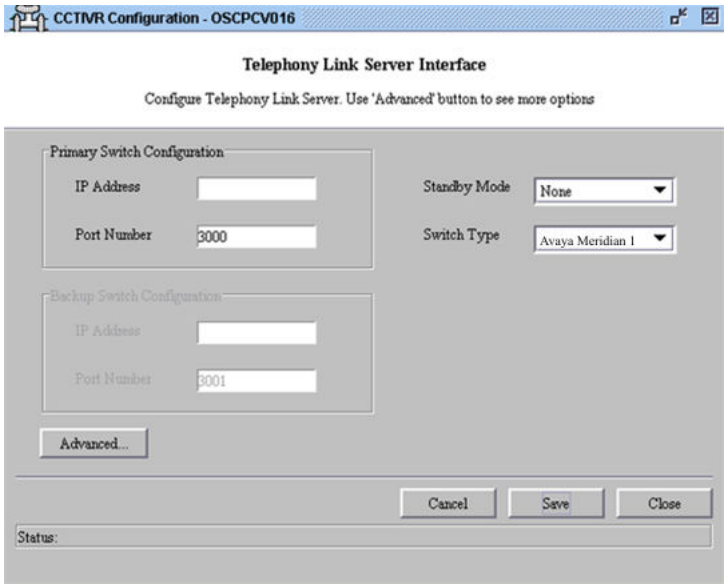
ii. For Avaya G3, the following window appears.



Enter information in the window using the following table.

Field	Explanation
Switch IP Address	Defines the IP address of the switch.
Port Number	Defines the TCP/IP port of the switch.
Client ID	Must match the client link configuration on the G3.

iii. For Genesys, the following window appears.



Enter information in the window using the following table.

Field	Explanation
Primary Switch Configuration	
IP Address	Defines the IP address of the primary switch.
Port Number	Defines the TCP/IP port of the primary switch.
Backup Switch Configuration	
IP Address	Defines the IP address of the backup switch.
Port Number	Defines the TCP/IP port of the backup switch.
Standby Mode	Use this menu to select the standby mode.
Switch Type	Use this menu to select the switch type to which the Genesys T-Server is connected.

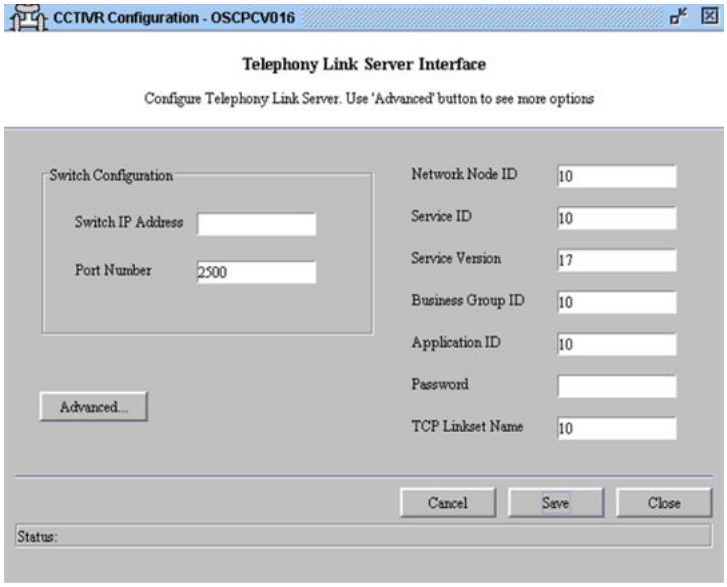
The following options are available for standby mode.

Value	Description
None	There is a single Genesys server in stand-alone mode.
Warm	There is a pair of Genesys servers. Calls are not guaranteed to be preserved across a changeover.
Hot	There is a pair of Genesys servers. Calls are preserved across a changeover. This configuration is not currently supported by the IPML server.

The following options are available for the switch type.

Value	Description
Avaya Meridian 1	The Genesys server is interfaced to a Meridian switch.
Avaya G3	The Genesys server is interfaced to an Avaya G3.

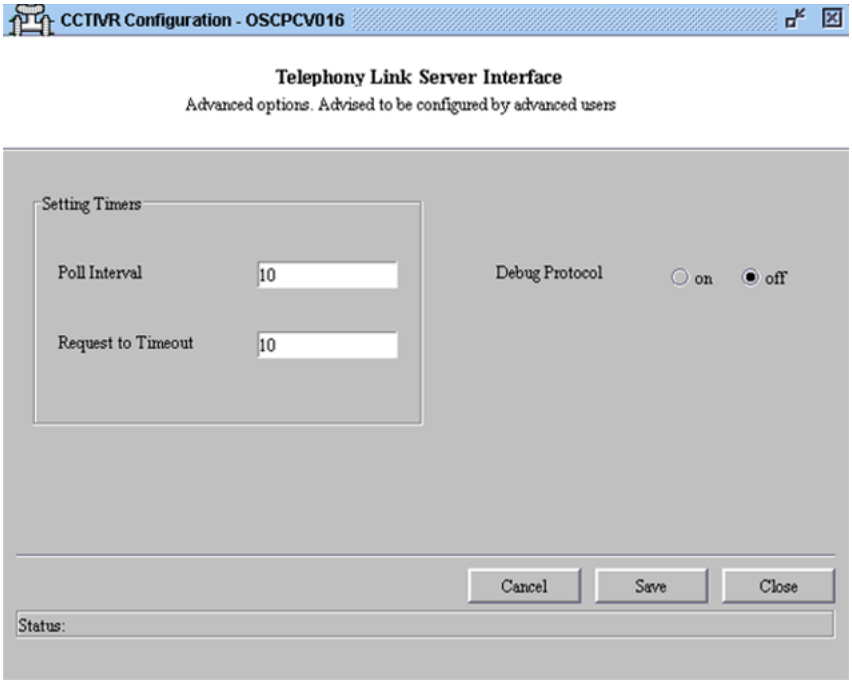
iv. For ICM, the following window appears.



Enter information in the window using the following table.

Field	Explanation
Switch IP Address	Defines the IP address of the switch.
Port Number	Defines the TCP/IP port of the switch.
Others	All other fields in this window match the configuration of the switch.

4. Click Advanced.



5. Enter information in the window using the following table, then click Save.

Field	Explanation
Poll Interval	Number of seconds to wait between polls. Allows values 10 through 120.
Request to Timeout	Number of seconds before a request times out. Allows values 10 through 300.
Debug Protocol	Enables protocol logging into the tls.log file.

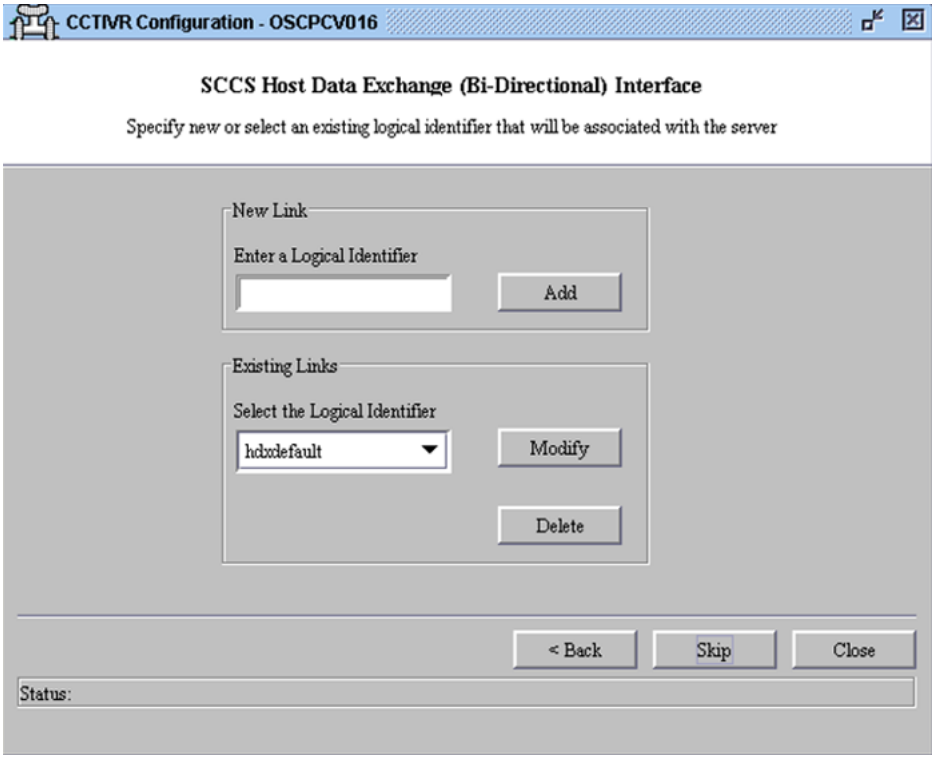
6. Click Save again.

Currently, CCTIVR supports multiple Link Server configuration, which means you can configure multiple tls, hdxls, rsmls, tapils (where ls stands for Link Server).

SCCS/CCMS Host Data Exchange (Bidirectional) Interface

Use the steps in the following procedure to specify the new or existing Host Data Exchange (HDX) application server to associate with SCCS/CCMS.

The following windows appear only if you are configuring the CCTIVR ContactCenterInterfaces package.



1. To use an existing link:
    a. In the Select the Logical Identifier box, select the link and click Modify.
    b. Go to step 2.

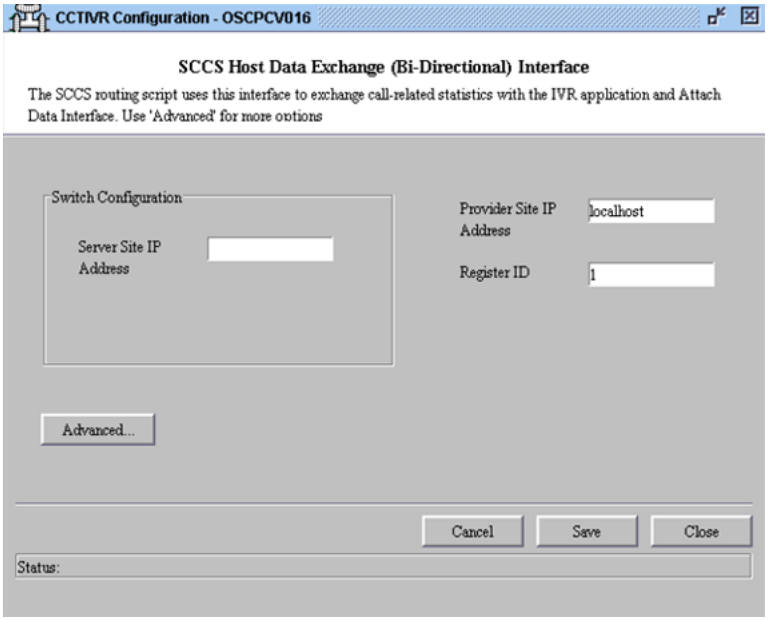
    Or to add a new link to use:

    c. In the Enter a Logical Identifier box, type a name and click Add.
    d. Go to step 2.

If you do not need to add a new link or make changes to an existing link, click Skip and go to step 2.

Note:

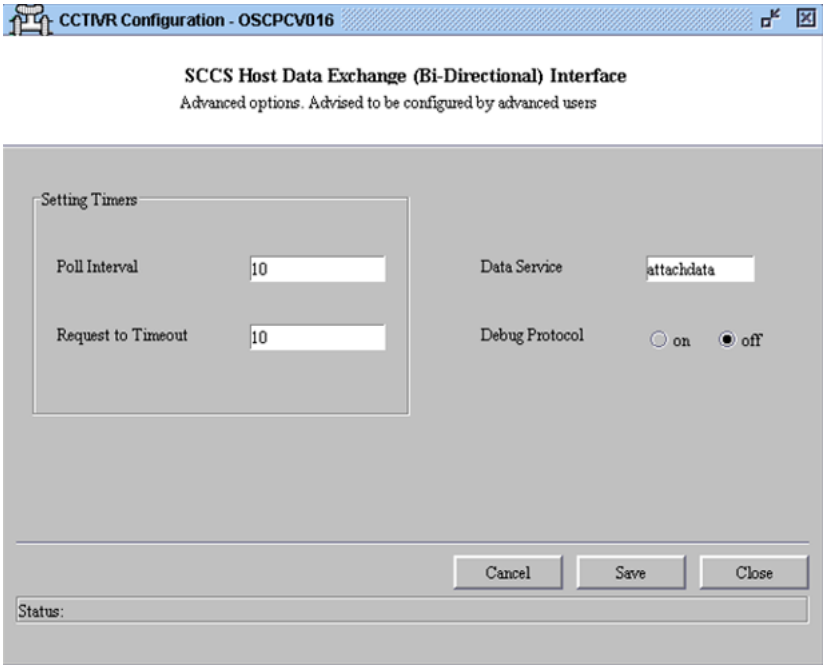
To remove an existing link, in the Select the Logical Identifier box, choose the link and click Delete.



2. Enter information in the window. The following table describes the fields and field descriptions.

Field	Explanation
Server Site IP Address	The IP address of the SCCS/CCMS.
Provider Site IP Address	The host name of IP address of the CCT Server.
Register ID	The numeric value of SCCS/CCMS.

3. Click Advanced.



4. Enter information in the window and click Save. The following table describes the fields.

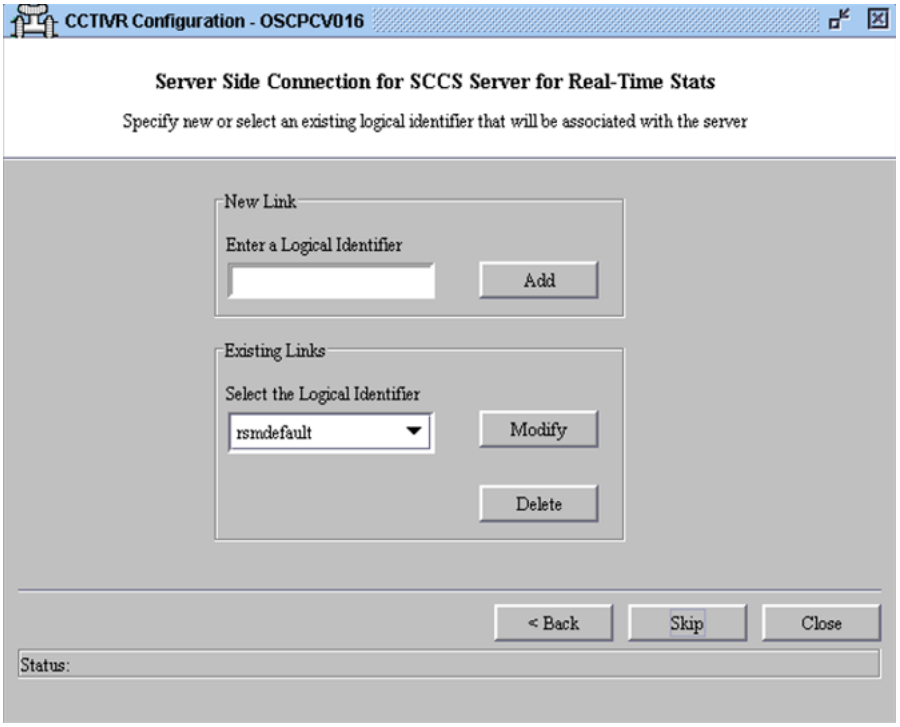
Field	Explanation
Poll Interval	The number of seconds to wait between polls. Allows values 10 through 120.
Request to Timeout	The number of seconds before a request times out. Allows values 10 through 300.
Data Service	The name of the Data Service.
Debug Protocol	The option to turn the debug protocol on or off.

5. Click Save again.
6. If you need to enter another HDX application server, repeat steps 1 through 5. Otherwise, click Next.

SCCS/CCMS Connection for Real-Time Stats

Use the steps in the following procedure to specify the new or existing CSRSM Link Server to associate with SCCS/CCMS.

The following windows appear only if you are configuring the CCTIVR ContactCenterInterfaces package.



1. To use an existing link:

    a. In the Select the Logical Identifier box, choose the link and click Modify.

    b. Go to step 2.

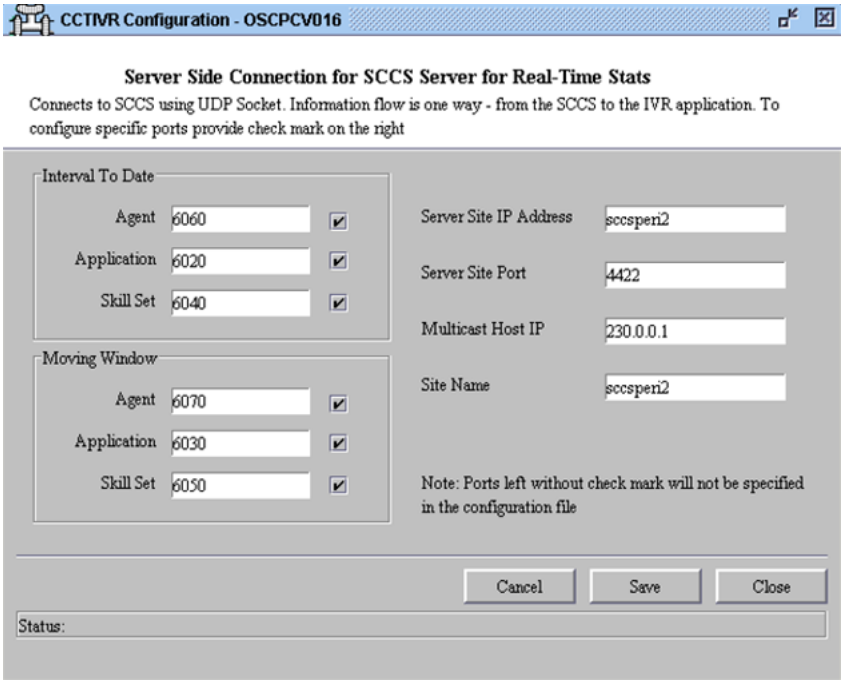
    Or to add a new link to use:

    c. In the Enter a Logical Identifier box, type the name and click Add.

    d. Go to step 2.

    If you do not need to make changes to a link or add a new one, click Skip and go to step 2.

    To remove an existing link, in the Select the Logical Identifier box, choose the link and click Delete.



2. Enter information in the window. The following table describes the fields. For each statistic to retrieve from a port, select the check mark next to it and enter the SCCS/CCMS port number.

Field		Explanation
Interval To Date		
	Agent	The port number to which the server sends cumulative statistics about the agent.
	Application	The port number to which the server sends cumulative statistics about the application.
	Skill Set	The port number to which the server sends cumulative statistics about the skillset.
Moving Window		
	Agent	The port number to which the server sends statistics about the agent over the period set in SCCS/CCMS.
	Application	The port number to which the server sends statistics about the application over the period set in SCCS/CCMS.
	Skill Set	The port number to which the server sends statistics about the skillset over the period set in SCCS/CCMS.
Server Site IP Address		The IP address of the SCCS/CCMS server.

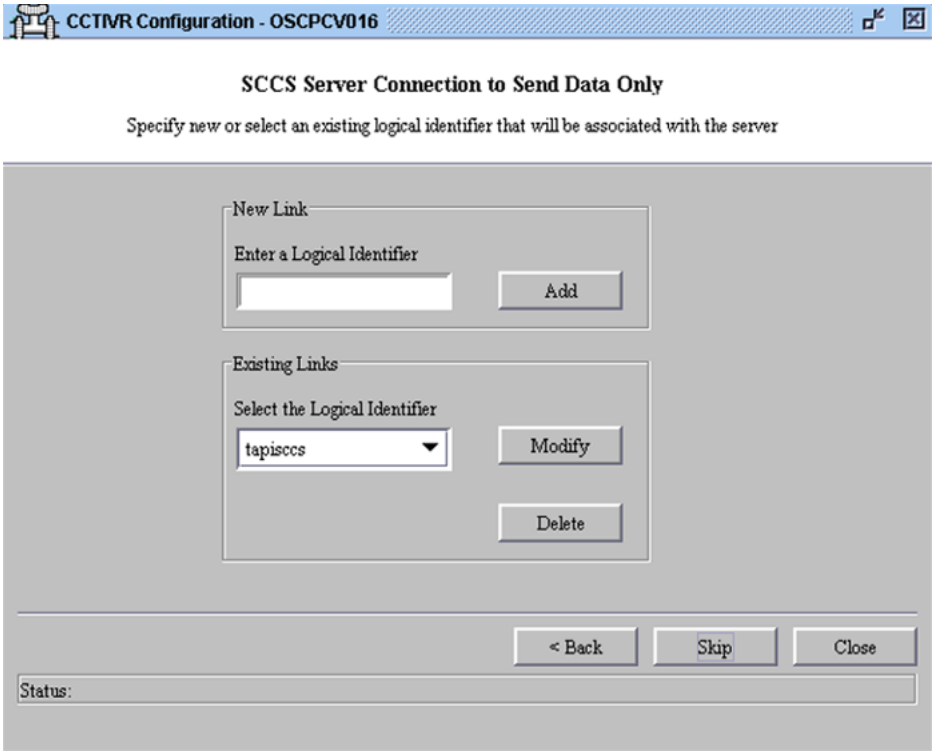
Field		Explanation
Server Site Port		The SCCS/CCMS server port that receives statistics.
Multicast Host IP		The IP address of the multicast group.
Site Name		The PBX machine name.

3. Click Save.
4. If you need to enter another CSRSM Link Server, repeat steps 1 through 3. Otherwise, click Next.

SCCS/CCMS Server Connection to Send Data Only

Use the steps in the following procedure to specify the new or existing TAPI Link Server to associate with the SCCS/CCMS.

The following windows appear only if you are configuring the CCTIVR ContactCenterInterfaces package.



1. To use an existing link:
    a. In the Select the Logical Identifier box, choose the link and click Modify.

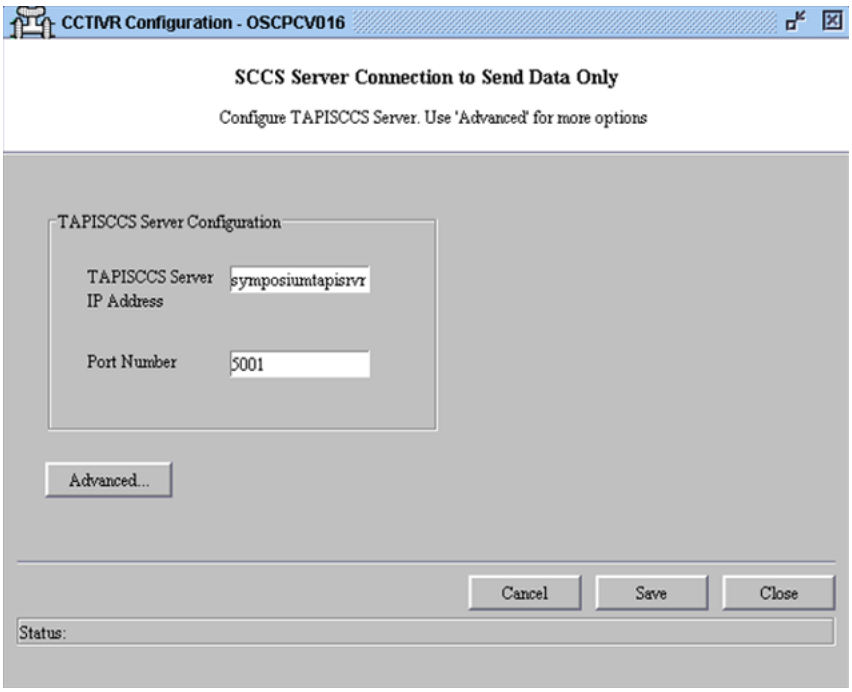
b. Go to step 2.

Or to add a new link to use:

c. In the Enter a Logical Identifier box, type the name and click Add.

d. Go to step 2.

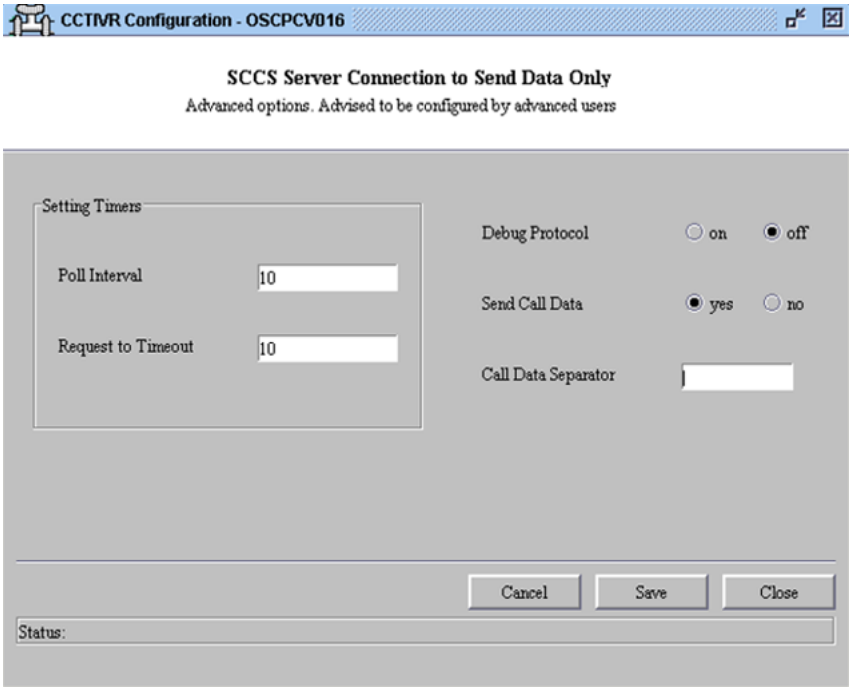
If you do not need to make changes to a link or add a new one, click Skip and go to step 2. To remove an existing link, in the Select the Logical Identifier box, choose the link and click Delete.



2. Enter information in the window. The following table describes the fields.

Field	Explanation
IPML Configurator (TAPI SCCS) Server IP Address	Name of the TAPI Link Server running on the socket.
Port Number	The TAPI Link Server connection port.

3. Click Advanced.



4. Enter information in the window and click Save. The following table describes the fields and field descriptions.

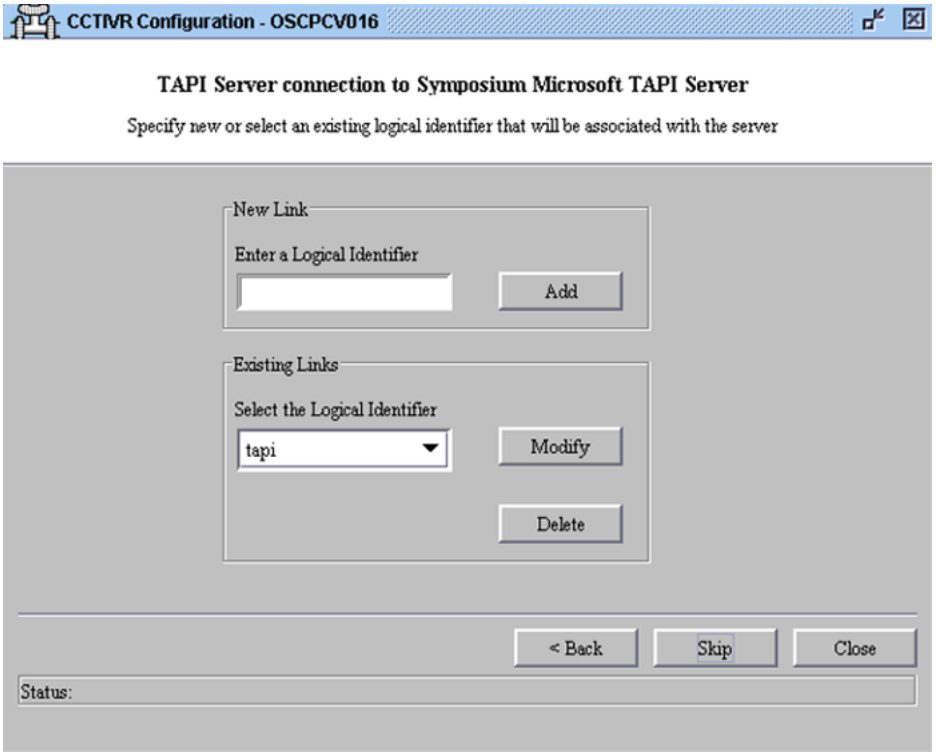
Field	Explanation
Poll Interval	Number of seconds between polls (10–120).
Request to Timeout	Number of seconds before the request times out (10–300).
Debug Protocol	Option to turn the debug protocol on or off.
Send Call Data	Options for sending call data. Yes sends both the call data key and call data value to the TAPI server. No sends only the call data value to the TAPI server.
Call Data Separator	The character to use to separate call data keys when sending data to the TAPI server. If you do not want to separate call data with a delimiter, use 0 (zero).

5. Click Save again.
6. If you need to enter another TAPI Link Server, repeat steps 1 through 5. Otherwise, click Next.

TAPI Server connection to Symposium/Contact Center Microsoft TAPI Server

Use the steps in the following procedure to specify the new or existing Symposium/ Contact Center Microsoft TAPI Link Server to associate with the TAPI server.

The following windows appear only if you are configuring the CCTIVR Base plus CCTIVRData package.



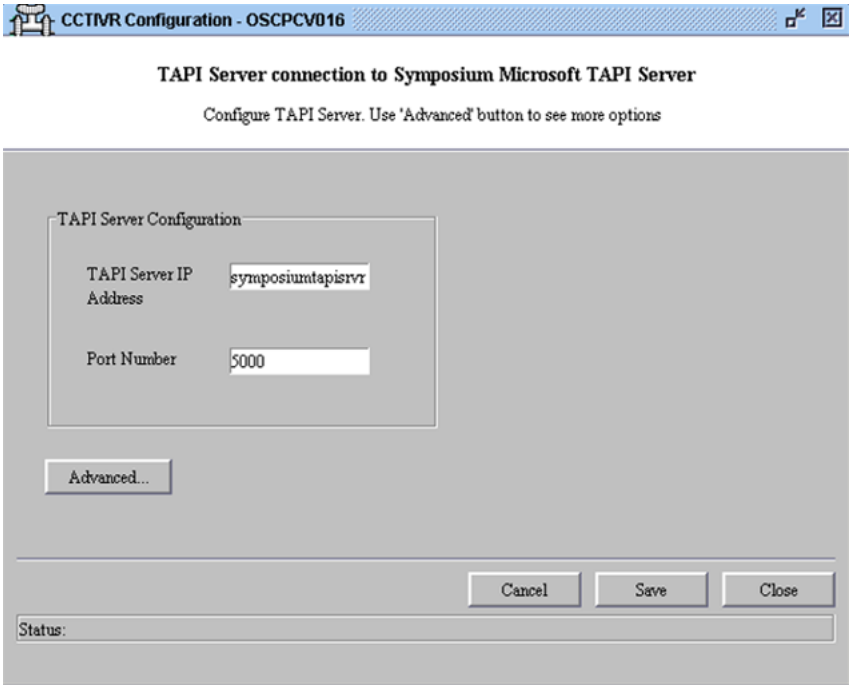
1. To use an existing link:
    a. In the Select the Logical Identifier box, choose the link and click Modify.
    b. Go to step 2.

    Or to add a new link to use:

    c. In the Enter a Logical Identifier box, type the name and click Add.
    d. Go to step 2.

    If you do not need to make changes to a link or add a new one, click Skip and go to step 2.

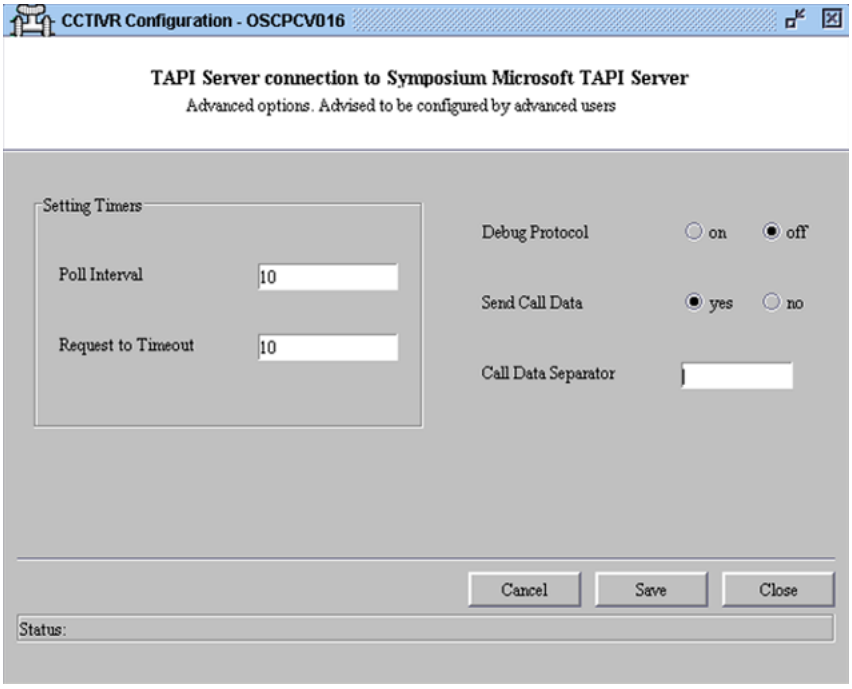
To remove an existing link, in the Select the Logical Identifier box, choose the link and click Delete.



2. Enter information in the window. The following table describes the fields.

Field	Explanation
TAPI Server IP Address	The host name of the telephony Link Server running on the socket.
Port Number	The listening port of the TAPI server.

3. Click Advanced.



4. Enter information in the window and click Save. The following table describes the fields.

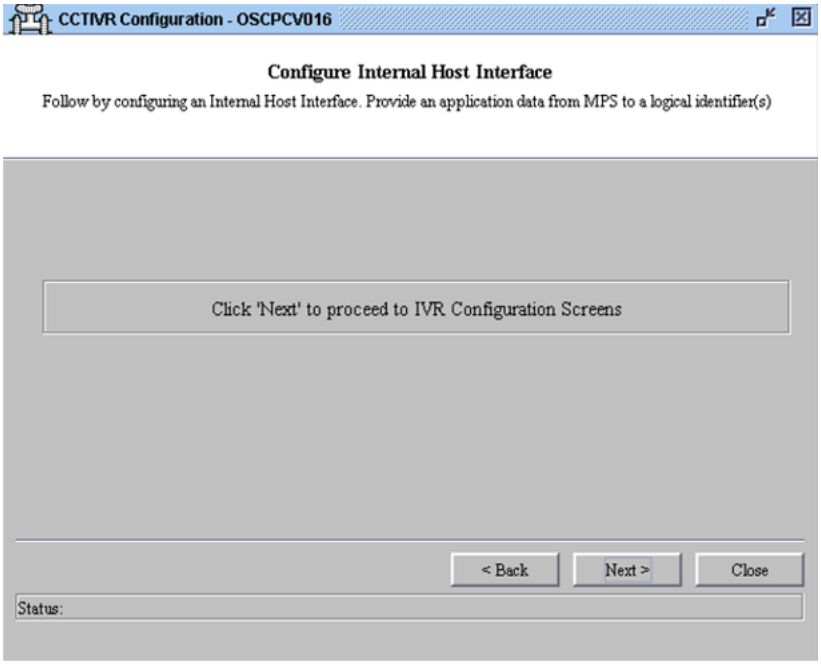
Field	Explanation
Poll Interval	Number of seconds between polls (10-120)
Request to Timeout	Number of seconds before the request times out (10-300)
Debug Protocol	Option to turn the debug protocol on or off.
Send Call Data	Option for sending call data. Yes sends both the call data key and call data value to the TAPI server. No sends only the call data value to the TAPI server.
Call Data Separator	The character to use to separate call data key when sending data to the TAPI server. If you do not want to separate call data with a delimiter, use 0 (zero).

5. Click Save again.
6. If you need to enter another CCMS Microsoft TAPI Link Server, repeat steps 1 through 5. Otherwise, click Next.

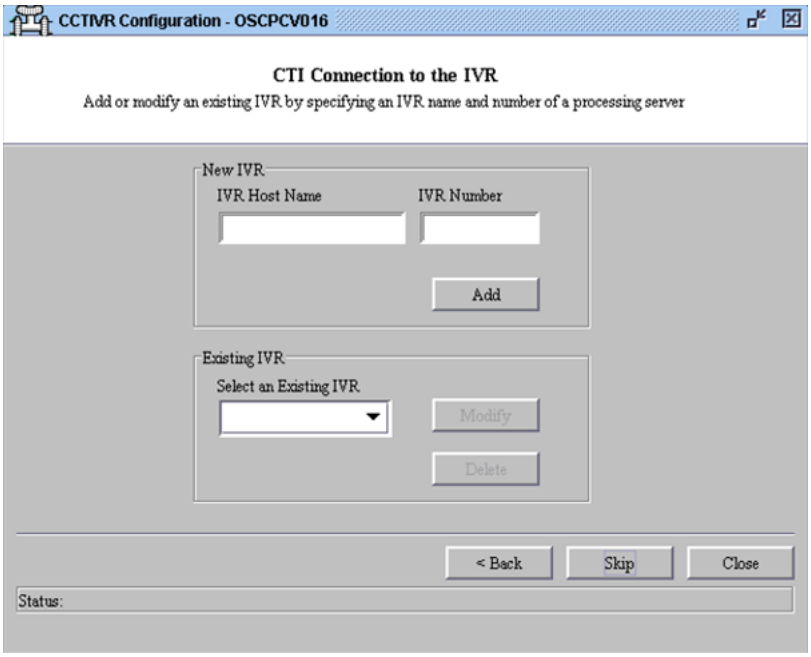
CTI Connection to the IVR

Use the steps in the following procedure to add or modify connections from CTI to the IVR.

The following windows always appear during configuration because they are used to configure the required base package.



1. In the Configure Internal Host Interface window, click Next.



2. To use an existing IVR:
    a. In the Select the Existing IVR box, choose the link and click Modify.
    b. Go to step 2.

Or to add a new IVR to use:

c. In the IVR Host Name box, type the name of the provider application to use when communication is initiated.

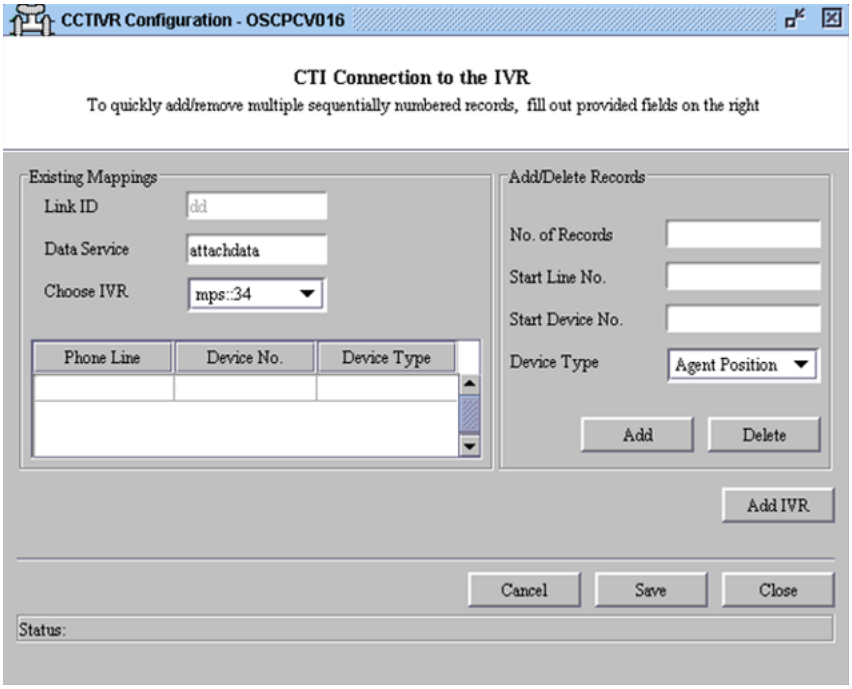
d. In the IVR Number box, type the number that identifies this IVR.

e. Click Add.

f. Go to step 2.

If you do not need to make changes to an IVR or add a new one, click Skip and go to step 3.

To remove an existing link, in the Select an Existing IVR box, choose the IVR and click Delete.



3. Select the IVR from the Choose IVR list.

4. To add a device, enter information in the window and then click Add. The following table describes the fields.

Field or button	Explanation
No. of Records	The number of devices that will be entered into the table.
Start Line No.	The starting phone line number.
Start Device No.	The starting device number.
Device Type	The device type for the registered device. The following are the valid selections for Device Type. Agent position--An agent's desktop. CDN--Controlled DN. Queue--Call Queue.

Field or button	Explanation
	Virtual Queue--Permits registration on Avaya systems. Select this option on Avaya systems only.

You can also quickly add or change information by typing directly in the grid in the Existing Mappings area.

To delete a device, enter information in the window and then click Delete. The following table describes the fields and field descriptions.

Field or button	Explanation
No. of Records	The number of devices that will be entered into the table.
Start Line No.	The starting phone line number.
Start Device No.	The starting device number.
Device Type	The device type for the registered device. The following are the valid selections for Device Type. Agent position--An agent's desktop. CDN--Controlled DN. Queue--Call Queue. Virtual Queue--Permits registration on Avaya systems. Select this option on Avaya systems only.

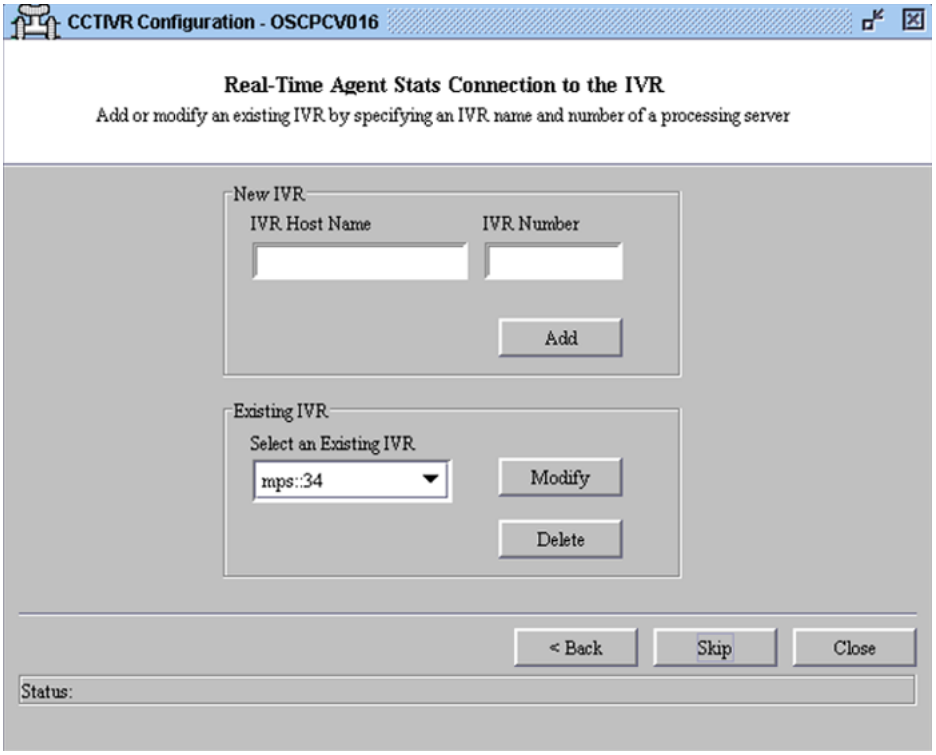
You can also quickly remove records by clicking the record in the grid and then clicking Delete.

5. To add another IVR, click Add IVR and repeat steps 2 and 3. Otherwise, click Save.

Real-Time Agent Stats Connection to the IVR

Use the steps in the following procedure to add or modify connections from CSRSM to the IVR.

The following windows appear only if you are configuring the CCTIVR Base plus CCTIVR ContactCenterInterfaces package.



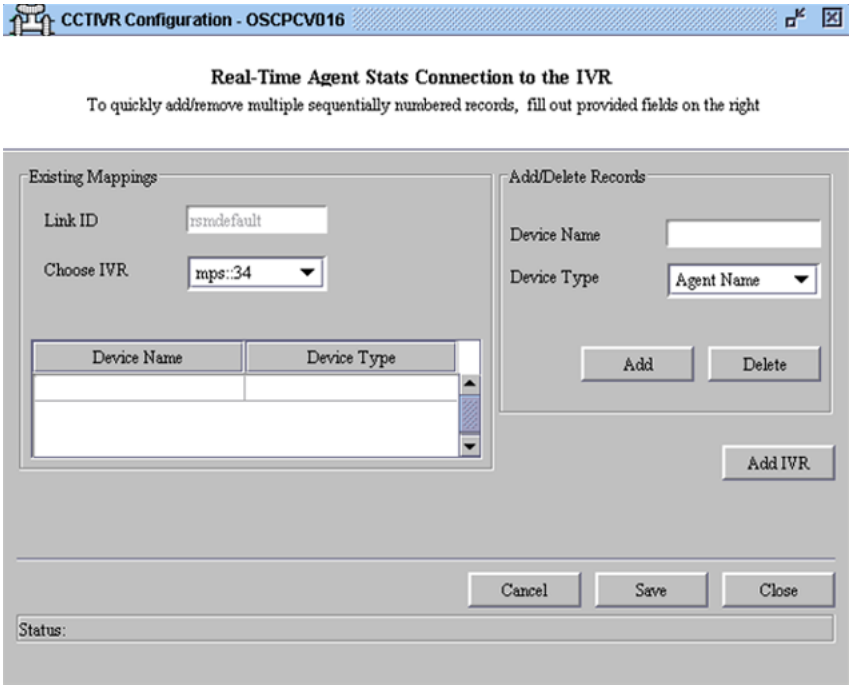
1. To use an existing IVR:
    a. In the Select the Existing IVR box, choose the link and click Modify.
    b. Go to step 2.

    Or to add a new IVR to use:

    c. In the IVR Hostname box, type the name of the provider application to use when communication is initiated.
    d. In the IVR Number box, type the number that identifies this IVR.
    e. Click Add.
    f. Go to step 2.

If you do not need to make changes to an IVR or add a new one, click Skip and go to step 2.

To remove an existing link, choose the IVR in the Select an Existing IVR box and click Delete.



2. From the Choose IVR list, select the IVR.
3. To add a record, enter the information in the window and click Add.

Field/Button	Explanation
Device Name	The name for the device.
Device Type	The device type for the registered device. The following are the valid selections for Device Type. Agent position--An agent's desktop. CDN--Controlled DN. Queue--Call Queue. Virtual Queue--Permits registration on Avaya systems. Select this option on Avaya systems only.

You can also quickly add or change information by typing directly in the box in the Existing Mappings area.

4. To delete a record, enter information in the window and click Delete. The following table describes the fields and field descriptions.

Field/Button	Explanation
Device Name	The name of the device to remove.
Device Type	The device type for the registered device. The following are the valid selections for Device Type. Agent position--An agent's desktop. CDN--Controlled DN. Queue--Call Queue. Virtual Queue--Permits registration on Avaya systems. Select this option on Avaya systems only.

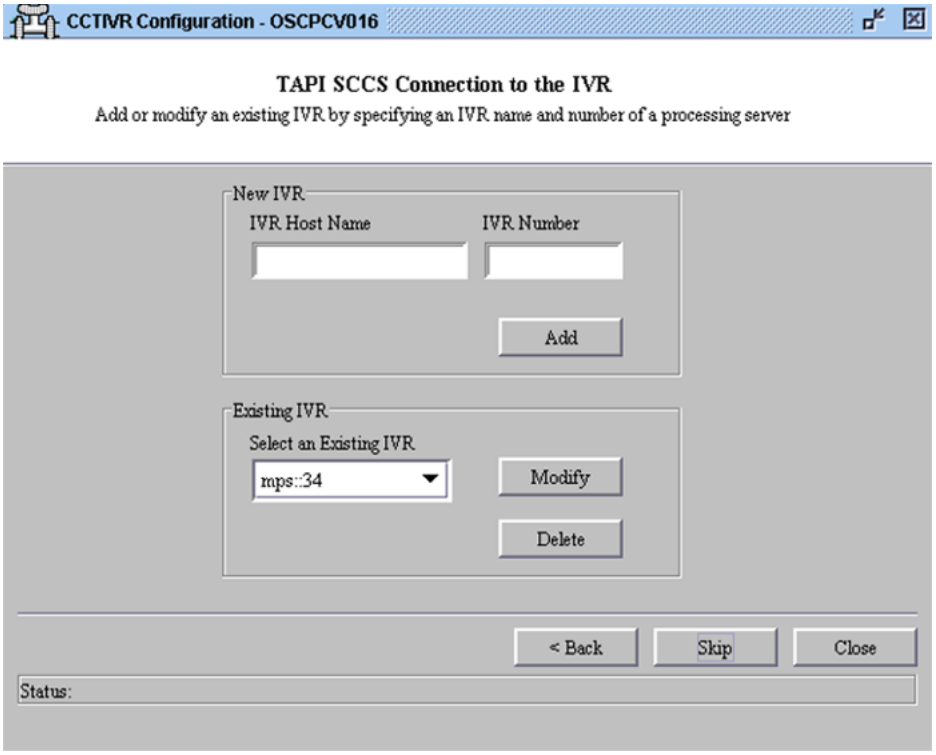
You can also quickly remove records by clicking the record in the grid and clicking Delete.

5. To add another IVR, click Add IVR and repeat steps 2 and 3. Otherwise, click Save.

IPML Configurator (TAPI SCCS) CCMS Connection to the IVR

Use the steps in the following procedure to add or modify connections from CSTAPI to the IVR.

The following windows appear if you are configuring the CCTIVR Base plus CCTIVR ContactCenterInterfaces package.



1. To use an existing IVR:
    a. In the Select the Existing IVR box, choose the link and click Modify.
    b. Go to step 2.

    Or to add a new IVR to use:

    c. In the IVR Hostname box, type the name of the provider application to use when communication is initiated.

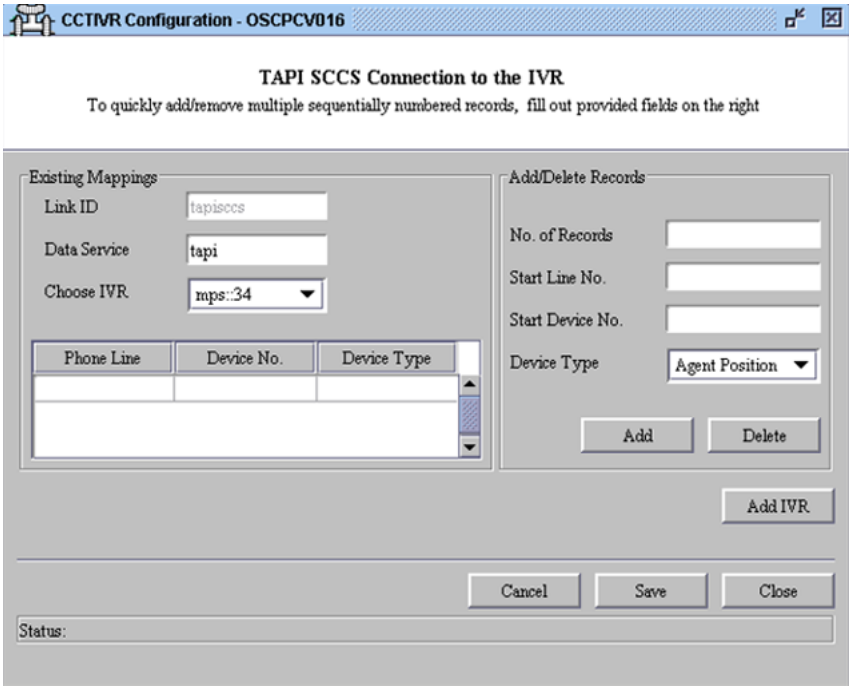
d. In the IVR Number box, type the number that identifies this IVR.

e. Click Add.

f. Go to step 2.

If you do not need to make changes to an IVR or add a new one, click Skip and go to step 2.

To remove an existing link, In the Select an Existing IVR box, choose the IVR and click Delete.



2. From the Choose IVR list, select the IVR.
3. To add a device, enter information in the window and click Add. The following table describes the fields and field descriptions.

Field or button	Explanation
No. of Records	The number of devices that will be entered into the table.
Start Line No.	The starting phone line number.
Start Device No.	The starting device number.
Device Type	Sets device type for the registered device. The following are the valid selections for Device Type. Agent position--An agent's desktop. CDN--Controlled DN. Queue--Call Queue. Virtual Queue--Permits registration on Avaya systems. Select this option on Avaya systems only.

You can also quickly add or change information by typing directly in the box in the Existing Mappings area.

4. To delete a device, enter information in the window and click Delete. The following table describes the fields and field descriptions.

Field or button	Explanation
No. of Records	The number of devices that will be removed from the table.
Start Line No.	The starting phone line number.
Start Device No.	The starting device number.
Device Type	Sets device type for the registered device. The following are the valid selections for Device Type. Agent position--An agent's desktop. CDN--Controlled DN. Queue--Call Queue. Virtual Queue--Permits registration on Avaya systems. Select this option on Avaya systems only.

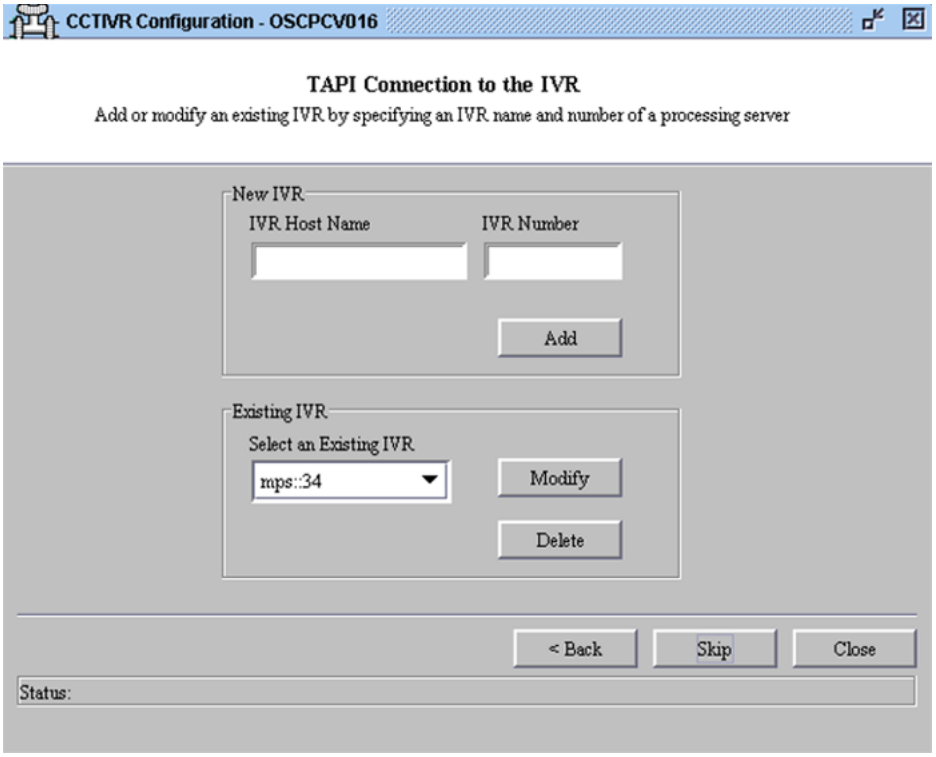
You can also quickly remove records by clicking the record in the grid and then clicking Delete.

5. To add another IVR, click Add IVR and repeat steps 2 and 3. Otherwise, click Save.

TAPI Connection to the IVR

Use the steps in the following procedure to add or modify connections from CSTAPI to the IVR.

The following windows appear if you are configuring the CCTIVR Base plus CCTIVRData package.



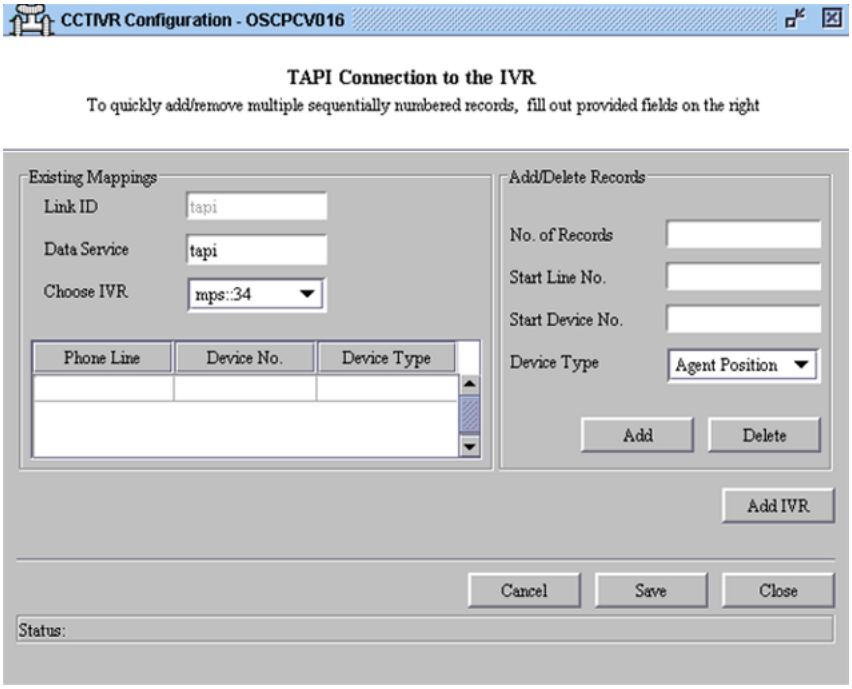
1. To use an existing IVR:
    a. In the Select the Existing IVR box, choose the link and click Modify.
    b. Go to step 2.

    Or to add a new IVR to use:

    c. In the IVR Host Name box, type the name of the provider application to use when communication is initiated.
    d. In the IVR Number box, type the number that identifies this IVR.
    e. Click Add.
    f. Go to step 2.

To remove an existing link, choose the link in the Select the Logical Identifier box and click Delete.

The following figure shows TAPI Connection to the IVR window.



2. From the Choose IVR list, select the IVR.
3. To add a device, enter information in the window and click Add. The following table describes the fields.

Field or button	Explanation
No. of Records	The number of devices that will be entered into the table.
Start Line No.	The starting phone line number.
Start Device No.	The starting device number.
Device Type	The device type for the registered device. The following are the valid selections for Device Type. Agent position--An agent's desktop. CDN--Controlled DN. Queue--Call Queue. Virtual Queue--Permits registration on Avaya systems. Select this option on Avaya systems only.

You can also quickly add or change information by typing directly in the grid in the Existing Mappings area.

4. To delete a device, enter information in the window and click Delete. The following table describes the fields.

Field or button	Explanation
No. of Records	The number of devices that will be removed from the table.
Start Line No.	The starting phone line number.
Start Device No.	The starting device number.

Field or button	Explanation
Device Type	The device type for the registered device. The following are the valid selections for Device Type. Agent position--An agent's desktop. CDN--Controlled DN. Queue--Call Queue. Virtual Queue--Permits registration on Avaya systems. Select this option on Avaya systems only.

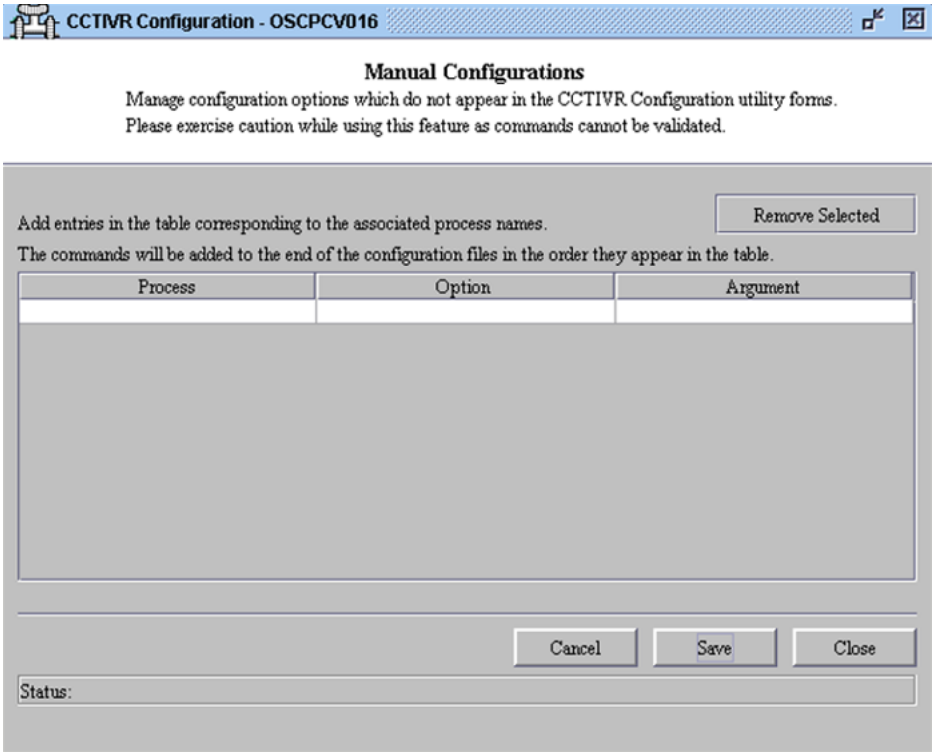
You can also quickly remove records by clicking the record in the grid and clicking Delete.

5. To add another IVR, click Add IVR and repeat steps 2 and 3. Otherwise, click Save.

Manual Configurations

Use the Manual Configurations window to enter user-defined process commands for various processes (configuration files).

The Manual Configurations window appears at the end of the CCTIVR Configuration windows.



1. To add a command to a configuration file, enter information in the window and click Save.

The following table describes the fields.

Field	Explanation
Process	Enter the process name for the name of the configuration file. For example, enter tls for tls.cfg.
Option	Enter the option name (command) you want add to the configuration file. For example, if the command tls-genesys start needs to be added to the tls.cfg file, then enter tls-genesys for the option.
Argument	Enter the argument corresponding to the option name (command). For example, the enter the start argument, so the tls-genesys start command can then be added to the tls.cfg file.

Important:

When you add commands using the Manual Configurations panel the commands are appended to the corresponding configuration files. If you modify a configuration file, then the corresponding component must be restarted for the changes to take place.

2. You can remove commands that were added using the Manual Configurations panel from the configuration files. To remove a command. Follow these steps:
    a. Select the table row entry you want to delete.
    b. Click Remove Selected.

Chapter 4: Status Commands

This chapter covers:

1. SRP Options
2. TLS Options
3. CSVAPI Options
4. CSAD Options
5. CSRSM Options
6. CSRSMLS Options
7. CSHDXLS Options
8. CSTAPI Options
9. CSTAPILS Options
10. MCB Options
11. CCTSP Options

Introduction to Status Commands

This section documents the command line options for verifying system configuration information and process activity.

Important:

The set of status commands documented here are intended for use only by Avaya technical support staff. These commands do not provide information that would ordinarily be considered useful to system users. If the system is malfunctioning, local users may be asked by Avaya staff to enter some of these commands and furnish the output for system diagnostics.

The table below provides a list of the options by software package and switch type.

Switch	CTI Package	Process Option	Location
Avaya M1/CS 1000	CCTIVR interface with CCMS and MLSM	tls	TLS Options on page 69

Switch	CTI Package	Process Option	Location
		csvapi	CSVAPI Options on page 77
		csad	CSAD Options on page 79
	CCTContactCenter-Interfaces	csrsm	CSRSM Options on page 81
		csrsmls	CSRSMLS Options on page 82
		cshdxls	CSHDXLS Options on page 85
	CCTIVRData	cstapi	CSTAPI Options on page 87
		cstapils	CSTAPILS Options on page 88
DMS-100/ MSL100	Peri-ICM	csvapi	page 84
		tls	page 85
	IVR-SCCS/CCMS	csrsmls	page 88
		csrsm	page 87
		cshdxls	page 90
	IVR-TAPI	cstapi	page 91
		cstapils	page 91

SRP Options

Table 1: srp comp status

	Displays the configured CTI processes and their activity status. The processes shown depend on the type of system (CCTIVR only, CCTIVR with TAPI, CCTIVR with SCCS/CCMS, and CCTIVR with TAPI and SCCS/CCMS).

CCTIVR only

```
vsh#css.1/css2000 {1} -> srp comp -status
NODE:PORT    USER   PID  LINE STATE  ENTERED STATE  FLAGS CMDLINE
Component: #css.1,vos/css2000
CSS2000NT:5010 SYSTEM 304  -  RUNNING Oct 11 17:17:07  C  ipmlsp
CSS2000NT:5011 SYSTEM 1540 -  RUNNING Oct 11 17:17:07  C  tls
CSS2000NT:5013 SYSTEM 1936 -  RUNNING Oct 11 17:17:07  C  csvapi
```

CCTIVR with TAPI

```
vsh#css.1/css2000 {1} -> srp comp -status
NODE:PORT      USER   PID  LINE STATE  ENTERED STATE  FLAGS CMDLINE
Component: #css.1,vos/css2000
CSS2000NT:5010 SYSTEM 304  -  RUNNING Oct 11 17:17:07   C  ipmlsp
CSS2000NT:5011 SYSTEM 1540 -  RUNNING Oct 11 17:17:07   C  tls
CSS2000NT:5013 SYSTEM 1936 -  RUNNING Oct 11 17:17:07   C  csvapi
CSS2000NT:5130 SYSTEM 1648 -  RUNNING Oct 11 17:17:07   C  cstapils
CSS2000NT:5131 SYSTEM 1836 -  RUNNING Oct 11 17:17:07   C  cstapi
```

CCTIVR with SCCS/CCMS

```
vsh#css.1/css2000 {1} -> srp comp -status
NODE:PORT      USER   PID  LINE STATE  ENTERED STATE  FLAGS CMDLINE
Component: #css.1,vos/css2000
CSS2000NT:5010 SYSTEM 304   -  RUNNING Oct 11 17:17:07  C  ipmlsp
CSS2000NT:5011 SYSTEM 1540  -  RUNNING Oct 11 17:17:07  C  tls
CSS2000NT:5013 SYSTEM 1936  -  RUNNING Oct 11 17:17:07  C  csvapi
CSS2000NT:5120 SYSTEM 1228  -  RUNNING Oct 11 17:17:07  C  csrsmls
CSS2000NT:5121 SYSTEM 1884  -  RUNNING Oct 11 17:17:07  C  csrsm
CSS2000NT:5142 SYSTEM 1772  -  RUNNING Oct 11 17:17:07  C  cshdxls
```

CCTIVR with TAPI and SCCS/CCMS

```
vsh#css.1/css2000 {1} -> srp comp -status
NODE:PORT      USER   PID  LINE STATE  ENTERED STATE  FLAGS CMDLINE
Component: #css.1,vos/css2000
CSS2000NT:5010 SYSTEM 304   -  RUNNING Oct 11 17:17:07  C  ipmlsp
CSS2000NT:5011 SYSTEM 1540  -  RUNNING Oct 11 17:17:07  C  tls
CSS2000NT:5013 SYSTEM 1936  -  RUNNING Oct 11 17:17:07  C  csvapi
CSS2000NT:5120 SYSTEM 1228  -  RUNNING Oct 11 17:17:07  C  csrsmls
CSS2000NT:5121 SYSTEM 1884  -  RUNNING Oct 11 17:17:07  C  csrsm
CSS2000NT:5130 SYSTEM 1648  -  RUNNING Oct 11 17:17:07  C  cstapils
CSS2000NT:5131 SYSTEM 1836  -  RUNNING Oct 11 17:17:07  C  cstapi
CSS2000NT:5142 SYSTEM 1772  -  RUNNING Oct 11 17:17:07  C  cshdxls
```

TLS Options

Table 2: tls display acdmap

Displays current agent mapping.

```
vsh#css.1,vos/css2000 {12} -> tls display acdmap
Total Mapped Positions and DN count is 0
```

Table 3: tls display agents

Displays known agents.

```
vsh#css.1,vos/css2000 {13} -> tls display agents
Current Agent Information

Total record count:0

-----------------------------
Total Number of mapped dn and positions are : 0
```

Table 4: tls display callids

Display active calls.

```
vsh#css.1,vos/css2000 {14} -> tls display callids

No Calls in Call Table
```

Table 5: tls display delayQlist

Displays requests waiting to be sent.

```
vsh#css.1,vos/css2000 {15} -> tls display delayQlist
tls_show_delay_request : no record in delay request queue
```

Table 6: tls display delayQstats

Displays request send queue statistics.

```
vsh#css.1,vos/css2000 {16} ->  tls display delayQstats
Delay Request Queue Settings and Statics at Wed Apr 02 10:41:10 AM
Delay Request Setting
---------------------
Lasttime of callback timer :Wed Apr 02 10:41:10 AM
Maximum delay requests allowed on list : 1000
Maximum time allowed delay list : 50
Maximum request queue lag allowed before delay queue used : 32

Delay Request Statistics
------------------------
TQReq : are the outstanding requests in queue
TQRem : are the total number of requests that have been deleted
TQAdd : total number that have been added to requests queue
TQRej : total number of requests that attempted to be put on queue
```

```
but rejected
TQPurged : total number of requests that are purged from time expiry
TQReq: 0 TQRem: 0 TQAdd: 0 TQRej: 0 TQPurged: 0
No messages have been delayed
```

Table 7: tls display devices

Displays all registered devices.

```
vsh#css.1,vos/css2000 {17} ->  tls display devices
No devices in the device table
```

Table 8: tls display dnHandlemap

Displays device handle map.

```
vsh#css.1,vos/css2000 {18} ->  tls display dnHandlemap
Total line count is 0
```

Table 9: tls display dnmap

Displays current device mappings.

```
vsh#css.1,vos/css2000 {19} ->  tls display dnmap
Total line count is 0
```

Table 10: tls display licenseinfo

Displays license information. TLS must be active for this command to function. Also, the entry for Licensed Dn Registrations must match the number of licenses purchased. In this example, the number of licenses is 1000, and 28 are currently in use.

```
vsh#css.1/css2000nt {1} -> tls display licenseinfo
TLS License Information
---------------------------
Licensed Dn Registrations: 1000
Current Dn Registrations:  28
The Licensed Dn Registrations: Displays how many device
registrations are allowed.
The Current Dn Registrations: Displays how many device
registrations are currently being used.
```

Table 11: tls display links

Displays all configured links.

```
vsh#css.1,vos/css2000 {20} ->  tls display links
Version: @(#) tlscom 2.1.0 [02/27/2006 058 15:55]
Service Id: tlsdefault
link handle: 131072
Current Link State: LinkStateDown
Link type: sccs link
link interface type: TCP_IP
Link specific structure: 0x1883d38
Service Type: telephony
Media type: telephony
applicationID: css1
associationID: 0
Customer number: 0
Hostaddress: 192.168.107.13
Hostport: 3000
Hostname: Lanlink
Machine name: SL16
Password:
Protocol: 1
Restart function: 0x0
Connection Descriptor: -1
Socket descriptor: -1
Reconect timerid: 1866
Send buffer address: 0x100dd628
Send buffer length: 0
Receive buffer address: 0x100cd628
Receive buffer length: 0
Max delay request: 1000
Max request queue lag: 32
Delay request time (ms): 50
Request Timeout (secs): 10
Maximum consecutive failures: 5
Current Poll failure count: -1
Polling interval (secs): 10
Polling Mode: Server
Time of last message: Wed Dec 31 04:00:00 PM
Delay Request Queue Timerid: 1908
Poll Agent Status Time: 0
Poll Agent Status Timerid: -1
Use Unique Callids: Off
Protocol debugging: Enabled
==========================================================
Service Id: mcb
link handle: 131073
Current Link State: LinkStateUp
Link type: mmpserver
link interface type: ipc
specific structure: 0x0
Service Type: telephony
Media type: telephony
applicationID:
associationID: 0
Customer number: 0
Hostaddress: localhost
Hostport: 5151
Hostname:
Machine name:
Password:
Protocol: 0
Restart function: 0x0
Connection Descriptor: 6
Socket descriptor: -1
```

```
                Reconect timerid: -1
            Send buffer address: 0x100f10d0
                 Send buffer length: 0
           Receive buffer address: 0x100e10d0
                Receive buffer length: 0
                Max delay request: 1000
               Max request queue lag: 0
              Delay request time (ms): 0
              Request Timeout (secs): 10
            Maximum consecutive failures: 2
             Current Poll failure count: 0
               Polling interval (secs): 0
                  Polling Mode: Server
      Time of last message: Wed Apr 02 10:04:08 AM
             Delay Request Queue Timerid: -1
                Poll Agent Status Time: 0
             Poll Agent Status Timerid: -1
                Use Unique Callids: On
              Protocol debugging: Disabled
```

Table 12: tls display linktype

Displays current link type.

```
vsh#css.1,vos/css2000 {21} -> tls display linktype
                Service Id: tlsdefault
                  link handle: 131072
          Current Link State: LinkStateDown
                   Link type: sccs
             link interface type: TCP_IP
           Link specific structure: 0x1883d38
                Service Type: telephony
                Media type: telephony
                  applicationID: css1
                    associationID: 0
                  Customer number: 0
             Hostaddress: 192.168.107.13
                   Hostport: 3000
                 Hostname: Lanlink
                 Machine name: SL16
                      Password:
                    Protocol: 1
                Restart function: 0x0
              Connection Descriptor: -1
                Socket descriptor: -1
                Reconect timerid: 924
            Send buffer address: 0x100dd628
                 Send buffer length: 0
           Receive buffer address: 0x100cd628
                Receive buffer length: 0
                Max delay request: 1000
               Max request queue lag: 32
              Delay request time (ms): 50
              Request Timeout (secs): 10
            Maximum consecutive failures:5
             Current Poll failure count: -1
               Polling interval (secs): 10
                  Polling Mode: Server
      Time of last message: Wed Dec 31 04:00:00 PM
```

```
                    Delay Request Queue Timerid: 974
                       Poll Agent Status Time: 0
                     Poll Agent Status Timerid: -1
                        Use Unique Callids: Off
                      Protocol debugging: Enabled
```

Table 13: tls display reqstList

Displays outstanding requests.

```
vsh#css.1,vos/css2000 {22} ->  tls display reqstList
No records in request queue
```

Table 14: tls display reqstStats

Displays statistics about queued requests.

```
vsh#css.1,vos/css2000 {23} -> tls display reqstStats
TQReq : are the outstanding requests in queue
TQRem : are the total number of requests that have been deleted
TQAdd : total number that have been added to requests queue
TQRej : total number of requests that attempted to be put on queue
but rejected
TQFail : total number of requests that failed to based on submitted
key
TQPurged : total number of requests that are purged from time expiry
TQTranFail : total number of times tried to get an new tranid but
is already exists
TQReq: 0 TQRem: 0 TQAdd: 0 TQRej: 0 TQFail: 0 TQPurged: 0 TQTranFail
0 LastTranId 1 MaxTranId 32767 MinTranId 1
```

Table 15: tls display stats

Displays statistics about queued requests.

vsh#css.1,vos/css2000 {24} -> tls display stats

```
                        TLS STATISTIC INFORMATION
                        =========================
```

Current Time: Wed Apr 02 11:16:43 AM Link: 131072

TLS Request Statistics

```
Total CsRequest 0              Total TlRequest 0
TLS CSRequest Statistics
------------------------
```

RegisterDevice 0 SetDeviceParam 0	UnRegisterDevice 0 GetDeviceParam 0	SendRequest 0 RegisterAll 0	UnRegisterAll 0

```
TLS TLRequest Statistics
------------------------
```

MakeCall 0	HoldCall 0	RetrieveCall 0	
AnswerCall 0	ClearCall 0	ConferenceCall 0	ConsultCall 0
TransferCall 0	SetAgntState 0	SetForwarding 0	
BlindTxfer 0	RouteCall 0	RouteSelect 0	
RecordCall 0	PlayCall 0	ReconnectCall 0	
InitTransfer 0	InitConf 0	BlindConference 0	
MergeCall 0	TreatCall 0		

```
TLS Response Statistics
-----------------------
```

```
CsResponse 0     TlResponse 0
```

```
TLS CSResponse Statistics
-------------------------
```

RegisterDevice 0 0 SetDeviceParam 0	UnRegisterDevice 0 GetDeviceParam 0	SendRequest RegisterAll 0	UnRegisterAll 0

```
TLS TLResponse Statistics
---------------
---------
```

MakeCall 0 AnswerCall 0	HoldCall 0 ClearCall 0	RetrieveCall 0 ConferenceCall 0	ConsultCall 0
TransferCall 0 BlindTxfer 0	SetAgntState 0 RouteCall 0	SetForwarding 0 RouteSelect 0	
RecordCall 0 InitTransfer 0 MergeCall 0	PlayCall 0 InitConf 0 TreatCall 0	ReconnectCall 0 BlindConference 0	

```
TLS Call Statistics
-------------------
```

Dialing 0 Clear 0 OthPtyAdded 0 Retrieve 0	Ringing 0 ConClear 0 OthPtyHeld 0 Held 0	Established 0 OthPtyDrop 0 Forward 0	Transferred 0	Conference 0

```
TLS Queued Statistics
---------------------
```

Queued 0 DeQueued 0 Redirected 0

```
TLS Routing Statistics
----------------------
```

RouteRequest 0

```
TLS Agentstate Statistics
---------------------
```

Login 0 Ready 0 NotReady 0 Logout 0 WrkRdy 0 WrkNRdy 0

```
TLS System Connection Statistics
---------------------
```

TLSConUp 0 TLSConDown 0 SwtchConUp 0 SwtchConDown 0

```
TLS Recording Statistics
---------------------
```

RecordStart 0 RecordStop 0 PlayStart 0 PlayStop 0

```
TLS CallData Statistics
---------------------
```

CallInfo 0

```
TLS Failure Statistics
```

Failure 0 Unknown 0

Table 16: tls display trackErrList

Displays error statistics.

```
vsh#css.1,vos/css2000 {25} -> tls display trackErrList
```

Key	xErrorString	ErrorCount	LstErrNum

Table 17: tls show config

Provides verification that TLS is running properly.

```
vsh#css.1,vos/PERIIPML2KADV {1} -> tls show config
Error and Debug log:   C:\Program Files\Avaya\css1\log/tls.log
Log Mode:              mcbliberr applicerr error
mcblib applic terse
```

```
verbose connect ftrace
msgdump
Maximum Log file size:  16384 KB
```

Table 18: tls show status

Displays the configured tls processes and their activity status.

```
vsh#css.1,vos/PERIIPML2KADV {4} -> tls show status
Version: @(#) tlscom  2.1.0 [05/14/2003 134 18:01]
Service Id: tlsdefault
Current Link State: LinkStateDown
Media type: telephony
Machine name: SL16
=========================================================
Service Id: mcb
Current Link State: LinkStateDown
Media type: telephony
Machine name:
=========================================================
```

CSVAPI Options

Table 19: csvapi show config

Provides verification that CSVAPI is running properly.

```
vsh#css.1,vos/PERIIPML2KADV {7} -> csvapi show config
Error and Debug log:   C:\Program Files\Avaya\css1\log/csvapi.log
Log Mode:             mcbliberr applicerr error
applic terse verbose
Maximum Log file size:  20480 KB
```

Table 20: csvapi show registereddns

Displays information about registered DNs.

```
vsh#css.1,vos/PERIIPML2KADV {5} -> csvapi show registereddns
VPS[0]
------
6144             AgentPosition           RegisterSubscribed
6145             AgentPosition           RegisterSubscribed
6146             AgentPosition           RegisterSubscribed
6147             AgentPosition           RegisterSubscribed
6148             AgentPosition           RegisterSubscribed
6149             AgentPosition           RegisterSubscribed
6150             AgentPosition           RegisterSubscribed
6151             AgentPosition           RegisterSubscribed
```

```
6152              AgentPosition           RegisterSubscribed
6153              AgentPosition           RegisterSubscribed
6154              AgentPosition           RegisterSubscribed
6155              AgentPosition           RegisterSubscribed
6161              AgentPosition           RegisterSubscribed
6161              AgentPosition           RegisterSubscribed
6162              AgentPosition           RegisterSubscribed
6163              AgentPosition           RegisterSubscribed
6164              AgentPosition           RegisterSubscribed
6165              AgentPosition           RegisterSubscribed
6166              AgentPosition           RegisterSubscribed
6167              AgentPosition           RegisterSubscribed
6168              AgentPosition           RegisterSubscribed
6191              AgentPosition           RegisterSubscribed
4000              CDN                     RegisterSubscribed
VPS[1]
------
```

Table 21: csvapi show status

Displays the configured csvapi processes and their activity status.

```
vsh#css.1,vos/PERIIPML2KADV {9} -> csvapi show status
-----------------------------------------------------------------
The status of csvapi:     Down! (AD up :: TLS down)
```

Table 22: csvapi show mpsconnlist

Displays connections to MPS Cluster.

```
vsh#css.1,vos/CCTIVR-w2k3 {14} -> csvapi show mpsconnlist
List of configured connections to mps node(s)
---------------------------------------------
Note: current configuration has no backup mps node!
```

```
MPS Node
========
Name: localhost
State: Connected
Mode: Redundant
Cd: 5
```

```
Components
==========
```

mps10 (<unknown>)

Table 23: csvapi show phones

Displays MPS Phone line Info.

```
vsh#css.1,vos/CCTIVR-w2k3 {3} -> csvapi show phones
VPS[0]
```

```
------
dncount:1:state:0:DefDev:9503:ContactId:00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 :clmCd:-1:maskWait:0x120b490:lin:0:lout:0:liQ:
0:liS:0:qEv:0:vps_num:0:dncount:1:state:0:DefDev:9504:ContactId:00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 :clmCd:-1:maskWait:
0x120b544:lin:0:lout:0:liQ:0:liS:0:qEv:0:vps_num:0:
VPS[1]
------
VPS[2]
------
```

CSAD Options

Table 24: csad show config

Provides verification that CSAD is running properly.

```
vsh#css.1,vos/PERIIPML2KADV {1} -> csad show config
Error and Debug log:    C:\Program Files\Avaya\css1\log/csad.log
Log Mode:               All
```

Table 25: csad display all

Displays full information about csad config.

```
vsh#css.1,vos/alexmark-w2000 {27} -> csad display all
Configuration for csad
----------------------
```

Duplicate calldata record are filtered out

Callid timer : 600 seconds

Callid timerid : 38

Keep alive time: 20000 milliseconds

no records found

Contact ID	PBX ID	Network ID	ANI
----------	------	----------	---
0	0	0	0

ATTACHDATA STATISTIMMP at Wed Apr 02 01:13:07 PM
AttachData Request Statistics

Get 0	Add/Append 0	Selected for Remove 0	Update/Replace 0

AttachData Event Statistics

ContactCleared 0
AttachData Failure Statistics

Failure 0

AttachData Fatal Error Statistics
Fatal 0

Table 26: csad display counters

Displays all configured counters.

```
vsh#css.1,vos/alexmark-w2000 {28} -> csad display counters
```

Contact Id	PBX Id	Network Id	ANI
----------	------	----------	---
0	0	0	0

Table 27: csad display entries

Display entries in call table.

```
vsh#css.1,vos/alexmark-w2000 {29} -> csad display entries
no records found
```

Table 28: csad display statistics

Displays statistic information.

```
vsh#css.1,vos/alexmark-w2000 {30} -> csad display statistics
ATTACHDATA STATISTIMMP at Wed Apr 02 01:17:40 PM
```

AttachData Request Statistics

Get 0 0	Add/Append 0	Selected for Remove 0	Update/Replace 0
----------	------	----------	---
0	0	0	0

AttachData Event Statistics

ContactCleared 0
AttachData Failure Statistics

Failure 0
AttachData Fatal Error Statistics

```
----------------------------
```

Fatal 0

Table 29: csad display config

Displays detailed configuration information for csad.

```
vsh#css.1,vos/alexmark-w2000 {31} -> csad display config
Configuration for csad
----------------------
```

Duplicate calldata record are filtered out

Callid timer :	600 seconds
Callid timerid :	40
Keep alive time:	20000 milliseconds

CSRSM Options

Table 30: csrsm show config

Provides verification that CSRSM is running properly.

```
vsh#css.1,vos/PERIIPML2KADV {1} -> csrsm show config
Error and Debug log:    C:\Program Files\Avaya\css1\log/csrsm.log
Log Mode:             mcbliberr applicerr error
applic terse verbose
Maximum Log file size:  20480 KB
```

Table 31: csrsm show registereddns

Displays information about registered DNs.

```
vsh#css.1,vos/PERIIPML2KADV {2} -> csrsm show registereddns
VPS[0]
------
cp_hdx_new              Applname         RegisterSubscribed
master_script           Applname         RegisterSubscribed
NT                      Skillname        RegisterSubscribed
cp_hdx_new2             Applname         RegisterSubscribed
agent61 agent61         Agntname         RegisterSubscribed
agent60 agent60         Agntname         RegisterSubscribed
VISA                    Skillname        RegisterSubscribed
UNIX                    Skillname        RegisterSubscribed
acd_dn_application      Applname         RegisterSubscribed
canada_post_agents      Skillname        RegisterSubscribed
```

```
AMEX                    Skillname        RegisterSubscribed
VPS[1]
------
```

Table 32: csrsm show status

Displays the configured csrsm processes and their activity status.

```
vsh#css.1,vos/PERIIPML2KADV {2} -> csrsm show status
-------------------------------------------------------------
The status of csrsm:     Down !(TLS & AD down)
```

Table 33: csrsm show phones

Displays MPS Phone line Info.

```
vsh#css.1,vos/alexmark-w2000 {71} -> csrsm show phones
VPS[0]
-----
```

CSRSMLS Options

Table 34: csrsmls display licenseinfo

Displays license information. CSRSMLS must be active for this command to function. For this process, only one license is required, and it provides unlimited registrations.

```
vsh#css.1/css2000nt {1} -> csrsmls display licenseinfo
CsrsmLS License Information
-----------------------------------
Licensed CsrsmLS: The license was successfully acquired, , 2.0,
Devices=500
```

Table 35: csrsmls show config

Provides verification that CSRSMLS is running properly.

```
vsh#css.1,vos/PERIIPML2KADV {2} -> csrsmls show config
Error and Debug log:  C:\Program Files\Avaya\css1\log/csrsmls.log
Log Mode:             mcbliberr applicerr error
mcblib applic terse
verbose connect ftrace
```

```
msgdump
Maximum Log file size:  16384 KB
```

Table 36: csrsmls display config

Provides detailed configuration information about the data loaded in the CSRSMLS module.

```
vsh#css.1/css2000nt {3} -> csrsmls display config
CSRSMLS config:
--------------------
DataTimeout(secs)       = 240
CorbaTimeout(secs)      = 10
MultiPortAddres         = 230.0.0.1
SiteName                = SCCSPERI2
Remote hostname         = SCCSPERI2
Debug                   = Y
Debug detail            = N
Port assignments:
Port AgntWnd,AgntItod   = 6070,6060
Port ApplWnd,ApplItod   = 6030,6020
Port SkillWnd,SkillItod = 6050,6040
```

Table 37: csrsmls display stats

Displays CSRSMLS statistical information.

```
vsh#css.1/css2000nt {6} -> csrsmls display stats
CSRSMLS stats
TotalValidConnections:  5     TotalInvalidConnections:  0
```

Table 38: csrsmls show status

Displays the configured csrsm processes and their activity status.

```
vsh#css.1,vos/PERIIPML2KADV {2} -> csrsmls show status
Version: @(#) tlscom  2.1.0 [05/14/2003 134 18:01]
Service Id: rsmdefault
Current Link State: LinkStateDown
Media type: telephony
Machine name:
============================================================
Service Id: 131073
Current Link State: LinkStateDown
Media type: telephony
Machine name: qasccs1
============================================================
Service Id: 131074
Current Link State: LinkStateDown
Media type: telephony
Machine name: qasccs1
============================================================
```

```
Service Id: 131079
Current Link State: LinkStateDown
Media type: telephony
Machine name: qasccs1
============================================================
Service Id: mcb
Current Link State: LinkStateDown
Media type: telephony
Machine name:
============================================================
```

Command	Description	Parameters
csrsmls display acdmap csrsmls display agents csrsmls display callids csrsmls display configrsm csrsmls display delayQlist csrsmls display delayQstats csrsmls display devices csrsmls display dnHandlemap csrsmls display dnmap csrsmls display licenseInfo csrsmls display links csrsmls display linktype csrsmls display reqstList csrsmls display reqstStat csrsmls display rsmreset csrsmls display stats csrsmls display statsrsm csrsmls display trackErrList	Displays information about csrsmls activity.	acdmap: Displays current agent mapping agents: Displays known agents callids: Display active calls configrsm: Displays current config for csrsm system delayQlist: Displays requests waiting to be sent delayQstats: Displays request send queue statistics devices: Displays all registered devices dnHandlemap: Displays device handle map dnmap: Displays current device mappings licenseInfo: Displays license information links: Displays all configured links linktype: Displays current link type reqstList: Displays outstanding requests reqstStats: Displays statistics about queued requests rsmreset: Reset the csrsm internal statistics counter stats: Displays statistics about queued requests statsrsm: Displays statistics relevant to csrsm calldata trackErrList: Displays error statistics
csrsmls show config csrsmls show status	Shows configuration information.	config: Displays Logging and Configuration Options status: Displays status of all configured links

CSHDXLS Options

Table 39: cshdxls display licenseinfo

Displays license information. CSHDXLS must be active for this command to function.
`vsh#css.1/css2000nt {1} -> cshdxls display licenseinfo` `cshdxls license check success.`

Table 40: cshdxls show config

Provides verification that CSHDXLS is running properly.

`vsh#css.1,vos/PERIIPML2KADV {9} -> cshdxls show config`
`Error and Debug log:  C:\Program Files\Avaya\css1\log/cshdxls.log`
`Log Mode:  mcbliberr applicerr error`
`mcblib applic terse`
`verbose connect ftrace`
`msgdump`
`Maximum Log file size:  16384 KB`

Table 41: cshdxls show status

Displays the configured CSHDXLS processes and their activity status.

`vsh#css.1,vos/PERIIPML2KADV {8} -> cshdxls show status`
`Version: @(#) tlscom  2.1.0 [05/14/2003 134 18:01]`
`Service Id: hdxdefault`
`Current Link State: LinkStateDown`
`Media type:`
`Machine name: 47.185.22.210`
`==========`
`Service Id: mcb`
`Current Link State: LinkStateDown`
`Media type: telephony`
`Machine name:`
`==========`

Command	Description	Parameters
cshdxls display acdmap	Displays information about cshdxls activity.	acdmap: Displays current agent mapping

Command	Description	Parameters
cshdxls display agents		agents: Displays known agents
cshdxls display callids		callids: Display active calls
cshdxls display configrsm		configrsm: Displays current config for csrsm system
cshdxls display delayQlist		delayQlist: Displays requests waiting to be sent
cshdxls display delayQstats		delayQstats: Displays request send queue statistics
cshdxls display devices		devices: Displays all registered devices
cshdxls display dnHandlemap		dnHandlemap: Displays device handle map
cshdxls display dnmap		dnmap: Displays current device mappings
cshdxls display licenseInfo		licenseInfo: Displays license information
cshdxls display links		links: Displays all configured links
cshdxls display linktype		linktype: Displays current link type
cshdxls display reqstList		reqstList: Displays outstanding requests
cshdxls display reqstStat		reqstStats: Displays statistics about queued requests
cshdxls display hdxreset		hdxreset: Reset the csrsm internal statistics counter
cshdxls display stats		stats: Displays statistics about queued requests
cshdxls display statshdx		statshdx: Displays statistics relevant to csrsm calldata
cshdxls display trackErrList		trackErrList: Displays error statistics

Command	Description	Parameters
cshdxls show config	Shows configuration information.	config: Displays Logging and Configuration Options
cshdxls show status		status: Displays status of all configured links

CSTAPI Options

Table 42: cstapi show config

Provides verification that CSTAPI is running properly.

```
vsh#css.1,vos/PERIIPML2KADV {4} -> cstapi show config
Error and Debug log:   C:\Program Files\Avaya\css1\log/cstapi.log
Log Mode:             mcbliberr applicerr error
applic terse verbose
Maximum Log file size:  20480 KB
```

Table 43: cstapi show registereddns

Displays information about registered DNs.

```
vsh#css.1,vos/PERIIPML2KADV {1} -> cstapi show registereddns
VPS[0]
------
6144               AgentPosition         RegisterSubscribed
VPS[1]
------
```

Table 44: cstapi show status

Displays the configured CSTAPI processes and their activity status.

```
vsh#css.1,vos/PERIIPML2KADV {2} -> cstapi show status
----------------------------------------------------------------
The status of cstapi:     Down !(TLS & AD down)
```

Table 45: cstapi show phones

Displays MPS Phone line Info.	

```
vsh#css.1,vos/alexmark-w2000 {74} -
> cstapi show phones
VPS[0]
------
VPS[1]
------
```

CSTAPILS Options

Table 46: cstapils display licenseinfo

Displays license information. CSTAPILS must be active for this command to function.

```
vsh#css.1/css2000nt {1} -> cstapils display licenseinfo
CSTAPILS License Information
----------------------------
License result: The license was successfully acquired,
cstapils, 2.0, Devices=500
Devices permitted: 500
```

Table 47: cstapils show config

Provides verification that CSTAPILS is running properly.

```
vsh#css.1,vos/PERIIPML2KADV {3} -> cstapils show config
Error and Debug log:    C:\Program Files\Avaya\css1\log/cstapils.log
Log Mode:              mcbliberr applicerr error
applic terse verbose
ftrace msgdump
Maximum Log file size:  16384 KB
```

Table 48: cstapils show status

Displays the configured CSTAPILS processes and their activity status.

```
vsh#css.1,vos/PERIIPML2KADV {4} -> cstapils show status
Version: @(#) tlscom  2.1.0 [08/23/2006 235 16:59]
Service Id: tapils
Current Link State: LinkStateDown
Media type: telephony
Machine name:
============================================================
Service Id: mcb
Current Link State: LinkStateDown
```

```
Media type: telephony
Machine name:
================================================================
```

Table 49: Commands for CSTAPILS module

Command	Description	Parameters
cstapils display acdmap	Displays information about cstapils activity.	acdmap: Displays current agent mapping
cstapils display agents		agents: Displays known agents
cstapils display callids		callids: Display active calls
cstapils display configrsm		configrsm: Displays current config for csrsm system
cstapils display delayQlist		delayQlist: Displays requests waiting to be sent
cstapils display delayQstats		delayQstats: Displays request send queue statistics
cstapils display devices		devices: Displays all registered devices
cstapils display dnHandlemap		dnHandlemap: Displays device handle map
cstapils display dnmap		dnmap: Displays current device mappings
cstapils display licenseInfo		licenseInfo: Displays license information
cstapils display links		links: Displays all configured links
cstapils display linktype		linktype: Displays current link type
cstapils display reqstList		reqstList: Displays outstanding requests
cstapils display reqstStat		reqstStats: Displays statistics about queued requests
cstapils display rsmreset		rsmreset: Reset the csrsm internal statistics counter

Command	Description	Parameters
cstapils display stats		stats: Displays statistics about queued requests
cstapils display statsrsm		statsrsm: Displays statistics relevant to csrsm calldata
cstapils display trackErrList		trackErrList: Displays error statistics
cstapils show config	Shows configuration information.	config: Displays Logging and Configuration Options
cstapils show status		status: Displays status of all configured links

MCB Options

Table 50: mcb show publishers

```
vsh#css.1,vos/PERIIPML2KADV {4} -> mcb show publishers
Service Name    Publisher CD(s)    Subscription Keys
------------    ---------------    -----------------
attachdata      5
Total services published:  1
```

Table 51: mcb show config

Provides verification that mcb is running properly.

```
vsh#css.1,vos/PERIIPML2KADV {3} -> mcb show config
Error and Debug log:   C:\Program Files\Avaya\css1\log/mcb.log
Log Mode:              mcbliberr applicerr error
Maximum Log file size:  1024 KB
```

Table 52: mcb show subscribers

```
vsh#css.1,vos/PERIIPML2KADV {4} -> mcb show subscribers

Sub. Key   Sub. Value           Subscriber CD(s)
--------   ----------           ----------------
deviceid
6188                8
--------------------------------
```

```
Total sub. value subscribers: 1
6189                8
------------------------------
Total sub. value subscribers: 1
cp_hdx_new          7
------------------------------
Total sub. value subscribers: 1
NT                  7
------------------------------
Total sub. value subscribers: 1
4000                8
------------------------------
Total sub. value subscribers: 1
cp_hdx_new2         7
------------------------------
Total sub. value subscribers: 1
agent60 agent60     7
------------------------------
Total sub. value subscribers: 1
agent61 agent61     7
------------------------------
Total sub. value subscribers: 1
VISA                7
------------------------------
Total sub. value subscribers: 1
UNIX                7
------------------------------
Total sub. value subscribers: 1
acd_dn_application  7
------------------------------
Total sub. value subscribers: 1
canada_post_agents  7
------------------------------
Total sub. value subscribers: 1
AMEX                7
------------------------------
Total sub. value subscribers: 1
msgclass
ContactCleared      5
------------------------------
Total sub. value subscribers: 1
Total subscription keys:  2
```

CCTSP Options

Table 53: ipmlsp show config

Provides verification that IPMLSP is running properly.

```
vsh#css.1,vos/TESTBOX {7} -> implsp show config
Error and Debug log:    C:\Program Files\Avaya\css1\log/ipmlsp.log
Log Mode:             mcbliberr applicerr error
applic terse verbose
Maximum Log file size:  20480 KB
```

Table 54: ipmlsp show registereddns

Displays information about registered DNs.
vsh#css.1,vos/TESTBOX {5} -> ipmlsp show registereddns VPS[0] ------ 6144 AgentPosition RegisterSubscribed VPS[1] ------

Table 55: ipmlsp show status

Displays the configured ipmlsp processes and their activity status.
vsh#css.1,vos/TESTBOX {9} -> ipmlsp show status The status of ipmlsp: Up! (TLS up)

Chapter 5: Configuration commands

This chapter covers:

1. TLS options
2. CSVAPI options
3. CSAD options
4. CSRSM options
5 CSHDXLS options
6. CSTAPILS options
7. MCB options

Important:

The following commands do not provide information for the system users. If the system is nonfunctional, Avaya recommends that you enter some of these commands and provide the output for system diagnostics.

TLS options

The following table describes the TLS options.

Table 56: TLS options

Command	Description	Default	Range
agentid	Associates position ID with agent ID.	n/a	256 symbols
defaultagentmode	Sets default agent mode.	n/a	AgentNotReady | AgentReady | AgentLoggedOn
device	Sets device.	n/a	256 symbols
devicetype	Sets device type.	n/a	Station | Queue | Routepoint | POTS | VirtualQueue | Agentposition | PrimaryAcd | SupplementaryAcd | MailBox |

Command	Description	Default	Range
			Trunk | Pseudo | MonitorChannel | SpecificDn | CDN | VDN | AgentId | SkillsetId | AdminLine | TerminalNumber | SkillName | ApplName | AgntName
pbxtype	Sets PBX type for the links.	sccs	none | csta | mlink | g3 | bbs | dms | ideal | intecom | spectrum | aspect | aml | nec_infolink | nec_oai | gts | gts_m1 | gts_g3 | gts_5e | sccs | hdx | oreo | chat | ivrtapi | mmpclient | mmpserver | csclient | csserver | mxmps | rsm
linktype	Sets linktype.	n/a	none | csta | mlink | g3 | bbs | dms | ideal | intecom | spectrum | aspect | aml | nec_infolink | nec_oai|gts | gts_m1 | gts_g3 | gts_5e | sccs| hdx | oreo | chat | ivrtapi | mmpclient | mmpserver | csclient | csserver | mxmps | rsm
applicationid	Sets application ID.	n/a	32 symbols
applicationprotocol	Sets application protocol.	n/a	0-65535
cleartable	Clears table.	n/a	devices | agents | callids | delayQlist | dnmap | reqstList | trackErrList | acdmap | dnHandlemap | registrations
clientid	Sets client ID.	n/a	0-2147483647
closesocket	Closes socket in debug mode.	n/a	0-2147483647
customernumber	Sets customer number.	n/a	0-65535
debug_protocol	Sets debug output for protocol.	off	on | off
defaultserver	Sets default server.	n/a	256 symbols
dnmap	Clears DN map table.	n/a	clear

Command	Description	Default	Range
force	Forces answer or drop call.	n/a	answercall | dropcall
getinfo	Gets information about Acd.	n/a	acdstats
hostaddress	Sets IP address or host name of the link we are connecting to.	n/a	256 symbols
hostname	Sets the defined host name on the switch and not the network name.	n/a	32 symbols
linkinterface	Sets link interface.	tcp_ip	TCP_IP | Third_Party_TCP_IP | Third_Party_api | UDP | Serial | Internal | ipc | udp_multicast | Control_Link | tcp_ip_server
machinename	Sets machine name.	n/a	32 symbols
manifestation	Sets manifestation.	n/a	0-2147483647
maxpollfailures	Sets maximum polling failures.	n/a	0-2147483647
mode	Sets mode.	n/a	0-2147483647
password	Sets password.	n/a	32 symbols
pollinginterval	Sets polling interval.	10	0 | -1 | 65535
pollmode	Sets polling mode.	n/a	client | server
principalid	Sets principal ID.	n/a	32 symbols
purgetime	Sets purge time.	n/a	0-21474836 in minutes
reconntimer	Sets reconnect timer.	n/a	0-2147483 in milliseconds
requesttimer	Sets request time.	10	0-2147483 in milliseconds
role	Sets role.	n/a	0-2147483647
setdelayrequesttime	Sets delay request time.	n/a	50-10000 milliseconds
setinfo	Sets LED information.	n/a	LED

Command	Description	Default	Range
setlink	Sets link as default for all tlsoptions at startup	n/a	n/a
setmaxdelayrequest	Sets maximum delay requests.	n/a	0-1000
setmaxrequestqueuelag	Sets maximum lag for queue request.	n/a	500-65535
setpollagentstatetime	Sets polling agent state time.	5000	1000-2147483 in milliseconds
serviceid	Sets service ID.	tlsdefault	32 symbols
start_link	Starts link.	n/a	n/a
startlinks	Starts links.	n/a	n/a
stop_link	Stops link.	n/a	n/a
stoplinks	Stops links.	n/a	n/a
switchport	Sets switch port.	n/a	0-65535
uniquecallids	Sets unique call IDs.	n/a	on | off
unregisterdevice	Unregisters devices.	n/a	0 - 2147483647 | all
updatelink	Updates the tls link parameters.	n/a	n/a
xls_licinfo	Shows license information.	n/a	n/a

Example of tls.cfg file

```
logmode -all
logmode -applic
logmode -connect
logmode -ftrace
logmode -mcblib
logmode -msgdump
logmode -terse
logmode -timer
logmode -verbose
logsize 16384
```

```
service-mlink start
```

```
serviceid tlsdefault
```

```
pollinginterval 10
```

```
requesttimer 10
applicationid css1
customernumber 0
```

```
serviceid tlsdefault pbxtype sccs hostaddress 192.168.21.2 switchport 3000
linkinterface tcp_ip setlink
```

```
serviceid tlsdefault
uniquecallids off
```

```
serviceid mcb pbxtype mmpserver hostaddress localhost switchport 5151 linkinterface
ipc setlink
```

```
startlinks
```

CSVAPI options

The following table describes the CSVAPI options.

Table 57: CSVAPI options

Command	Description	Default	Range
attachdata_servicename	Sets attach data service name.	attachdata	String with service name
connecttovps	Sets up the current VPS information, VPS server name.	n/a	n/a
callid_required	Defines if contact ID is required or not for function (function must be called prior to this option).	n/a	TRUE | FALSE | YES | NO
csvapidebug	Sets debug mode.	False	TRUE | FALSE | ON | OFF
function_name	Calls function.	n/a	String with function name
device	Sets device number.	n/a	String with device number
devicetype	Sets device type.	n/a	Station | Queue | Routepoint | POTS | VirtualQueue | Agentposition | PrimaryAcd | SupplementaryAcd | MailBox | Trunk | Pseudo |

Command	Description	Default	Range
			MonitorChannel | SpecificDn | CDN | VDN | AgentId | SkillsetId | AdminLine | TerminalNumber | SkillName | ApplName | AgntName
maxstandbyvps	Sets maximum standby VPS number.	1	1-2147483647
maxvps	Sets number of VPS.	2	1-2147483647
pinginterval	Sets VMST ping timer interval.	15 seconds	1-2147483 seconds
pingmaxmiss	Sets maximum number of missing VMST pings.	3	1-2147483647
phoneline	Defines phoneline number.	n/a	0-255
reconnecttimerinterval	Defines the number of attempts to reconnect to VMST, in case of disconnect.	30 seconds	1-2147483 seconds
servicename	Defines servicename.	cti	String with service name
service-csvapi	Starts or stops CSVAPI service.	start	start | stop
telephony_servicename	Sets telephony service name.	tlsdefault	String with service name
vpsstandbyhost	Sets vps standby host name	n/a	String with host name
vpshost	Defines VPS hostname.	vps1	hostname | ip-address for vps
vpsnumber	Defines VPS number.	n/a	1-maxvps

Table 58: Table csvapi ppro apps options

Command	Description	Default	Range
agentid	Sets Agent ID value.	n/a	String with agent ID

Command	Description	Default	Range
attachedkey	Sets the value of the attached key.	n/a	String with key
attacheddata	Sets the value of the attached data.	n/a	String with value
ctifunction	Sets ctifunction's name.contact ID, either specified by option or being provided by last event.	n/a	agentsetlogon | agentsetlogoff | agentsetready | agentsetnotready | agentsetworkready | agentsetworknotready | answercall | attachdata | removedata | addtlinkdata | blindtransfer | completeconference | completetransfer | getcontactdata | getdeviceparam | holdcall | initiateconference | initiatetransfer | makecall | registeraddress | unregisteraddress | releasecall | retrievecall | processevent | setdeviceparam
contactid	Sets the contact ID number.	n/a	String with contact ID
destinationnumber	Sets the destination number.	n/a	String with destination number
loginid	Sets the login ID for all the agent functions.	n/a	String with login ID
param	Sets the value of the ppro option attached key.	n/a	Switch Type | Application Reference ID | DNIS | ANI | Queue | User Data | Telephony Link Data | Call Result | agentid | Error Message | From DN | From Queue | agentmode |

Command	Description	Default	Range
			agenttimeinmode | Agent Logon ID | agentlogontime | Agent ACD Call Count | agenttalktime | agentworktime | agentbreaktime | Caller Status | Caller Arrival Time | callereta | Monitor Status | Monitor DN | Add Line Appearance | Remove Line Appearance | acdgroupstatus | Make Set Busy | Make Set in Service | agentitd | applicitd | skillitd | agentmwnd | applicmwnd | skillmwnd | Set LED Display | Contact List | Contact Detail | Media Type | Activity Code | DTMF
password	Sets the password for all the agent functions.	n/a	String with password
retrievevalue	Retrieves event fields such as ani, dnis.	n/a	eventall | eventani | eventdnis | eventattacheddata | eventagentid | eventagentstate | eventloginid | eventpassword | eventcallid | eventcontactid | eventdigits | eventerrormessage | eventothercallid | eventothercontactid | eventotherdevice | eventotherqueue | eventothertrunk | eventrefnumber | eventthisdevice | eventdevicelist |

Command	Description	Default	Range
			eventthisqueue | eventthistrunk | eventtimeinqueue | eventtlinkdata | eventroute | eventstatus | eventtlservername
sendresponse	Sets sendresponse value.	n/a	yes | no | default
setcticondevent	Sets condition event.	n/a	String with event name
setreregistertimer	Sets re-register devices timer.	n/a	1-65 seconds
setignoreevent	Sets ignore event.	n/a	String with event name
setwaitevent	Sets wait event.	n/a	String with event name
skipblankavs	Sets skip or not AV entries in EventAll if blank.	yes	y | yes | on | n | no | off
thisdevice	Saves this device for later ctifunction using or for ppro registering.	n/a	String with value
thisdevicetype	Saves this device type for later ppro registering.	n/a	Station | Queue | RoutePoint | POTS | VirtualQueue | AgentPosition | PrimaryAcd | SupplementaryAcd | MailBox | Trunk | Pseudo | MonitorChannel | SpecificDn | CDN | VDN | AgentId | SkillsetId | AdminLine | TerminalNumber | Skillname | Applname | Agntname
tlinkdatakey	Sets tlink data field.	n/a	String with value
activitycode	Sets activity code.	n/a	String with value

Command	Description	Default	Range
dtmf	Sets value of dtmf.	n/a	String with value
tlinkdatavalue	Sets a key/value pair to the container.	n/a	String with value

Example of `csvapi.cfg` file:

```
maxvps 2
servicename cti
telephony_servicename tlsdefault
attachdata_servicename attachdata
service-csvapi start
function_name attachdata
callid_required true

logmode -all
logmode -applic
logmode -connect
logmode -ftrace
logmode -mcblib
logmode -msgdump
logmode -terse
logmode -timer
logmode -verbose
logsize 20480
vpsnumber 1 vpshost ivr1 connecttovps
remotehost localhost remoteport 5151 connecttoremote
```

CSAD options

The following table describes the CSAD options.

Table 59: CSAD options

Command	Description	Default	Range
settype	Sets message type in payload class.	n/a	0-65535
setsubtype	Sets message subtype in payload class.	n/a	0-65535
setpbxid	Sets PBX ID.	n/a	0-2147483647
setntwkid	Sets Network ID.	n/a	0-2147483647
setani	Sets ANI string.	n/a	0-any string
dataonnotification	Sends data with or without notification.	n/a	true | false
contactid	Prints the single record from base.	n/a	0-any string

Command	Description	Default	Range
cleartable	Clears content of the map.	n/a	all | contactid | pbxid | networkid | ani
shutdown	Clears up allocated memory.	n/a	n/a
calldatafilter	Does not allow duplicate calldata key values to appear on the list.	yes	yes | any string
maxtimenoevents	Defines the maximum value in seconds that call can exist with no activity before being deleted from internal tables.	n/a	0-2147483647
calldatadelaytime	Specifies the call data held in milliseconds after the call data has arrived.	n/a	0-2147483647

Example of `csad.cfg` file:

```
logmode +all
logsize 16384
remotehost localhost remoteport 5151 connecttoremote
calldatafilter yes
```

CSRSM options

The following table describes the CSRSM options.

Table 60: CSRSM options

RSM	Description	Default	Range
corbatimeout	Sets timeout.	10000	0-2147483647in ms
corbadll	Sets corba dll for call.	cstao	0 | 256 symbols
datatimeout	Sets data timeouts.	n/a	0-2147483647 in ms
service-csrsmls	Starts and stops service.	start	start | stop

Example of `csrsm.cfg` file:

```
logmode -all
logmode -applic
```

```
logmode -connect
logmode -ftrace
logmode -mcblib
logmode -msgdump
logmode -terse
logmode -timer
logmode -verbose
logsize 20480

maxvps 1
servicename csrsm
telephony_servicename rsmdefault
attachdata_servicename attachdata
service-csvapi start
function_name attachdata
callid_required false
vpsnumber 1 vpshost ivr1 connecttovps
remotehost localhost remoteport 5151 connecttoremote
```

CSHDXLS options

The following table describes the CSHDXLS options.

Table 61: CSHDXLS options

HDX	Description	Default	Range
attachdata_servicename	Attaches data from <servicename>	n/a	64 symbols
fetchmode	Mode of interaction with HDX Bridge	1	valid values: • 0 - synchronous • 1 - asynchronous • 2 - synchronous with reset • 3 - asynchronous with reset
hdxcorbatrace	Trace level. Allows tracing CORBA traffic to extra log file - `hdxorb.log` in the CTI log directory.	0 (off)	0-10
nomsgretry	Delay between sending request-for-message to HDX Bridge, in msec, valid only	10	1-60000 msec

HDX	Description	Default	Range
	when fetchmode is asynchronous. Value 60000 is recommended.		
service-hdx	Starts or stops hdx service.	start	start | stop
sccsstao	TAO flag	0	• 0 = false • 1=true

Example of `cshdxls.cfg` file:

```
logmode -all
logmode -applic
logmode -connect
logmode -ftrace
logmode -mcblib
logmode -msgdump
logmode -terse
logmode -timer
logmode -verbose
logsize 16384

service-hdx start
serviceid hdxdefault
requesttimer 10
pollinginterval 10

pbxtype hdx hostaddress pbxlink clientid 1 machinename 47.185.16.177 applicationid
hdxhost applicationprotocol 0 linkinterface Third_Party_api setlink

serviceid hdxdefault
uniquecallids off

serviceid mcb pbxtype mmpserver hostaddress localhost switchport 5151 linkinterface
ipc setlink

startlinks
```

CSTAPILS options

The following table describes the CSTAPILS options.

Table 62: CSTAPILS options

CSTAPILS	Description	Default	Range
calldatafield	Sets field delimeter.	n/a	0 | 1 symbol | 1 hex code: 0x00 – 0xFE

CSTAPILS	Description	Default	Range
hloc	Sets home location code.	n/a	0-2147483647
nwcallid	Sets network call ID.	n/a	true | 1 | 0 | false
sendcalldatakey	Sends call data key.	true	true | false
service-cstapils	Starts | Stops CSTAPILS service.	start	start | stop

Example of `cstapils.cfg` file:

```
logmode -all
logmode -applic
logmode -connect
logmode -ftrace
logmode -mcblib
logmode -msgdump
logmode -terse
logmode -timer
logmode -verbose
logsize 16384

service-cstapils start

serviceid tapi

pollinginterval 10
requesttimer 10

sendcalldatakey true
calldatafield |

linktype ivrtapi hostaddress symposiumtapisrvr switchport 5000 linkinterface tcp_ip
setlink

serviceid tapils2

pollinginterval 0
requesttimer 0

sendcalldatakey calldatafield

linktype ivrtapi hostaddress pbxlink switchport 5001 linkinterface tcp_ip setlink

serviceid tapi uniquecallids off

serviceid mcb pbxtype mmpserver hostaddress localhost switchport 5151 linkinterface
ipc setlink

startlinks
```

MCB options

The following table describes the MCB options.

Table 63: MCB options

Command	Description	Default	Range
attachdebugger	Allows attach debugger for process.	n/a	n/a
connecttoremote	Opens connection.	n/a	n/a
exit	Shutsdown MCB.	n/a	n/a
logmode	Sets log mode for log file.	logmode -all logmode -applic logmode -connect logmode -ftrace logmode -mcblib logmode -msgdump logmode -terse logmode -timer logmode -verbose	(+ | -) (mcbliberr | applicerr | error | mcblib | applic | terse | verbose | timer | connect | ftrace | msgdump | all)
logsize	Sets log file size in Kb.	n/a	0-1024
logbackups	Sets number of log backups.	1	0-10000
msgstats	Sets message statistics mode.	n/a	on | off | show | reset
remotehost	Sets remote host name.	n/a	256 symbols
remoteport	Sets remote port number.	n/a	0-65535
remoteproc	Sets remote process name.	n/a	256 symbols

Example of `mcb.cfg` file:

```
logmode -all
logmode -applic
logmode -connect
logmode -ftrace
logmode -mcblib
logmode -msgdump
logmode -terse
logmode -timer
logmode -verbose
logsize 1024
```

Chapter 6: Product Updates and Software Uninstallation

This chapter covers:

1. Back up and restore configuration files
2. Patches
3. Software Uninstallation

Patches

This section describes the procedures for performing a system backup and installing and uninstalling patches.

Installing the MPS Patch Bundle

1. Stop Avaya MPS Services.
2. Using Windows Explorer, install the latest patch bundle (example, Avaya_SelfService_4.1.0 Patchbundle 4) by double-clicking on the patch bundle file.
3. Start Avaya MPS Service. See Starting and Stopping Avaya MPS Services on page 110.

Installing PERIcti Patches

1. Stop Avaya MPS Services.
2. Using Windows Explorer, install each patch by double-clicking on the patch file. This creates a folder containing an uninstallation application and copies of the files that are replaced by the patch.

Example patch directory:

```
C:\%MPSHOME%\Patches\cti4.1.1
```

3. Start Avaya MPS Service. See Starting and Stopping Avaya MPS Services on page 110.

Uninstallation

In the unlikely event that a system patch causes unintended effects, you may need to uninstall the patch. Each system patch comes with an uninstallation file, which when executed, removes the files and system information for that patch only. The patch uninstallation file is always named uninstallpatch.pl, regardless of the type of patch, and is located in the directory containing the associated patch.

To uninstall a system patch:

1. Stop Avaya MPS Services. See Starting and Stopping Avaya MPS Services on page 110.
2. Use Windows Explorer to locate the uninstallpatch.pl file.
3. Double-click on the file to execute it.
4. Start Avaya MPS Services. See Starting and Stopping Avaya MPS Services on page 110.

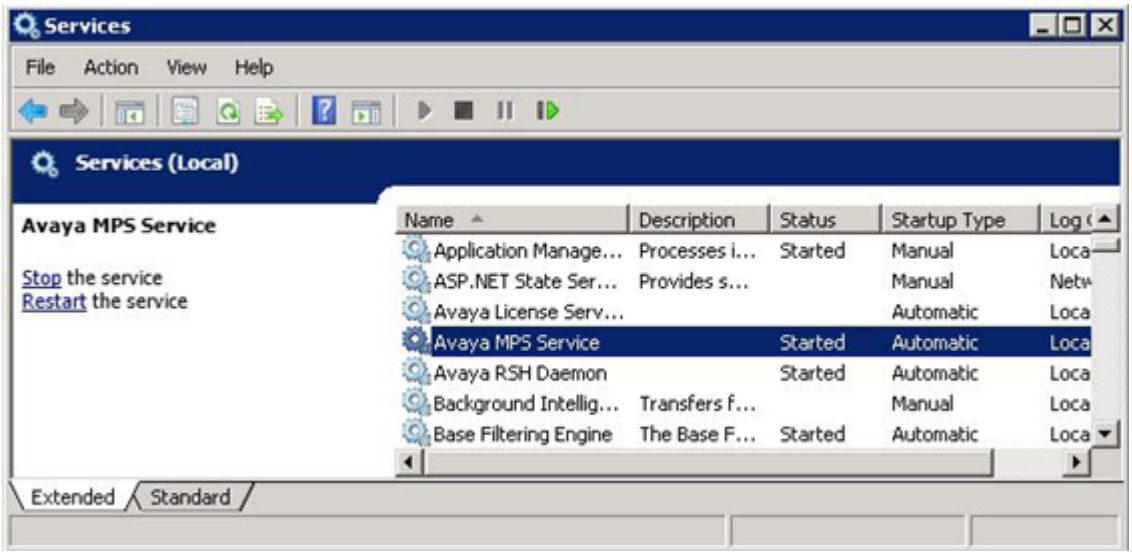
Starting and Stopping Avaya MPS Services

You must stop the Avaya MPS Services before installing the CSInstaller and restart it after installation. Do not perform any installations until all of the PERIpackages have been stopped.

To start or stop the Avaya MPS Services:

1. Go to Start (on the task bar) and select **Control Panel** > **Administrative Tools** > **Services**.

   The Services window appears.



2. In the Services window, scroll down to Avaya MPS Service, and then click the Start or Stop button, whichever is appropriate.

In addition to the Avaya MPS Service, two other services are installed with the CCTIVR system. The Avaya RSH Service facilitates remote file transfers and the Avaya License Service provides license keycodes for the various Avaya software packages.

Important:

For the Avaya MPS Service to work correctly, you must activate the Avaya RSH and License Services. (This dependency is not configured in the Control Panel.) When manually restarting previously stopped services from the Control Panel, you must ensure that RSH and License Services are running before starting the Avaya MPS Service service.

Avaya recommends that you reboot the system after making changes to the configuration (for licensing, added components, and so on). This ensures that the Avaya MPS services are started in the correct order.

Software Uninstallation

Use the following uninstallation procedures to remove the PERI packages.

Use the Windows Add/Remove function to remove the PERI packages.

Note:

If you are reinstalling the software, copy the %MPSHOME%\css1\ directory (and its subdirectories) and the license files into a temporary directory for later use.

1. Stop the Avaya MPS Services and the PERI packages prior to removal. Do not perform any software removals until all of the PERI packages are stopped. To stop

Avaya Startup Services, see Starting and Stopping Avaya MPS Services on page 110

2. Open the Add/Remove Programs utility in the Windows Control Panel.
3. In the Add/Remove Programs Properties window, use the scroll bar to scroll down to the package you want to remove. You must uninstall the packages in the reverse order of installation.
4. Select the package you want to remove and click Add/Remove. Follow the on-screen instructions to remove the package.
5. Refer to the following table to see if any special removal procedures are required for the particular package.

Package	Special Removal Procedures
PERIperl	None
PERIfw	None
PERIglobl	Delete the file named vpstype in C:\winnt\
PERIase	None
PERIplic	None
CCTIVR	Delete all log files in %MPSHOME%\css1\log
Peri-ICM	Delete the Peri-ICM log files in %VPSHOME%\css1\log

6. If you remove all of the PERI packages, delete the entire %MPSHOME%\ directory.

Important:

Do not perform this step unless you remove all the PERI packages.

7. Restart the computer.

Chapter 7: Alarms

Introduction

Every process in the CCTIVR environment writes status and error messages to the alarm log files. These log files are located in the %MPSHOME%\common\log\ directory.

The ALARMD application writes error messages to the appropriate alarm log file. You can examine log files with any text editor or import the files to a spread sheet. You can use the alarm viewer to monitor messages sent to the alarm log in real-time.

The following is important information pertaining to alarms:

- When errors occur, you must immediately copy all log files to other file names so that important data is not overwritten.
- By using ALARMD, SNMP functionality is incorporated automatically. To use the ALARMD SNMP feature, you must install the PERIsnmp package on the Link Server. PERIsnmp requires a separate product license. (For more information, see SNMP and Alarms on page 179, and the document Simple Network Management Protocol in the MPS Environment.)

Severity Levels

Each alarm message is assigned one of five severity levels. Each level has both a text and a numeric designation. The higher the severity number, the more significant the alarm is.

- Informational (1)

  An event occurred, which may worth noting, but there is no danger of loss of functionality or system failure.

- Functional (2)

  A request (for example, device registration, call transfer, and so on) has failed. These errors should be investigated. Generally, if these errors occur infrequently, it does not indicate a serious system problem that will result in lost functionality.

- Warning (4)

There is problem with some basic functionality. This problem should be investigated, but it is probably isolated to a single component or client application.

- Significant (7)

  Something major has occurred on the system such as loss of connectivity to a core resource. This error may require user intervention. For example, if the TAPI server crashes and does not recover, the TAPI server may require rebooting.

- Severe (9)

  This is a programming error that should be reported to Avaya. Although errors of this type might not affect system functionality, they indicate unknown or unexplained program behavior that should be addressed.

Alarm Format

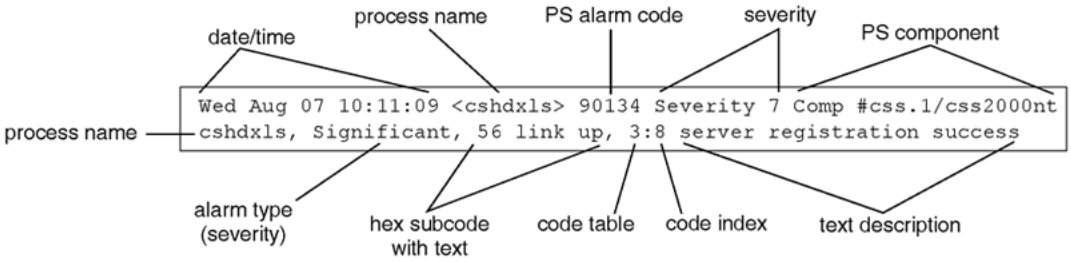
Each alarm is formatted with multiple information fields spanning two lines of text in the log file.

```
date/time <process> PS-alarm-code Severity severity-number Comp component process, alarm-type, hex-subcode subcode-text, hex-code-table:hex-code-index text
```

	Alarm Field	Description
Line 1	`date/time`	When the alarm occurred. The day of the week, month, date and time of day are provided.
	`<process>`	Name of the process that generated the alarm. It is shown with angled brackets.
	`PS-alarm-code`	Processing Server alarm number. This is a decimal number that represents the alarm. This code is used internally, and is not relevant to CTI operations.
	`Severity severity-number`	The keyword Severity followed by the numeric designation of the severity level of the alarm. See Severity Levels on page 113.
	`Comp <component>`	The keyword Comp followed by the system ID number of the particular Processing Server component where the alarm occurred.
Line 2	`process`	The name of the process that generated the alarm.

Alarm Field	Description
`alarm-type`	Text description of the alarm severity. See Severity Levels on page 113.
`hex-subcode` `subcode-text`	Numeric hexadecimal subcode and text description that provide additional information about the alarm.
`hex-code-table` `:hex-code-index text`	Indicates the cause of the event listed in the preceding field. This last field is provided only if the event cause is known. It contains three pieces of information: 1. the hexadecimal value of the code table that contains the cause, followed by a colon, 2. the hexadecimal value of the cause (which is looked up in the table), 3. the text description of the cause as listed in the code table. Alarm code tables are shown on pages, seeCode Tables on page 118.

The following is an example of an alarm logged in the alarm.css.1.log file:



This example alarm provides the following information:

- The occurrence happened on Wednesday, August 7, at 10:11:09.
- The alarm was generated by the CSHDXLS process.
- The alarm severity is Significant (7) on page 114.
- The alarm subcode is 0x56 and its meaning is "link up."
- Additional information for this alarm can be found in reason table 0x3, under code 0x8. The text description is server registration success.

The two text descriptions on the second line (the subcode text and code text) also appears in the cshdxls.log file. This file contains alarm information specific to the CSHDXLS process. If additional diagnostic information is needed, the other alarm data in the cshdxls.log file can provide context for this particular alarm.

Failure Values

0x0	Established connection failed. (severe)
0x1	Connection dropped. (severe)
0x2	DN registration failed. (functional)
0x3	DN unregistration failed. (functional)
0x4	Queue registration failed. (functional)
0x5	Queue unregistration failed. (functional)
0x6	Logon failed. (functional)
0x7	Ready failed. (functional)
0x8	Not ready failed. (functional)
0x9	Logoff failed. (functional)
0xa	Answer failed. (functional)
0xb	Make call failed. (functional)
0xc	Clear call failed. (functional)
0xd	Make set in service failed. (functional)
0xe	Make set busy failed. (functional)
0xf	Hold failed. (functional)
0x10	Retrieve failed. (functional)
0x11	Consultation call failed. (functional)
0x12	Initialization transfer failed. (functional)
0x13	Transfer complete failed. (functional)
0x14	Conference failed. (functional)
0x15	Conference complete failed. (functional)
0x16	Conference retrieve failed. (functional)
0x17	Merge call failed. (functional)
0x18	Blind transfer call failed. (functional)
0x19	Route call failed. (functional)
0x1a	Treatment failed. (functional)
0x1b	Get switch time failed. (functional)

0x1c	Forwarding call failed. (functional)
0x1d	Agent enhanced feature failed. (functional)
0x1e	Read display failed. (functional)
0x1f	Write display failed. (functional)
0x20	NWI failed. (functional)
0x21	Queue group status failed. (functional)
0x22	Work not ready failed. (functional)
0x23	Work ready failed. (functional)
0x25	Adding or removing from a list failed. (functional)
0x26	Initialization of module failed. (significant)
0x27	Request failed. (functional)
0x28	Corba interaction failed. (significant)
0x29	Event structure is null. (significant)
0x24	Could not perform data attachment. (significant)
0x2a	HDX status failure. (significant)
0x2b	Registering with requested server failed. (significant)
0x2c	Socket failed. (significant)
0x2d	Bad options supplied. (functional)
0x2e	General failure. (functional)
0x30	Service started. (significant)
0x31	Service stopped. (significant)
0x32	Process is active. (significant)
0x33	Process is down. (significant)
0x34	Process is up. (significant)
0x35	Process is failure. (significant)
0x36	Process is inactive. (significant)
0x37	Link down. (significant)
0x38	Link up. (significant)
0x39	Socket operation error. (severe)
0x3a	License granted. (significant)
0x3c	Database error. (severe)
0x3b	License denied. (significant)

0x3d	System configuration changed. (information)
0x3e	Phone line application warning. (warning)
0x3f	Phone line application failure. (functional)
0x40	Contact Manager Interaction failed.

Code Tables

Code tables are part of the CTI alarm mechanism. A code table associates hexadecimal numbers with text strings that describe the meaning of each alarm. A code table can be generic and used by multiple applications, or it can be specific to a single application.

An example of a generic code table is Table 64: Code Set 0xfd on page 118, which contains event causes that can occur in any application. An example of an application-specific code table is Table 68: Code Set 0x78 on page 123, which contains event causes that are relevant only to TLS.

Codes for all Applications

Table 64: Code Set 0xfd

0x0	No DN appears to be on the device list.
0x1	Unable to find DN entry.
0x2	Unable to find DN block.
0x3	Null event structure for supplied request.
0x4	Invalid or unknown request type has been passed.
0x5	No link table exists for supplied client.
0x6	Adding to link node failed.
0x7	Getting message type table failed.
0x8	Memory allocation failed for table.
0x9	No DN exists in the passed from client.
0xa	Server in invalid state must be active.
0xb	Unable to remove client.
0xc	Unable to remove DN.

0xd	Invalid version.
0xe	No tlservername supplied in event structure.
0xf	No connection through IP to server or client.
0x10	Redundant state is not active.
0x11	Unable to add DN entry to client table.
0x12	Method not implemented please send log file to support.
0x13	Set or get device parameter needs the requesting DN.
0x14	Invalid parameter selection for deviceparam.
0x15	Invalid message subtype.
0x16	Invalid message type.
0x17	No DN in dntable, critical problem.
0x18	Timer ID has not been set.
0x19	CLM system error encountered see log file for full status information.
0x1a	Only valid requests are: makecall, transfercall, conferencecall, senddtmf, setmonitoring, and unsetmonitoring.
0x1b	Only valid parameter are allowed. Too many to list. See reference manual or phone support or check log file.
0x1c	Only valid events are allowed. Too many to list. See reference manual or phone support or check log file.
0x1d	Only valid failedlist are allowed. Too many to list. See reference manual or phone support or check log file.
0x1e	Only valid eventlistclear are allowed. Too many to list. See reference manual or phone support or check log file.
0x1f	Only valid failedlistclear are allowed. Too many to list. See reference manual or phone support or check log file.
0x20	Could not autoregister DN with client.
0x21	Client ID not specified.

Table 65: Code Set 0xfe

0x0	Invalid timer index supplied by caller.
0x1	Not timer control blocks available, no free timer control blocks found.
0x2	Start timer has failed.
0x3	Cancel timer has failed.
0x4	Cancel timer could not be found.

0x5	Cancel timer could not be found.
0x6	Cancel timer could not be found.
0x7	Not allowed to free an already freed timer.
0x8	Not allowed to cancel this particular timer.
0x9	Set socketoption failed for reuseaddr.
0xa	Binding to socket layer failed.
0xb	Accept failed on.
0xc	Read or closed failed on the supplied socket.
0xd	Try to read <= zero bytes on socket.
0xe	Invalid socket passed.
0xf	Error determining IP address.
0x1	Establishing connection failed.

Table 66: Code Set 0xff

0x0	Invalid version.
0x1	TLINK up.
0x2	TLINK down.
0x3	Timeout.
0x4	Not open.
0x5	No device.
0x6	No application ID.
0x7	No DN.
0x8	No control DN.
0x9	No DDN.
0xa	Not supported.
0xb	No control flag.
0xc	No attached data.
0xd	No agent ID.
0xe	No destination.
0xf	No MDN.
0x10	No call ID.
0x11	No voice channel.

0x12	No mail box.
0x13	No mail box password.
0x14	No voice file.
0x15	No voice file handle.
0x16	No voice segment.
0x17	No IFLAG.
0x18	General error.
0x19	Connection error.
0x1a	Bad call status.
0x1b	Bad DN.
0x1c	Already opened.
0x1d	Unimplemented.
0x1e	Zero length.
0x1f	Parameter error.
0x20	ORB error.
0x21	Register server.
0x22	Register new DN.
0x23	Register new client.
0x24	System error.
0x25	Remote release.
0x26	Unknown.
0x27	General error.
0x28	Busy.
0x29	No answer.
0x2a	Site detected.
0x2b	Answering machine detected.
0x2c	Trunk busy.
0x2d	Invalid event handle.
0x2e	Not registered.
0x2f	No call in progress.
0x30	Invalid server state.
0x31	Encode error.

0x32	Decode error.
0x33	License exceeded.
0x34	Invalid state transition.
0x35	Send message over socket failed.

Codes for TLS (0x04)

0x0	Handler table not found.
0x1	Current link is not found.
0x2	Current link is null.
0x3	No more than 2 Call IDs allowed on the DN.
0x4	This device is null.
0x5	Event is unexpectedly null.
0x6	Unknown option passed in by caller.
0x7	Bad pointer passed.
0x8	Could not add element to list.
0x9	Request event is null.
0xb	Destination device is null.
0xc	Null value passed as part of the call for the option.
0xd	The number zero was passed as part of the call for the option.
0xe	User has forced a restart of the TLS by hand.
0xf	The only valid option for this command is restart.
0x10	Valid options are clear, show, and stats.
0x11	Selected purgetime is too small.
0x12	TLS cleartable [agents | callids | delayqlist | dnmap | reqstList] are the only valid options.
0x13	dnmap valid options are show and clear.
0x14	defaultagentmode <AgentNotReady | AgentReady | AgentLoggedOn> are the only valid options.
0x15	tls_callstats show|reset.
0x16	afterCallReady <on|off>.

0x17	Valid inputs are show, clear, off, and on.
0x18	Max delay must be non zero.
0x19	Unable to add device to table.
0x1a	Only valid options for display are: devices, agents, callids, licenseinfo, delayQlist, eventCallStats, dnmap, linktype, reqstlist, reqstats, and trackerrlist.

Codes for Meridian Link

Table 67: Code Set 0x10

0x0	tlserver name was unexpectedly null.
0x1	No memory allocate from malloc.
0x2	Unable to perform function the system is already running.
0x3	Null link handle pointer detected.
0x4	Unable to find a valid link the service has not been stopped.
0x5	Bad invokeid found. Message will not be sent to the server.
0x6	Unable to send message over socket.
0x7	Neither stop nor start was selected, The system will not be started.
0x8	Pass variable is a null value.
0x9	No host IP address has been supplied.
0xa	Unknown switch type encountered.

Table 68: Code Set 0x78

0x0	Unknown.
0x2	Bad association.
0x3	Bad message type.
0x4	Unexpected IE.
0x5	Message not part of registered service.
0x6	IE missing.
0x7	Bad affected association ID.
0x8	Bad message length.

0x9	Bad sequence number.
0xa	Link down or bad link specified.
0xb	Request already in progress.
0xc	Too many outstanding requests.
0xd	Message out of sequence.
0x502	Association table full.
0x503	Application table full.
0x504	Association already exists.
0x505	Bad Meridian 1 machine name.
0x506	Bad host machine name.
0x507	Requested service unavailable.
0x508	Bad password.
0x509	Polling timeout.
0x50a	Bad Meridian mail name.
0x702	Cannot register all DNs.
0x703	DN for association does not exist.
0x704	DN table full.
0x705	DN already registered.
0x706	Customer number not registered.
0x707	Cannot remove DN.
0x708	Bad DN type for DN registration.
0x902	Link process does not exist.
0x903	Link ID already exists.
0x904	Meridian 1 machine name or host ID already exists.
0x905	Bad link ID.
0x906	Link already enabled.
0x907	Link already disabled.
0x908	Error in opening configuration file.
0x909	Link configuration failed.
0x90a	Enable link command failed.
0x90b	Disable link command failed.
0x90c	Link command not supported.

0x90d	Link statistics request failed.
0x90e	Link configuration information is too large.
0x90f	Link command failed due to reconfiguration.
0x910	Trace already enabled.
0x911	Trace already disabled.
0x912	Link failed, SW option not equipped.
0x913	Link failed, Meridian 1 mismatch.
0x914	No link responding.
0xb02	Facility already enabled.
0xb03	Facility already disabled.
0xb04	Messages already set.
0xb05	Messages already cleared.
0xb06	Unable to open, write, or close recording file.
0xb07	Bad affected message.
0xb08	Cannot clear all.
0xc00	Account inactive timeout expired.
0xc01	Meridian Mail shutdown by administrator.
0xc02	Meridian Mail system error.
0xc03	Incoming voice channel not answered.
0xc04	Too many bad login attempts.
0xd02	Flow control level 1.
0xd03	Flow control level 2.
0xd04	Flow control level 3.
0xd05	Flow control condition cleared.
0xf00	Bad system command.
0x1002	Access restricted.
0x1003	Resource unavailable.
0x1004	Invalid customer number.
0x1005	Invalid origination address.
0x1006	Invalid destination address.
0x1007	Invalid manner.
0x1008	Unsuccessful retrieve original.

0x1009	Unsuccessful transfer.
0x100a	Unsuccessful conference.
0x100b	Unsuccessful answer request.
0x100c	Unsuccessful release request.
0x1070	Refer to connection status IE.
0x2004	Target DN is invalid.
0x2005	Target DN is not AST.
0x2006	Invalid customer number 2.
0x2007	Feature could not be invoked.
0x2008	Feature was not configured on set.
0x2009	Requested feature is out of range.
0x200a	Target set is not an ACD agent.
0x200b	Target set is a virtual agent.
0x200c	Set is maintenance busy.
0x200d	Set is in the wrong state for invocation.
0x200e	Set is in the target state.
0x200f	No NRDY/RDY while ACD set is logged out.
0x2010	Package C customer cannot use NRDY with an IDN call.
0x2011	Feature IE is missing or invalid.
0x2012	DN IE is missing or invalid.
0x2013	Agent ID IE is missing or invalid.
0x2014	Agent ID is invalid.
0x2015	Call forward DN IE is invalid.
0x2016	Call forward DN is too long.
0x2017	Call forward DN is invalid.
0x2018	User is invoking call forward.
0x2019	MSB MSI not supported for 500/2500 sets.
0x201a	500/2500 ACD agent already changed status.
0x201b	500/2500 ACD agent set is being rung.
0x201c	User is manually logging in 500/2500 set.
0x201d	MLink Server option 209 is not equipped.
0x2020	Resource already acquired by another application.

0x2021	Resource already acquired by this application.
0x2022	Resource is not released.
0x2023	Application cannot acquire all the resources.
0x2024	Resource type is unknown.
0x2025	AML is down.
0x2026	Resource table is full.
0x2027	CDN is not configured.
0x2028	Polling timer is out of range.
0x2029	Resource ID length is too long.
0x202a	Device disabled by administration.
0x202b	No response to operation request.
0x202c	Logon tries have been exceeded.
0x2030	SW release not equipped.
0x2031	Resource is not acquired by application.
0x2032	Registration not set up for request.
0x2033	Internal error.
0x2034	Bad resource ID.
0x2035	No internal resource available.
0x2036	Service not available on device.
0x2037	Device not available.
0x3001	Bad parameter passed to function.
0x3002	No result available yet.
0x3003	No result command timed out.
0x3004	Out of local memory.
0x3005	Invalid application class.
0x3006	Command invalid before an acquire.
0x3007	Must register first.
0x3008	Must unregister first.
0x3009	DN is busy.
0x300a	No answer at DN.
0x300b	Call has been rejected.
0x300c	Call connection attempt has failed.

0x300d	Call resulted in collision.
0x300e	Timeout performing operation.
0x300f	Call has disconnected.
0x3010	Message send failed no queue space.
0x3011	Invalid process type.
0x3012	System error accessing API queue.
0x3013	System error accessing event queue.
0x3014	Monitor function already installed.
0x3015	Client is not the monitor process.
0x3016	API is not usable, wrong access.
0x3017	Could not access or open semaphore.
0x3018	No file at path specified.
0x3019	Could not fork process at path.
0x301a	Link manager was already dead.
0x301b	Did not spawn LMP via m_StartLink.
0x301c	Caller had dead child besides LMP.
0x301d	LMP too long to die.
0x301e	LH not synchronized with MM, command failed.
0x301f	LH not synchronized with MM, command succeeded.
0x3020	LH is synchronized with MM.
0x3021	LH returned an unexpected value.
0x3022	API is restricted from monitor.
0x3023	No LH configuration file found.
0x3063	Operation not currently supported.
0x3066	Invalid password.
0x3067	No MM ACCESS toolkit available.
0x3068	No free blocks, server is full.
0x3069	No free disk space in user cabinet.
0x306a	Must be logged on to use cabinet.
0x306d	Access to account denied.
0x306f	Command failed, check SEER console.
0x3071	Invalid account type.

0x3073	Already acquired.
0x3075	Too many failed M_Logon attempts.
0x3078	API function is not supported.
0x307a	Out of memory.
0x307e	Bad user ID or mailbox number.
0x3080	Invalid flag (0 or 1 is valid).
0x3081	Warning! Logged on elsewhere.
0x3083	API being used is not supported by MM.
0x3085	Invalid customer number specified.
0x3086	Cannot assume command while logged on.
0x3087	Application has already acquired ENS.
0x3088	Must be an ENS application to invoke APINS.
0x3096	Option not available to customer.
0x3097	Max number of acquire request reached.
0x3098	Session already released by system.
0x30c8	No connection has been established.
0x30c9	No voice channel available.
0x30cb	Invalid voice start position.
0x30cc	Invalid play position.
0x30cd	Invalid recording position.
0x30d0	Invalid direction.
0x30d3	Voice channel already in use.
0x30d4	No voice channel has been acquired.
0x30d5	No incoming call to answer.
0x30d6	Must call m_AddOnCall.
0x30d7	Channel already accepting calls.
0x30d9	Other telephony operation in progress.
0x30df	Play command already in progress.
0x30e0	Invalid command sequence.
0x30e1	Record command already in progress.
0x30e3	Voice operation failure.
0x30e4	No voice in segment to play.

0x30e5	At end of voice segment.
0x30e7	Ended because of too much silence.
0x30e8	Recording limit has been reached.
0x30e9	Bad number of segments specified.
0x30eb	Segment play queue is full.
0x30ec	Invalid DTMF string.
0x30ed	Context must be sound or silence.
0x30ee	Duration must be less than or equal to 5 minutes.
0x30ef	No previous detect in progress.
0x30f0	Sound detect already in progress.
0x30fa	Must install event handler first.
0x3135	No such entry found in the directory.
0x3190	Unable to access user's cabinet.
0x3191	Invalid file handle passed to command.
0x3192	Unassigned file handle.
0x3193	Invalid commit flag.
0x3195	Reached the beginning of the file.
0x3196	Cannot open read file in write mode.
0x3197	Reached the end of file.
0x3199	File is already opened.
0x319a	Read-only file not committed.
0x319b	Cannot perform command on read-only file.
0x319f	Invalid filename format.
0x31a0	Maximum open file limit reached.
0x31a3	Must all m_FilePattern first.
0x31a4	File does not exist.
0x31a9	Invalid new flag passed.
0x31aa	Invalid file access mode used.
0x31af	Invalid delete parameter.
0x31b0	Command invalid on this file type.
0x31b1	Segment ID not found in file.
0x31b2	Invalid length on field.

0x31b4	Must call m_SegPattern first.
0x31b5	Invalid script length field.
0x31b6	Issue script retrieve command first.
0x31b7	No voice segments in the file.
0x31b9	Script for voice segment too long.
0x31bc	Reached maximum number of segments allowed in file.
0x31bd	Bad voice segment file type.
0x31be	Invalid language specified.
0x31c0	Invalid segment editing position.
0x31c1	Invalid segment editing operator.
0x31c2	Invalid amount specified.
0x31f4	File is not a message file.
0x31fc	Invalid receiver in address list.
0x31fd	Exceeded maximum number message recipients.
0x31ff	Invalid subject string.
0x3200	Cannot send an empty string.
0x3201	Callsend/reply only on received messages.
0x3203	Must call m_AddrPattern first.
0x3207	Cannot reply to external messages.
0x3208	Cannot forward a private message.
0x320a	Need one or more receivers to send.
0x320b	Multiple names matched specified entry.
0x320c	Cannot send an incoming message.
0x320d	Delay delivery time too long.
0x320e	Remote site not recognized.
0x320f	Operations invalid on system messages.
0x3210	Cannot ReplyAll to broadcast message.
0x321a	Cannot ReplyAll to AMIS message.
0x3258	List number not found.
0x3259	Invalid PDL list number.
0x325a	Exceeded maximum number of entries in PDL.
0x325b	Unable to access user profile.

0x326e	Restricted to Administrator access only.
0x326f	Invalid box number.
0x3271	Invalid last name.
0x3272	Invalid first name.
0x3273	List number.
0x3274	Password too short.
0x3275	Invalid greeting type.
0x3276	Old password and logged on elsewhere.
0x3277	Old passwords cannot be reused.
0x3278	Personal verification already open.
0x3279	Greeting already open.
0x327a	Nonnumeric in numeric field.
0x327c	No matching box address in PDL.
0x327d	Must call m_PDLPattern first.
0x327e	Not a PDL file.
0x327f	Invalid external message type.
0x32bc	Set HiLev flag before invoking API.
0x32bd	Invalid digit in ExitDigits.
0x32be	Interdigit timeout occurred.
0x32bf	Key buffer overflow occurred.
0x32c0	API interrupted by MM event.
0x32c1	ItemToPlay has invalid format.
0x32c2	Invalid PlayType specified.
0x32c3	PLAYEND event not received.
0x3326	Invalid Directory Number passed.
0x3328	Invalid answer flag.
0x332b	DN has a restricted prefix.
0x3384	LH register table full.
0x338e	LH trans table full.

Table 69: Code Set 0x02e

0x0	Called party ringing.

0x1	Called party answered, no ringing.
0x2	Retrieve original complete.
0x3	Conference done.
0x4	Transfer done.
0xa	Called party ringing MADN.
0xb	Waiting in ACD queue or CDN.
0xc	Waiting in attendant queue.
0xd	Trunk seized.
0xe	In ready state.
0xf	Connection request acknowledged.
0x10	Call waiting in queue.
0x100	Routed to ACD queue or attendant.
0x101	Called party answered.
0x102	Calling party abandoned.
0x103	End warning tone.
0x10a	Failure condition.
0xa00	Invalid calling TN (for example, one of the following: set not AST, invalid customer number, VAS ID not defined, security not turned on, or SECU =NO in LD 17).
0xa01	Invalid calling DN, wrong DN specified.
0xa02	Incomplete calling DN.
0xa03	Invalid called DN.
0xa04	Incomplete called DN.
0xa05	Invalid called TN.
0xa06	Invalid origination manner. This can happen if an invalid manner is specified in the Manner IE of a MakeCall.
0xa07	Invalid destination manner.
0xa08	Invalid origination user type. This can occur when sending a MakeCall for a 500/2500 phone set (off-hook) with the polite manner.
0xa09	Invalid customer number.
0xa0a	System or database error.
0xb00	Origination party busy.
0xb01	Origination resource blocking.
0xb02	Origination set maintenance busy.

0xb03	Set onhook.
0xb04	Origination DN busy MADN.
0xb05	Origination ringing.
0xb06	Unable to disconnect origination.
0xb07	Origination access restriction blocking.
0xb08	Origination call on permanent hold.
0xb0a	System or database error on origination.
0xb0b	Origination receiving EES.
0xb0c	Call currently in ACD queue.
0xb0d	Origination set invoked hold.
0xb14	Transfer key not configured.
0xb15	Transfer key not idle.
0xb16	Set active in conference call.
0xb17	Transfer or MPO/TSA class of service not configured.
0xb18	Cannot put call on hold.
0xb1d	No active call exists on set.
0xb1e	No held call exists on set.
0xc00	Terminating party busy.
0xc01	Destination resource blocking.
0xc02	Destination in invalid state.
0xc07	Destination access restriction blocking.
0xd0a	System or database error on termination.
0xd00	Cannot complete conference.
0xd01	Cannot initiate transfer.
0xd02	Cannot complete transfer.
0xd03	Cannot retrieve original call.
0xd00	Cannot complete conference.
0xd01	Cannot initiate transfer.
0xd02	Cannot complete transfer.
0xd03	Cannot retrieve original call.
0xd04	Fasttransfer initiation failed.
0xd05	Fasttransfer completion failed.

0xd0b	Transfer/conference hold request failed.
0xe01	Call ID 1 is invalid.
0xe02	Call ID 2 is invalid.
0xe03	Merge party 1 is not originating or terminating party.
0xe04	Merge party 2 is not originating or terminating party.
0xe05	Set type of Call ID 1 is not supported for call merge.
0xe06	Set type of Call ID 2 is not supported for call merge.
0xe07	Trunk type of Call ID 1 is not supported for call merge.
0xe08	Trunk type of Call ID 2 is not supported for call merge.
0xe09	Call ID 1 is not in a state to allow call merge.
0xe0a	Call ID 2 is not in a state to allow call merge.
0xe0b	Trunk disconnect supervision problem is merged.
0xe0c	Call merge denied due to access restrictions.
0xe0d	Call merge denied due to unavailability of timeslots.

Table 70: Code Set 0x0aa

0x0	Successful.
0x1	Call status invalid priority.
0x2	Invalid message length.
0x3	Invalid route address.
0x4	Invalid application type.
0x5	Invalid message type.
0x6	Invalid message reference ID.
0x7	Invalid customer number.
0x8	Cannot obtain Call ID.
0x9	Invalid Call ID.
0xa	Request rejected.
0xb	Inappropriate first treatment.
0xc	CDN not acquired.
0x20	Invalid subtype.
0x21	33.
0x22	34.

Codes for Avaya ASAI

Table 71: Code Set 0x00

0x1	Unassigned number.
0x10	Normal clearing.
0x11	User Busy.
0x12	No user responding.
0x15	Call rejected.
0x16	Number changed or SIT - Vacant.
0x1c	Invalid number or Domain or SIT - Ineffective other.
0x1d	Facility rejected.
0x1f	Normal, unspecified, or SIT - DOWN.
0x22	No circuit or channel available or SIT - no circuit.
0x29	Temporary failure.
0x2a	Switching equipment congestion or SIT - reorder.
0x32	Requested facility not subscribed or provisioned.
0x34	Outgoing calls are barred.
0x3a	Bearer capability not currently available.
0x51	Invalid CRV.
0x52	Identified channel does not exist.
0x58	Incompatible destination.
0x5f	Invalid message, unspecified.
0x60	Mandatory information element missing.
0x61	Message nonexistent or not implemented.
0x62	Message not compatible with call state.
0x63	Information element non existent.
0x64	Invalid information element.
0x66	Recovery on timer expiry.
0x6f	Protocol Error.
0x7f	Normal, Unspecified.

Table 72: Code Set 0x03

0x8	Single step conference = listen only (no visibility).
0x9	Single step conference = listen only (full visibility).
0xa	Agent on hook.
0xb	Agent not member of split.
0xc	Agent state inconsistent with request.
0xd	Agent logged into maximum number of splits.
0xe	Incorrect number of agent login digits.
0xf	Agent not logged in.
0x10	In same state.
0x11	Timed answer.
0x12	Voice energy answer.
0x13	No answer.
0x14	Trunks not available.
0x15	Classifiers not available.
0x16	Queues full.
0x17	Remain in queue.
0x18	Answering machine.
0x19	Call forwarding (redirection).
0x1a	Cover, Principal Busy (redirection).
0x1b	Out of service
0x1c	Redirected.
0x1d	Send all calls, cover all calls, goto cover active, adjunct redirected, converge, all call appearances used all with redirection.
0x26	Network out of order.
0x28	Resources not available.
0x29	Hunt group or split not administered correctly.
0x2a	Permission denied.
0x2b	Administration in progress.
0x2e	Feature request rejected.
0x35	Service or option not available.
0x3f	Service or option not implemented.

0x4f	Service or options not available.
0x50	Incompatible options.
0x56	Call with requested identity has been terminated.
0x57	Internal ECS Audit.

Codes for Genesys TServer

Table 73: Code Set 0xf6

0x28	No More Licenses.
0x32	Unknown error code.
0x33	Unsupported operation.
0x34	Internal error.
0x35	Invalid attribute.
0x36	Switch not connected.
0x37	Incorrect protocol version.
0x38	Invalid connection ID.
0x39	Timeout.
0x3a	Out of service.
0x3c	Invalid Calling TN.
0x3d	Invalid Calling DN.
0x46	Incomplete Calling DN.
0x47	Invalid Called DN.
0x48	Incomplete Called DN.
0x49	Incomplete Called TN.
0x4a	Invalid Origination Manner.
0x4b	Invalid Destination Manner.
0x4c	Invalid Origination User Type.
0x4d	Invalid Customer Number.
0x4e	System or database Error.
0x4f	Origination Party Busy.

0x50	Origination Resource Blocking.
0x51	Origination Set Maintenance Busy.
0x52	Is On Hook.
0x53	Origination DN Busy.
0x54	Origination Ringing.
0x55	Unable To Disconnect Origination
0x56	Origination Access Blocking.
0x57	Origination On Permanent Hold.
0x58	Origination System Error.
0x59	Origination End.
0x5a	Origination Party In Acd.
0x5b	Terminating Party Busy.
0x5c	Destination Resource Blocking.
0x5d	Destination Invalid State.
0x5e	Destination Access Blocking.
0x5f	Destination System Error.
0x60	Cannot Complete Conference.
0x61	Cannot Initiate Transfer.
0x62	Cannot Complete Transfer.
0x63	Cannot Retrieve Original Call.
0x64	Unknown cause.
0x65	Bad association ID.
0x66	Bad message type.
0x67	Unexpected information element.
0x68	Message not part of registered service.
0x69	Information element missing.
0x6a	Bad affected association ID
0x6b	Bad message length.
0x6c	Bad sequence number.
0x6d	Link down or bad link specified.
0x6e	Request already in progress.
0x6f	Too many outstanding requests.

0x70	Message out of sequence (for example, the application tries to open a voice file before sending a message to logon mailbox).
0x71	Association table is full.
0x72	Application table is full.
0x73	Application already exists.
0x74	Bad Meridian 1 machine name.
0x75	Bad host machine name.
0x76	Requested service unavailable.
0x77	Bad password.
0x78	Polling timeout.
0x79	Bad Meridian Mail Name.
0x7a	Cannot register all DNs.
0x7b	DN for association does not exist
0x7c	DN table is full.
0x7d	DN already registered.
0x7e	Customer number must be registered to register a DN.
0x7f	Cannot remove DN.
0x80	Bad DN type for DN registration.
0x81	Link process does not exist.
0x82	Link ID already exists.
0x83	Meridian 1 machine name or Host ID already exists.
0x84	Bad link ID
0x85	Link already established.
0x86	Link already disabled.
0x87	Error in opening configuration file.
0x88	Link configuration failed.
0x89	Enable link command failed.
0x8a	Disable link command failed.
0x8b	Link command not supported.
0x8c	Link statistics request failed.
0x8d	Link configuration information is too large.
0x8e	Link command failed due to reconfiguration of associated link.
0x8f	Trace already enabled.

0x90	Trace already disabled.
0x91	Link to Meridian 1 failed because required software option not equipped.
0x92	Link to Meridian 1 failed due to Meridian 1 ID mismatch.
0x93	No link responding.
0x94	Facility already enabled.
0x95	Facility already disabled.
0x96	Messages already set.
0x97	Messages already cleared.
0x98	Unable to open/write/close recording file.
0x99	Bad affected message.
0x9a	Cannot clear all (filter, monitor, or record).
0x9b	Account inactive (time-out expired).
0x9c	Meridian Mail shutdown by administrator.
0x9d	Meridian Mail system error.
0x9e	Incoming Voice Channel not answered in 15 seconds.
0x9f	Too many bad login attempts.
0xa0	Flow control - level 1.
0xa1	Flow control - level 2.
0xa2	Flow control - level 3.
0xa3	Flow control condition cleared.
0xa4	Bad system command.
0xa5	Access restricted.
0xa6	Resource unavailable.
0xa7	Invalid customer number.
0xa8	Invalid origination address.
0xa9	Invalid destination request.
0xaa	Invalid manner.
0xab	Unsuccessful retrieve original.
0xac	Unsuccessful transfer.
0xad	Unsuccessful conference.
0xae	Unsuccessful answer request.
0xaf	Unsuccessful release request.

0xb0	Refer to Connection Status IE for information
0xb1	Target DN Invalid.
0xb2	Target DN not AST.
0xb3	Feature could not be invoked.
0xb4	Feature not configured to set.
0xb5	Requested feature out of valid range.
0xb6	Target set not ACD agent.
0xb7	Target set is a Virtual Agent
0xb8	Set is maintenance busy.
0xb9	Set is in wrong state for invocation.
0xba	Set is in target state.
0xbb	No NRDY/RDY while ACD set is logged out.
0xbc	Package C customer can't use NRDY with IDN call.
0xbd	Feature IE is missing or invalid.
0xbe	DN IE is missing or invalid.
0xbf	Agent ID IE is missing or invalid.
0xc0	Agent ID is invalid.
0xc1	CFW DN IE is invalid.
0xc2	The Call Forward DN is too long.
0xc3	The call Forward DN is invalid
0xc4	User is invoking Call Forward.
0xc5	MSB/MSI not supported for 500/2500 sets.
0xc6	500/2500 ACD agent already changed status.
0xc7	500/2500 ACD agent set is being rung.
0xc8	User is manually logged in 500/2500 ACD set.
0xc9	Meridian Link Server Option 209 is not equipped.
0xca	The resource is already acquired by another application.
0xcb	The resource is already acquired by this application.
0xcc	The resource is not released.
0xcd	The application can't acquire all the resource.
0xce	The resource type is unknown.
0xcf	The AML is down.

0xd0	The resource table is full.
0xd1	The CDN is not configured or to operate on controlled mode.
0xd2	The Poll timer is out of range.
0xd3	The resource ID length is too long.
0xd4	Device disabled by administration.
0xd5	No response to operation request.
0xd6	Logon tries exceeded.
0xd7	This release of the Meridian 1 software is not equipped to operate this feature.
0xd8	The resource is not acquired by the application.
0xd9	Registration not set up for request.
0xda	Internal error.
0xdb	Bad resource ID.
0xdc	No internal resource available.
0xdd	Service not available on device.
0xde	Device not available.
0xdf	Bad parameter passed to function.
0xe0	No result available yet.
0xe1	No result - command timed out.
0xe2	Out of memory (local).
0xe3	Invalid application class.
0xe4	Command invalid before 'Acquire'.
0xe5	Must register first.
0xe6	Must deregister first.
0xe7	DN is busy.
0xe8	No answer at DN.
0xe9	Call has been rejected.
0xea	Call connection attempt has failed.
0xeb	Call resulted in collision.
0xec	Timeout performing operation.
0xed	Call has disconnected.
0xee	Msg send failed: no queue space.
0xef	Invalid process type.

0xf0	System error accessing API queue.
0xf1	System error accessing Event queue.
0xf2	Monitor function already installed.
0xf3	Client is not the monitor process.
0xf4	API not usable: wrong ACCESS ver..
0xf5	Could not access/open a semaphore.
0xf6	No file at path specified
0xf7	Couldn't fork process at path.
0xf8	Link Manager was already dead.
0xf9	Did not spawn LMP via m_Startlink.
0xfa	Caller had dead child besides LMP.
0xfb	LMP took too long to die.
0xfc	LH not synch with MM cmmd failed.
0xfd	LH not synch with MM cmmd succeeded.
0xfe	LH not synchronized with MM.
0xff	LH returned an unexpected value.
0x100	API is restricted from monitor.
0x101	No LH configuration file found.
0x102	Operation not currently supported.
0x103	Invalid Password.
0x104	No MM ACCESS Toolkit available.
0x105	No free blocks, server is full
0x106	No free disk space in User Cabinet.
0x107	Must be logged on to use this command.
0x108	Access to account denied.
0x109	Command Failed, check SEER console.
0x10a	Invalid account type.
0x10b	Already Acquired.
0x10c	Too many failed m_Logon attempts.
0x10d	API function is not supported.
0x10e	Bad user id or mailbox number.
0x10f	Invalid flag (0 or 1 are valid).

0x110 Warning: Logged on elsewhere.
0x111 API being used not supported by MM.
0x112 Invalid customer number specified.
0x113 Can't issue command while logged in.
0x114 An Appl has already acquired ENS.
0x115 Must be ENS Appl to invoke APINS.
0x116 Option not available to customer.
0x117 Max. # of acquire requests reached.
0x118 Session already released by system.
0x119 No connection has been established.
0x11a No voice channel available.
0x11b Invalid play position.
0x11c Invalid recording position.
0x11d Invalid direction (parameter).
0x11e Voice channel already in use.
0x11f No voice channel has been acquired.
0x120 No incoming call to answer.
0x121 Must call m_AddOnCall first.
0x122 Channel already accepting calls.
0x123 Other telephony operation in progress.
0x124 Play command already in progress.
0x125 Invalid command sequence.
0x126 Record command already in progress.
0x127 Voice operation failure.
0x128 No voice to segment to play.
0x129 At end of voice segment.
0x12a Ended because too much silence.
0x12b Recording limit has been reached.
0x12c Bad number of segments specified.
0x12d Segment play queue is full.
0x12e Invalid DTMF string.
0x12f Context must be SOUND/SILENCE.

0x130	Duration must be <= 5 Mins.
0x131	No Previous Detect in progress.
0x132	Sound Detect already in progress.
0x133	Must install event handler first.
0x134	No such entry found in directory.
0x135	Unable to access user's cabinet.
0x136	Invalid file handle passed to cmd.
0x137	Unassigned file handle.
0x138	Invalid commit flag (parameter).
0x139	Reached the beginning of file.
0x13a	Cannot open Read file in Write mode.
0x13b	Reached the end of file.
0x13c	File is already open.
0x13d	Read-only file: Not commited.
0x13e	Can't do command on Read-only file.
0x13f	Invalid filename format.
0x140	Maximum open file limit reached.
0x141	Must call m_FilePattern first.
0x142	File does not exist.
0x143	Invalid new flag passed.

Table 74: Code Set 0x00

0x144	Invalid file access mode used.
0x145	Invalid delete parameter.
0x146	Command invalid on this file type.
0x147	Segment ID not found on file.
0x148	Invalid length on field.
0x149	Must call m_SegPattern first.
0x14a	Invalid script length field.
0x14b	Issue script retrieve cmd first.
0x14d	Too many open seg. files for play.
0x14e	Script for voice segment too long.

0x14f Reached max # segs allowed in file.

0x150 Bad voice segment file type.

0x151 Invalid language specified.

0x152 Invalid segment editing position.

0x153 Invalid segment editing operator.

0x154 Invalid amount specified.

0x155 File is not a message file.

0x156 Invalid receiver in address list.

0x157 Exceeded maximum number of message recipients.

0x158 Invalid subject string.

0x159 Cannot send an empty message.

0x15a CallSender/Reply only on received messages.

0x15b Must call m_AddrPattern first.

0x15c Cannot reply to external message.

0x15d Cannot forward a private message.

0x15e Need 1 or more receivers to send.

0x15f Multiple names matched, specify.

0x160 Cannot send an incoming message.

0x161 Delay delivery time too long.

0x162 Remote site not recognized.

0x163 Operations invalid on system message.

0x164 Cannot Reply All to Broadcast message.

0x165 Cannot reply all on AMIS message.

0x166 List number not found.

0x167 Invalid PDL list number.

0x168 Exceeded maximum number of entries in PDL.

0x169 Unable to access user profile.

0x16a Restricted to admin access only.

0x16b Invalid box number.

0x16c Invalid last name.

0x16d Invalid first name.

0x16e Invalid list number.

0x16f	Password too short.
0x170	Invalid greeting type.
0x171	Old password and logged on elsewhere
0x172	Old passwords cannot be reused.
0x173	Personal Verification already open.
0x174	Greeting already open.
0x175	Nonnumeric in numeric field.
0x176	No matching box address in PDL.
0x177	Must call m_PDLPattern first.
0x178	Not a PDL file.
0x179	Invalid external message type.
0x17a	Set HiLev flag before invoking API.
0x17b	Invalid digit in ExitDigits.
0x17c	Inter Digit Timeout occurred.
0x17d	Key Buffer overflow occurred.
0x17e	API interrupted MM event.
0x17f	ItemToPlay in invalid format.
0x180	InvalidPlayType specified.
0x181	PLAYEND event not received.
0x182	Invalid Directory Number passed.
0x183	Invalid answer flag.
0x184	DN has a restricted prefix.
0x185	LH register Table full.
0x186	LH Trans Table full.
0x190	Invalid priority.
0x191	Invalid message length.
0x192	Invalid route address.
0x193	Invalid application type.
0x194	Invalid message type.
0x195	Invalid message reference ID.
0x196	Invalid customer number.
0x197	Can't obtain call register.

0x198	Invalid call reference ID.
0x199	Call being presented, request rejected.
0x19a	Inappropriate first treatment, call in default.
0x19b	Application has not acquired the CDN.
0x19c	Invalid subtype.
0x19d	Invalid music route or destination.
0x19e	Music connection blocked.
0x1fa	Request received in an invalid state.
0x258	Invalid origination or destination address.
0x259	Capability sequence has been violated, or underlying protocol error has been detected.
0x25a	Resources to fulfill service are not available.
0x25b	Capability is implemented but not subscribed to by requester.
0x25c	Noncompatible options selected.
0x25d	One of the required parameters is missing.
0x25e	Value specified in parameter is not allowed or defined.
0x25f	Domain or call is being monitored by another adjunct.
0x260	Call is no longer in active state.
0x261	Message not compatible with call state.
0x262	Invalid call identifier used or call does not exist.
0x263	Incompatible options used to establish the call.
0x264	Timer expired.
0x265	Agent not logged in to split.
0x266	Agent not member of specified split or split number specified incorrectly.
0x267	User busy.
0x268	Origination address does not respond to service.
0x269	Permission checks for service have failed.
0x26a	Association terminated because service is not active.
0x26b	Domain has been removed by administration.
0x26c	Agent not in compatible state.
0x26d	Agent logged into the maximum number of splits.
0x26e	Invalid login password.
0x26f	Request to put agent in same state agent is already in.

0x270	ACD not provisioned or optioned.
0x271	Normal termination; call routed successfully.
0x272	Association terminated because of network congestion.
0x273	Unknown information element detected.
0x274	Queue is full.
0x275	Reorder/denial.
0x276	Administration is in progress; request cannot be serviced.
0x277	The switch has rejected a request from the adjunct.
0x278	Unassigned number.
0x279	Call rejected.
0x27a	Number changed.
0x27b	Normal, unspecified.
0x27c	No circuit or channel available.
0x27d	Temporary failure.
0x27e	Bearer capability not presently available.
0x27f	Incompatible destination.
0x280	Invalid message, unspecified (backward compatibility).
0x281	Message nonexistent/not implemented.
0x282	Unspecified.
0x283	No answer.
0x284	Trunks not available.
0x285	Classifiers not available.
0x286	Redirected.
0x287	Network out of order.
0x288	Undefined value returned from switch.
0x289	Outgoing call has been barred.
0x28a	Call remains in queue.
0x28b	Bearer service not implemented.
0x28c	Assumed answer based on internal timer.
0x28d	Voice energy detected by switch.
0x28e	Channel/tone does not exist (no tone connected to the special call).
0x28f	Answering machine detected.

0x290	Facility rejected.
0x2bc	Invalid login request.
0x2bd	Invalid logout request.
0x2be	Invalid ready request.
0x2bf	Invalid not ready request.
0x2c0	Invalid make call request.
0x2c1	Invalid route call request.
0x2c2	Invalid mute transfer request.
0x2c3	Invalid initiate conference request.
0x2c4	Invalid initiate transfer request.
0x2c5	Invalid complete conference request.
0x2c6	Invalid complete transfer request.
0x2c7	Invalid retrieve original request.
0x2c8	Invalid control DN.
0x2c9	Cannot convert to position ID.
0x2ca	Invalid Call ID.
0x2cb	Operation not allowed.
0x2cc	Not idle.
0x2cd	Agent not logged in.
0x2ce	Origination timed out.
0x2cf	MakeCall resources unavailable.
0x2d0	Missing origination address.
0x2d1	Missing destination address.
0x2d2	Missing MakeCall type.
0x2d3	Invalid origination address.
0x2d4	Invalid destination address.
0x2d5	Invalid MakeCall type.
0x2d6	Invalid AuthCode.
0x2d7	Invalid AcctCode.
0x2d8	TERR_DMS_AUTH_OP_NSUBSCR.
0x2d9	TERR_DMS_ACCT_OP_NSUBSCR.
0x2da	MakeCall aborted.

0x2db	MakeCall mismatch state.
0x2dc	Unexpected AcctCode.
0x2dd	Operation not specified.
0x2de	Invalid AssociatedDN.
0x2df	AssociatedDN already associated with another session.
0x2e0	Maximum number of DN has been reached.
0x2e1	TERR_DMS_NO_RESOURCES.
0x2e2	TERR_DMS_MISSING_ASSOC_DN.
0x2e4	AssociatedDN already in set.
0x2e5	AssociatedDN not in set.
0x2e6	Invalid DN.
0x2e7	Unknown DN.
0x2e8	Invalid filter.
0x2e9	Missing parameter.
0x2ea	Invalid parameter.
0x2eb	Invalid parameter content.
0x2ec	Invalid line configuration.
0x2ed	Agent already logged in.
0x2ee	Login ID in use elsewhere.
0x2ef	Position already logged in.
0x2f0	Invalid set state.
0x2f1	Password mismatch.
0x2f2	Resource unavailable.
0x2f3	Agent not logged in.
0x2f4	Agent logout pending.
0x2f5	Invalid agent position state.
0x2f6	Agent presently ready.
0x2f7	Agent presently not ready.
0x2f8	Supervisor override.
0x320	Invalid Line ID.
0x321	Invalid Trunk ID.
0x322	Invalid Digits String.

0x323 Invalid OAI value.

0x324 Invalid message type.

0x325 Invalid message attribute.

0x326 ARC origination not available.

0x327 ARC not origination call.

0x328 Original COS denies ARC calls.

0x329 Invalid terminal type.

0x32a Feature is not available.

0x32b Potential Database Error.

0x32c All IXL Trunks Busy.

0x32d Route Period Expired.

0x32e Invalid Destination ID.

0x32f Invalid Port ID.

0x330 Condition Or State Are Not Proper For Feature Operation.

0x331 Invalid ACD Agent Password.

0x332 Invalid Agent's ID.

0x333 Invalid Call ID.

0x334 Invalid Timer Value.

0x335 Lack Of System Resource.

0x336 No Idle Call Origination Facility.

0x337 Bad destination digits.

0x338 Invalid state.

0x339 Bad address type.

0x33a Bad address info type.

0x352 Internal error.

0x38e Negative acknowledgement.

0x38f Invalid equipment.

0x390 Invalid teleset state.

0x391 Invalid CCT.

0x392 Invalid outbound dialing pattern.

0x393 Invalid mode.

0x394 Invalid origination.

0x395	Invalid route.
0x3ca	Invalid reason code.
0x3e8	Bad or missing server location name.
0x3e9	Remote server is disconnected.
0x3ea	Remote server has not processed request.
0x3eb	Wrong extrouting protocol version.
0x3ec	Remote link is disconnected.
0x3ed	Extrouter feature is not initiated.
0x3ee	No more available route points on the remote switch.
0x3ef	No access phone number found.
0x3f0	TCS feature is not initiated.
0x3f1	Bad xroute type is specified.
0x3f2	Invalid condition for the xrequest.
0x3f3	No one primary server was found on location.
0x3f4	Location is bad or missing.
0x3f5	Requested transaction time is expired.
0x3f6	No configured access resources are found.
0x3f7	No registered access resources are found.
0x3f8	Client is not authorized.
0x3f9	Bad transaction type is specified.
0x3fa	Bad or missing transaction specific data.
0x3fb	Bad location query request specified.
0x3fc	Bad origin location is specified.
0x44c	Unrecognized APDU.
0x44d	Mistyped APDU.
0x44e	Badly structured APDU.
0x456	Duplicate invocation.
0x457	Unrecognized operation.
0x458	Mistyped argument.
0x459	Resource limitation.
0x45a	Initiator releasing.
0x45b	Unrecognized linked ID.

0x45c	Linked response unexpected.
0x45d	Unexpected child operation.
0x460	Unrecognized invocation.
0x461	Result response unexpected.
0x462	Misspelled result.
0x46a	Unrecognized invocation.
0x46b	Error response unexpected.
0x46c	Unrecognized error.
0x46d	Unexpected error.
0x46e	Mistyped parameter.
0x474	Generic operation error.
0x475	Request incompatible with object.
0x476	Value out of range.
0x477	Object not known.
0x478	Invalid calling device.
0x479	Invalid called device.
0x47a	Invalid forwarding device.
0x47b	Privilege violation on specified device.
0x47c	Privilege violation on called device.
0x47d	Privilege violation on calling device.
0x47e	Invalid call identifier.
0x47f	Invalid device identifier.
0x480	Invalid connection identifier.
0x481	Invalid destination.
0x482	Invalid feature.
0x483	Invalid allocation state.
0x484	Invalid cross-reference ID.
0x485	Invalid object type.
0x486	Security violation.
0x488	Generic state incompatibility error.
0x489	Incorrect object state.
0x48a	Invalid connection ID.

0x48b	No active call.
0x48c	No held call.
0x48d	No call to clear.
0x48e	No connection to clear.
0x48f	No call to answer.
0x490	No call to complete.
0x492	Generic system resource availability error.
0x493	Service busy.
0x494	Resource busy.
0x495	Resource out of service.
0x496	Network busy.
0x497	Network out of service.
0x498	Overall monitor limit exceeded.
0x499	Conference member limit exceeded.
0x49c	Generic subscribe resource availability error.
0x49d	Object monitor limit exceeded.
0x49e	External trunk limit exceeded.
0x49f	Outstanding request limit exceeded.
0x4a1	Generic performance management error.
0x4a2	Performance limit exceeded.
0x4af	Unspecified CSTA error.
0x4b0	Call has arrived from RDG without callid. PM requires callid.
0x4b1	No PM available.
0x4b2	Park request failed (no details).
0x4b3	Park request failed (invalid data).
0x4b4	Park request failed (unexpected input).
0x4b5	Park request failed (missing parameter).
0x4b6	Parking request: format OK, but request rejected (no details).
0x4b7	Parking request rejected (corp resources overused).
0x4b8	Parking request rejected (8xx resources overused).
0x4b9	Parking request rejected (PP res overused).
0x4ba	Unpark request badly formatted (no details).

0x4bb	Unpark request badly formatted (invalid destlabel).
0x4bc	Unpark request badly formatted (unexpected input).
0x4bd	Unpark request badly formatted (parameter missing).
0x4be	Unpark request badly formatted: format OK, but request rejected (no details).
0x4bf	Unpark request rejected (destination busy).
0x4c0	Unpark request rejected (destination: no answer).
0x4c1	Customer extension failed.
0x4c2	VM extension failed.
0x4c3	Call was never parked.
0x4c4	Call in incompatible state (general).
0x4c5	Call in incompatible state for Route (general).
0x4c6	Route: no call.
0x4c7	Route already in progress.
0x4c8	Route already in progress for Park (general).
0x4c9	Park: no call.
0x4ca	Already parked.
0x4cb	Unparking in progress.
0x4cc	Park: internal error.
0x515	Error String undefined, contact Genesys.
0x516	Gate ID invalid.
0x517	Undocumented.
0x518	Gate queue limit is reached.
0x519	Off-net number could not be dialed at this time.
0x51a	Off-net number invalid.
0x51b	Class-of-service assigned to answer detectors too low.
0x51c	All trunks busy encountered.
0x51d	Call terminated due to switchover.
0x51e	Trunk was released.
0x51f	Call terminated during routing.
0x520	Busy tone detected.
0x521	Reorder tone detected.
0x522	Ring timeout has occurred.

0x523	Telco recording encountered.
0x524	Answer detector inoperable.
0x525	No answer detectors available.
0x526	No bin.
0x527	No NULL Terminator at end of digits.
0x528	Answering Machine Detected.
0x529	Success.
0x52a	Error String undefined, contact Genesys.
0x52b	Error String undefined, contact Genesys.
0x52c	Position ID is invalid.
0x52d	Position is not in a valid condition to initiate dial request.
0x52e	Agent not signed in.
0x52f	Off-net number could not be dialed at this time.
0x530	Off-net number is not valid.
0x531	Position class-of-service is not valid.
0x532	All trunks busy encountered.
0x533	Switchover in process.
0x534	Dial key is not available.
0x535	Call terminated during routing.
0x536	Invalid call sequence number was encountered.
0x537	Unable to complete outdial call.
0x538	Position has more than one call.
0x539	No bin.
0x53a	No NULL Terminator at end of digits.
0x53b	Undocumented.
0x53c	Error String undefined, contact Genesys.
0x53d	Error String undefined, contact Genesys.
0x53e	An All Trunks Busy condition was encountered.
0x53f	The off-net number is invalid.
0x540	The off-net number could not be dialed at this time.
0x541	Invalid call sequence number.
0x542	Subscriber released from an inbound trunk associated with the call sequence number.

0x543 The facility code is invalid.

0x544 Trunk or switch module aborted during routing.

0x545 Trunk is not in a valid state to initiate a dial request.

0x546 Undocumended.

0x547 Error String undefined, contact Genesys.

0x548 Error String undefined, contact Genesys.

0x549 Position ID is invalid.

0x54a Position is not currently on a call.

0x54b Position has a call on hold.

0x54c Undocumented.

0x54d Error String undefined, contact Genesys.

0x54e Error String undefined, contact Genesys.

0x54f Position ID is invalid.

0x550 Position is not in a valid condition to allow the agent to sign in.

0x551 Invalid Sign-In Number.

0x552 Position Sign-In Number is already active at another console.

0x553 Position is out-of-service.

0x554 Position is set busy.

0x555 Position is vacant; headset is not plugged into the console.

0x556 Switchover in process.

0x557 Position information group is invalid.

0x558 Position supervisor ID is invalid.

0x559 Gate number is invalid.

0x55a No bin.

0x55b Undocumented.

0x55c Error String undefined, contact Genesys.

0x55d Error String undefined, contact Genesys.

0x55e Position ID is invalid.

0x55f Console is not in a valid condition to allow agent to sign out.

0x560 Undocumented.

0x561 Error String undefined, contact Genesys.

0x562 Error String undefined, contact Genesys.

0x563	Position ID is invalid.
0x564	Agent in dialing state.
0x565	Agent not signed in.
0x566	Supervisor priority or camp on.
0x567	Agent position out-of-service.
0x568	Agent position set busy.
0x569	Agent position is vacant.
0x56a	Switchover in process.
0x56b	Undocumented.
0x56c	Error String undefined, contact Genesys.
0x56d	Error String undefined, contact Genesys.
0x56e	Position ID is invalid.
0x56f	Undocumented.
0x570	Error String undefined, contact Genesys.
0x571	Error String undefined, contact Genesys.
0x572	Error String undefined, contact Genesys.
0x573	Error String undefined, contact Genesys.
0x574	Error String undefined, contact Genesys.
0x575	Error String undefined, contact Genesys.
0x576	Error String undefined, contact Genesys.
0x577	Undocumended.
0x578	Bad MF Sender equipment.
0x579	TNDB Event occurred in an invalid state.
0x57a	Agent terminating dialing.
0x57b	No available storage.
0x57c	No NULL Terminator at end of digits.
0x57d	Error String undefined, contact Genesys.
0x57e	Error String undefined, contact Genesys.
0x57f	General system error.
0x580	Invalid agent.
0x6a4	This agent is already reserved by some other server.
0x709	Timeout.

0x70a	IP Timeout.
0x70b	Failure.
0x70c	Channels busy.
0x70d	Resource not available.
0x70e	Treatment canceled.
0x70f	Treatment abandoned.
0x710	Abort.

Codes for CSVAPI, CSTAPI, and CSRSM (0x00)

0x0	Link to VVP-ETHER up.
0x1	Link to CTI server up.
0x2	Request failed, no Call ID.
0x3	Request failed, no other Call ID.
0x4	Conversion to AV-format failed.
0x5	VVP_ETHER socket error.
0x6	Data may be truncated.
0x7	CTI condition generated.
0x8	Get CTI resource failure.
0x9	Invalid phone line.
0xa	Invalid VVP-ETHER message type.
0xb	Unable to enqueue message.
0xc	Unable to dequeue message.
0xd	Unable to create VVP-ETHER msg.
0xe	Unable to create condition.
0xf	Phone line is not in service.
0x10	Unable to allocate memory.
0x11	Phone line is down.
0x12	Client init failed.
0x13	Null VPS array.

0x14	Unable to set event list.
0x15	Unable to set device list.
0x16	Calldata failure.
0x17	TLINK data failure.
0x18	Attribute record failure.
0x19	Unable to set timer.
0x1a	Link to VVP-ETHER down.
0x1b	Link to CTI server down.
0x1c	TimerID of 1 passed-in to function.
0x1d	No, this device supplied in structure.
0x1e	Unable to add to device list.
0x1f	VMS socket must be less than 2.
0x20	Current VPS pointer is null.
0x21	VMS connection has failed.
0x22	Client setrequest failed.
0x23	This device setrequest failed.
0x24	Device list setrequest failed.
0x25	Could not set request for supplied client.
0x26	Phone line not found from the supplied client.
0x27	Unable to create client for phone line.
0x28	Supplied VPS not found on list.
0x29	Global host cannot be null.
0x2a	Service callback has been set by caller.
0x2b	Unable to user setrequest for putting calldata in structure.
0x2c	Unable to build a request from the modifyuserdata.
0x2d	Unable to build a request from the adduserdata.
0x2e	Unable to get tlinkdata from supplied list of information from getparam.
0x2f	No phone line defined for the client making the request.
0x30	Request could not set.
0x31	Wait list could not be set in request list.
0x32	Event list could not be set in request list.
0x33	Fail list could not be set in request list.

0x34	Invalid client ID passed by caller.
0x35	Setrequest failed in directory number for this device.
0x36	Invalid VMS number has been passed.
0x37	Maximum phones have been exceeded.
0x38	Failed in registering device.
0x39	Unexpected tmask encountered
0x3a	Data truncated.
0x3b	Unknown call type.
0x3c	Other trunk is null.
0x3d	This trunk is null.
0x3e	This queue is null.
0x3f	This device is null.
0x40	Digits are null.
0x41	Error is null.
0x42	Password is null.
0x43	Loginid is null.
0x44	Agentid is null.
0x45	Dnis is null.
0x46	ANI is null.
0x47	Datasearch has failed.
0x48	Failed to set correct structure pointer.
0x49	Invalid timer identifier.
0x4a	Timeout on condition.
0x4b	Ping failed to remote system.
0x4c	Ping create failed.
0x4d	No contactid supplied.
0x4e	Agent state has failed.
0x4f	Unsubscribe mcb fail.
0x50	Unsubscribe parameter error.
0x51	Unsubscribe unknown error.
0x52	Attach calldata no longer published.
0x53	CTI no longer published.

0x54	Attached calldata published.
0x55	CTI published.
0x56	Bad status from querying the subscription service.
0x57	Message is not handled.
0x58	Client not found.
0x59	Failed to get correct structure pointer.
0x5a	Ctifunction is unsuccessful in setting the value.
0x5b	Ctifunction is unsupported.
0x5c	Valid options are env or res.
0x5d	Calldata count is invalid.
0x5e	Stop or start has not been supplied system not started.
0x5f	Null pointer passed as an option.
0x60	True or false are the only valid options.
0x61	Option has been called out of sequence.
0x62	Function not found.
0x63	Invalid option passed.
0x64	Valid options are on or off.
0x65	Could not change default response for cshealth check.
0x66	Could not change default response for tlhealth check.
0x67	Could not change default response for register.
0x68	Could not change default response for unregister.
0x69	Could not change default response for setwaitevent.
0x6a	Could not change default response for clearwaitevent.
0x6b	Could not change default response for setfailevent.
0x6c	Could not change default response for waitappevent.
0x6d	Could not change default response for attachappevent.
0x6e	Could not change default response for removeappevent.
0x6f	Could not change default response for sendrequest.
0x70	Could not change default response for getdeviceparam.
0x71	Could not change default response for setdeviceparam.
0x72	Could not change default response for addcalldata.
0x73	Could not change default response for addattribdata.

0x74	Could not change default response for removecalldata.
0x75	Could not change default response for updatecalldata.
0x76	Could not change default response for setignoreevent.
0x77	Could not change default response for makecall.
0x78	Could not change default response for holdcall.
0x79	Could not change default response for retreivecall.
0x7a	Could not change default response for reconnectcall.
0x7b	Could not change default response for alternatecall.
0x7c	Could not change default response for predictcall.
0x7d	Could not change default response for answercall.
0x7e	Could not change default response for clearcall.
0x7f	Could not change default response for conferencecall.
0x80	Could not change default response for consultationcall.
0x81	Could not change default response for transfercall.
0x82	Could not change default response for setagentstate.
0x83	Could not change default response for setforwarding.
0x84	Could not change default response for blindtransfer.
0x85	Send event by queue option can only be yes or no.
0x86	Sendresponse valid options are yes, no, and default.
0x87	Sendresponse no client ID has been supplied.
0x88	Agentqueue tlinkdata key was not found.
0x89	Requesttimer could not be set.
0x8a	Setcticondevent failed to be added to list.
0x8b	Retrievevalue unsupported option supplied.
0x8c	Modifyuserdata unknown option encountered.
0x8d	Valid options are yes or no.
0x8e	Setrequest calldata is unable to determine the parameter passed on the option.
0x8f	Not allowed to use option from vsh.
0x90	Running error is unable to determine the parameter passed on the option.

Codes for CSAD (0x16)

0x0	combine_on_consult: NULL value passed.
0x1	Value passed is a null event passed.
0x2	Value null passed.
0x3	No service provider callback function exists.
0x4	Unable to create DN table.
0x5	Unable to create Call ID table.
0x6	Could not create registerall structures.
0x7	Data attachment service stopped.
0x8	Data attachment service started.
0x9	No calldata will be sent.
0xa	Unable to add DN to list.
0xb	Unable to append calldata.
0xc	Unable to update calldata.
0xd	Unable to add attribute calldata.
0xe	Unable to remove calldata.
0xf	Invalid calldata handle.
0x10	Unable to add DN to table.
0x11	Invalid Call ID.
0x12	Unable to ad DN to Call ID table.
0x13	Unable to add calldata.
0x14	Call ID is zero.
0x15	Call ID table is null.
0x16	Timer ID is not set.
0x17	Only stop or start are valid options.
0x18	Null argument passed on vararg call.
0x19	Only valid display options are config | showDNTable | showCallIDTable | stats.
0x1a	Only valid DA options are startCallidTimer | stopCallidTimer | reset.
0x1b	Only valid handlebroadcast options are [TRUE|FALSE].

Codes for CSHDX

Table 75: Code Set 0x00

0x1	Service request to a provider. (Service completion request).
0x2	Service request to a provider. (No response required.)
0x3	Response from a service provider.
0x4	Simple status response.
0x5	Event sent from provider to server to register provider.
0x6	Event sent from provider DLL to server to notify of error.
0x7	Event sent to query the status of server/providers.
0x8	Invalid message value.
0x9	Server shutdown to provider.

Table 76: Code Set 0x01

0x9	Undefined error.
0xa	Request was successful.
0xb	No event to retrieve.
0xc	Timeout occurred.
0xd	Initialization of the C-API DLL fails. Requests cannot be sent.
0xe	Initialization of the Server communication fails.
0xf	Indicates data is available in a request/complete message.
0x10	Indicates DLL is being initialized from software built with different libraries.
0x11	Indicates the handle passed as an argument is not valid.
0x12	Indicates the parameter passed as an argument is not valid.
0x13	Response from query status _T(Alive).
0x14	Indicates a provider is already registered with the DLL.
0x15	Indicates no provider exists to de-register.
0x16	Provider ID used is invalid (such as 0xffffffff or out of range 1 to 1999999999).
0x17	Indicates a provider has successfully been registered.
0x18	Indicates a provider has successfully been de-registered.

0x19	Indicates a provider is already registered using the ID passed to.
0x1a	Indicates an attempt to de-register with an invalid ID.
0x1b	Indicates a general failure to register.
0x1c	Failure in rogue wave operations.
0x1d	Indicates the data size exceeds the limit of maximum 80 characters.
0x1e	Failure to send messages to the server.

Table 77: Code Set 0x02

0x0	Blocking.
0x1	Non-blocking.

Table 78: Code Set 0x03

0x0	Unknown status information passed by DX.
0x1	Disconnecting from HDX server.
0x2	Connecting with HDX server.
0x3	Success registering with provider.
0x4	Register provider failed.
0x5	Register provider init failed.
0x6	License check failed, not connecting to server.
0x7	License granted from server.
0x8	Server registration success.
0x9	System initialized.
0xa	HDX message encode failed no response is sent.
0xb	System started through start command.
0xc	System stopped through stop command.
0xd	System not started invalid argument.
0xe	WARNING: no license compiled in software.
0xf	Stop and start are the only valid options, system not started.
0x10	Display options are invalid.

Codes for CSRSMLS (0x14)

0x0	Request handler failed.
0x1	License failed for specified device.
0x2	License success for specified device.
0x3	Wrong device type.
0x4	Please make sure that CS host machine is in the same subnet as CCMS.
0x5	Unlicensed protected system.
0x6	Data from RSM too old.
0x7	Device not yet registered.
0x8	No device supplied.
0x9	Unexpected param encountered.
0xa	WSA socket failure.
0xb	Unable to open socket.
0xc	setsockopt SO_REUSEADDR failed.
0xd	Error bind socket.
0xe	gethostname failed.
0xf	gethostbyname failed.
0x10	setsockopt failed for add membership.
0x11	No tcpip binding adapters found.
0x12	Could not get file descriptor.
0x13	Reading socket error.
0x14	Could not find file descriptor in data ready table.
0x15	Invalid ID packet received.
0x16	Invalid number of supported statistic records.
0x17	Unknown message type.
0x18	Cannot get name from ID in table lookup.
0x19	Client ID not specified.
0x1a	System being started.
0x1b	System being stopped.

0x1c	Error adding to table. csrsmls_statid.
0x1d	Host name not specified.
0x1e	Error plc_PollAppInFD socket connection not established.
0x1f	Lost connection to socket.
0x20	Connection to server established.
0x21	Null object passed to service handler.
0x22	Binding error to Corba interface.
0x23	Skillset name failed.
0x24	Application name failed.
0x25	Get agent name to ID failed.
0x26	Corba init failed.
0x27	Start and stop are the only valid option system not started.
0x28	Only valid options are <licenseinfo|stat>.
0x29	Option passed via vararg is null.

Codes for CSTAPILS (0x00)

0x0	Resource temporarily unavailable.
0x1	Operation now in progress.
0x2	Operation already in progress.
0x3	Socket operation on non-socket.
0x4	Destination address required.
0x5	Message too long.
0x6	Protocol wrong type for socket.
0x7	Bad protocol option.
0x8	Protocol not supported.
0x9	Socket type not supported.
0xa	Operation not supported.
0xb	Protocol family not supported.
0xc	Address family not supported by protocol family.

0xd	Address already in use.
0xe	Cannot assign requested address.
0xf	Network is down.
0x10	Network is unreachable.
0x11	Network dropped connection on reset.
0x12	Software caused connection abort.
0x13	Connection reset by peer.
0x14	No buffer space available.
0x15	Socket is already connected.
0x16	Socket is not connected.
0x17	Cannot send after socket shutdown.
0x18	WSAETOOMANYREFS
0x19	Connection timed out.
0x1a	Connection refused.
0x1b	WSAELOOP
0x1c	WSAENAMETOOLONG
0x1d	Host is down.
0x1e	No route to host.
0x1f	WSAENOTEMPTY
0x20	Too many processes.
0x21	WSAEUSERS
0x22	WSAEDQUOT
0x23	WSAESTALE
0x24	WSAEREMOTE
0x25	Calldata handle not valid from passed event, no call data will be sent.
0x26	Successfully registered with target server.
0x27	Problem decoding message header response.
0x28	Problem in receiving response.
0x29	Problem locating cause IE in processing status message.
0x6b	Unknown cause value in status message.
0x2b	Message length is incorrect.
0x2c	Mandatory IE is missing in message type.

0x2d	IVR name is already registered.
0x2e	No associations available try later.
0x2f	IVR not registered, no messages may be sent.
0x30	This DN/port is already registered.
0x31	Registration of this DN/port failed.
0x32	The DN/port has a bad format.
0x33	The DN/port is not registered.
0x34	Data transfer task not responding to the IVR driver.
0x35	Failed while creating list of DNs to monitor.
0x36	No DNs exist in the list to be registered.
0x37	Problem encoding user data message, no calldata is sent.
0x38	Problem in creating IVR disconnect message.
0x39	Problem enqueueing user message.
0x3a	Problem enqueueing caller data message.
0x3b	Unable to allocate linked list structure.
0x3c	Unable to generate time value in call tracking queue.
0x3d	Problem in enqueuing IVR disconnect message.
0x3e	Unable to generate time value in processing response.
0x3f	Could not locate queue in order to find the corresponding message.
0x40	Lost connection with target server.
0x41	Disconnected by target server.
0x42	Disconnected with target server.
0x43	Problem in sending registration message.
0x44	Problem in sending calldata, no calldata sent.
0x45	Problem sending IVR disconnect message.
0x46	Problem in closing socket after host disconnect.
0x47	No licensed client available, no call data will be sent.
0x48	Problem in creating IVR registration message.
0x49	Unable find requested message, message may have timed out.
0x4a	Polling message not being responded to by server, identifying condition as connection lost.
0x4b	Failed while initializing the control block.
0x4c	Failed while initializing far end of connection.

0x4d	Socket error occurred on read.
0x4e	getmem failed from initccb.
0x4f	setfarrendnccb: unknown host.
0x50	setfarrendnccb: unknown IP address.
0x51	setfarrendnccb: nncb was null.
0x52	No port number specified.
0x53	Error opening stream socket.
0x54	Bind address reuse error.
0x55	return_sock_err(h_errno).
0x56	connectsock: opensock call failed.
0x57	connectsock: connecting stream socket failed.
0x58	Establishing connection failed error.
0x59	passivesock: opensock call failed.
0x5a	tatsock: socket is bad.
0x5c	readsock: timeout on read.
0x5d	readnsock: failed timeout during read.
0x5e	readnsock: failed.
0x5f	The socket or buffer is invalid.
0x60	Msg too big to buffer.
0x61	UDP message did not contain an mlink msg.
0x62	Destination not defined.
0x63	Send msg larger than expected.
0x64	Send udp packet failed.
0x65	Writing data to the tcp socket failed.
0x66	Precondition problem, maybe the buff is nil or work size.
0x67	Acceptconnectsocket: accept error.
0x68	Acceptconnsocket: initNCCB.
0x69	Select socket error.
0x6a	Unsupported message type.
0x6b	Unknown cause type found in message.
0x6c	Calldata not accepted by TAPI server.
0x6d	Configuration table is empty.

0x6e	Unable to open socket for TAPI calldata communication.
0x6f	Cannot poll the socket to talk to the server.
0x70	Cannot register with targeted server.
0x71	No calldata pairs detected, cannot send.
0x72	Value from vararg passed is null, system not started.
0x73	Option must be stop or start to initialize system.
0x74	Valid values for option is true or false.
0x75	No external host is defined.
0x76	Problem initializing communication control block.
0x77	Invalid option for display mechanism.
0x78	Invalid test calldata option.

Codes for IPMLSP (0x00)

0x0	Link to NNCCT up.
0x1	Link to CTI server up.
0x2	Request failed. no callid.
0x3	Request failed. no other callid.
0x4	Conversion to XML-format failed.
0x5	Data may be truncated.
0x6	Invalid address.
0x7	Invalid NNCCT request type.
0x8	Unable to send response to NNCCT.
0x9	Address is not in provider.
0xa	Unable to allocate memory.
0xb	Null provider.
0xc	Unable to set device list.
0xd	Calldata failure.
0xe	Tlink data failure.
0xf	Attribute record failure.

0x10	Unable to set timer.
0x11	Link to NNCCT Server down.
0x12	Link to CTI server down.
0x13	TimerID of -1 passed-in to function.
0x14	No thisdevice supplied in structure.
0x15	Unable to add to device list.
0x16	Thisdevice setrequest failed.
0x17	Devicelist setrequest failed.
0x18	Supplied contact not found on list.
0x19	Unable to user setrequest for putting calldata in structure.
0x1a	Unable to build a request from the modifyuserdata.
0x1b	Unable to build a request from the adduserdata.
0x1c	Unable to get tlinkdata from supplied list of information from getparam.
0x1d	No address be defined for the client making the request.
0x1e	Request could not set.
0x1f	Failed in registering device.
0x20	Data truncated.
0x21	Unknown call type.
0x22	Other trunk is null.
0x23	This trunk is null.
0x24	This device is null.
0x25	Other device is null.
0x26	Digits are null.
0x27	Error is null.
0x28	Password is null.
0x29	Loginid is null.
0x2a	Agentid is null.
0x2b	Dnis is null.
0x2c	ANI is null.
0x2d	Datasearch has failed.
0x2e	Failed to set correct structure pointer.
0x2f	Invalid timer identifier.

0x30	Ping failed to remote system.
0x31	Ping create failed.
0x32	No contactid supplied.
0x33	Agent state has failed.
0x34	Unsubscribe mcb fail.
0x35	Unsubscribe parameter error.
0x36	Unsubscribe unknown error.
0x37	CTI no longer published.
0x38	CTI published.
0x39	Bad status from querying the subscription service.
0x3a	Message is not handled.
0x3b	Failed to get correct structure pointer.
0x3c	Failed to add attach data.
0x3d	Failed to remove attach data.
0x3e	Failed to update attach data.
0x3f	Failed to get attach data.
0x40	See tls alarm to get details.
0x41	Ctifunction is unsuccessful in setting the value.
0x42	Ctifunction is unsupported.
0x43	Calldata count is invalid.
0x44	Stop or start has not been supplied system not started.
0x45	Null pointer passed.
0x46	True or false are the only valid options.
0x47	Option has been called out of sequence.
0x48	Function not found.
0x49	Invalid option passed.
0x4a	Valid option are on or off.
0x4b	Retrievevalue unsupported option supplied.
0x4c	Modifyuserdata unknown option encountered.
0x4d	Valid option is yes or no.
0x4e	Setrequest calldata is unable to determine the parameter passed on the option.
0x4f	Not allowed to use option from vsh.

0x50	Running error.
0x51	SetJavaSecurity failed to allow RMI.
0x52	SPPeerFactory failed to get Peer.
0x53	Failed to get process configuration - ipmlsp.config.
0x54	Failed to get provider name.
0x55	Peer failed to get provider.
0x56	Failed to connect to NNCCTDALS.
0x57	Failed to create contact object in provider.
0x58	Failed to create connection.
0x59	Failed to create terminal connection.
0x5a	Failed to set connection state.
0x5b	Failed to set terminal connection state.
0x5c	Failed to set reference between contacts.
0x5d	Failed to set calling address.
0x5e	Failed to set called address.
0x5f	Failed to add agent to agent terminal.
0x60	Failed to remove agent from agent terminal.
0x61	Failed to update agent's state.
0x62	Failed to get agent's state to set.
0x63	Failed to get attached data.
0x64	Failed to set attached data.
0x65	Failed to set capabilities to provider.
0x66	Failed to add address to provider.
0x67	Failed to add terminal to provider.
0x68	Failed to add address association relationship w. terminal in provider.
0x69	Failed to remove address to provider.
0x6a	Failed to remove terminal to provider.
0x6b	Failed to access NNCCTDALS.
0x6c	Failed to get UUI data.
0x6d	Failed to set UUI data to contact object.
0x6e	No terminal associated with address.
0x6f	Terminal is not in provider.

Alarm Logging Examples

Example alarm.css.1.log File

```
>>> Log created on Tue Aug 06 12:50:26 2002
Tue Aug 06 12:50:26 <csad> 90004 Severity 7 Comp #css.1/
css20nt csad, Significant, 51 process is down
```

At the start of the alarm.css.1.log file, all configured CCTIVR processes indicate a condition of being down.

```
Tue Aug 06 12:50:26 <tls> 90074 Severity 7 Comp #css.1/
css20nt tls, Significant, 51 process is down
Tue Aug 06 12:50:26 <csvapi> 90064 Severity 7 Comp #css.1/
css20nt csvapi, Significant, 51 process is down
Tue Aug 06 12:50:26 <csrsmls> 90124 Severity 7 Comp #css.1/
css20nt csrsmls, Significant, 51 process is down
Tue Aug 06 12:50:27 <csrsm> 90044 Severity 7 Comp #css.1/
css20nt csrsm, Significant, 51 process is down
Tue Aug 06 12:50:27 <cstapils> 90114 Severity 7 Comp #css.1/
css20nt cstapils, Significant, 51 process is down
Tue Aug 06 12:50:27 <cstapi> 90054 Severity 7 Comp #css.1/
css20nt cstapi, Significant, 51 process is down
Tue Aug 06 12:50:27 <cshdxls> 90134 Severity 7 Comp #css.1/
css20nt cshdxls, Significant, 51 process is down
Tue Aug 06 12:50:27 <cshdxls> 90134 Severity 7 Comp #css.1/
css20nt cshdxls, Significant, 58 license granted
Tue Aug 06 12:50:28 <csvapi> 90064 Severity 7 Comp #css.1/
css20nt csvapi, Significant, 51 process is down
Tue Aug 06 12:50:28 <tls> 90074 Severity 7 Comp #css.1/
css20nt tls, Significant, 51 process is down
Wed Aug 07 10:11:03 <tls> 90074 Severity 7 Comp #css.1/
css20nt tls, Significant, 56 link up
```

Later in the log, each process should indicate that the link is up or that the process is active. License acceptance or denial is also indicated in this file.

```
Wed Aug 07 10:11:03 <csad> 90004 Severity 7 Comp #css.1/
css20nt csad, Significant, 50 process is active
Wed Aug 07 10:11:03 <cshdxls> 90134 Severity 7 Comp #css.1/
css20nt cshdxls, Significant, 50 process is active
Wed Aug 07 10:11:03 <cshdxls> 90134 Severity 7 Comp #css.1/
css20nt cshdxls, Significant, 58 license granted, 3:7
license granted from server
Wed Aug 07 10:11:03 <cstapils> 90114 Severity 7 Comp #css.1/
css20nt cstapils, Significant, 56 link up, 0:26
Successfully registered with target server
Wed Aug 07 10:11:04 <cstapils> 90114 Severity 7 Comp #css.1/
css20nt cstapils, Significant, 50 process is active
Wed Aug 07 10:11:05 <cstapi> 90054 Severity 7 Comp #css.1/
css20nt cstapi, Significant, 51 process is down
Wed Aug 07 10:11:05 <cstapi> 90054 Severity 7 Comp #css.1/
css20nt cstapi, Significant, 48 service started
Wed Aug 07 10:11:05 <csvapi> 90064 Severity 7 Comp #css.1/
css20nt csvapi, Significant, 50 process is active
Wed Aug 07 10:11:05 <csvapi> 90064 Severity 7 Comp #css.1/
css20nt csvapi, Significant, 56 link up, 0:1 link to cti
server up
Wed Aug 07 10:11:05 <csvapi> 90064 Severity 7 Comp #css.1/
css20nt csvapi, Significant, 56 link up, 0:0 link to vvp-
```

Example alarm.css.1.log File

```
ether up
Wed Aug 07 10:11:09 <cshdxls> 90132 Severity 2 Comp #css.1/
css20nt cshdxls, Functional Error, 33 queue group status
failed, 3:3 Success registering with provider
Wed Aug 07 10:11:09 <cshdxls> 90134 Severity 7 Comp #css.1/
css20nt cshdxls, Significant, 56 link up, 3:8 server
registration success
Wed Aug 07 10:11:12 <cstapi> 90054 Severity 7 Comp #css.1/
css20nt cstapi, Significant, 50 process is active
Wed Aug 07 10:11:12 <cstapi> 90054 Severity 7 Comp #css.1/
css20nt cstapi, Significant, 56 link up, 0:1 link to cti
server up
Wed Aug 07 10:11:14 <cstapi> 90054 Severity 7 Comp #css.1/
css20nt cstapi, Significant, 56 link up, 0:0 link to vvp-
ether up
Wed Aug 07 10:11:15 <csrsmls> 90124 Severity 7 Comp #css.1/
css20nt csrsmls, Significant, 55 link down, 0:1F lost
connection to socket
Wed Aug 07 10:11:15 <csrsmls> 90124 Severity 7 Comp #css.1/
css20nt csrsmls, Significant, 56 link up, 0:20 connection
to server established
Wed Aug 07 10:11:15 <csrsmls> 90124 Severity 7 Comp #css.1/
css20nt csrsmls, Significant, 50 process is active
Wed Aug 07 10:11:16 <csrsmls> 90124 Severity 7 Comp #css.1/
css20nt csrsmls, Significant, 58 license granted, 0:5
UNLICENSED PROTECTED SYSTEM
Wed Aug 07 10:11:16 <csrsmls> 90124 Severity 7 Comp #css.1/
css20nt csrsmls, Significant, 58 license granted, 0:5
UNLICENSED PROTECTED SYSTEM
Wed Aug 07 10:11:16 <csrsmls> 90124 Severity 7 Comp #css.1/
css20nt csrsmls, Significant, 58 license granted, 0:5
UNLICENSED PROTECTED SYSTEM
Wed Aug 07 10:11:16 <csrsm> 90044 Severity 7 Comp #css.1/
css20nt csrsm, Significant, 50 process is active
Wed Aug 07 10:11:16 <srp> 00001 Severity 1 Comp #css.1/
css20nt srp: COMPONENT #css.1/css20nt UP
Wed Aug 07 10:11:16 <srp> 12012 Severity 1 Comp #css.1/
css20nt srp: System is up
Wed Aug 07 10:11:16 <csrsm> 90044 Severity 7 Comp #css.1/
css20nt csrsm, Significant, 56 link up, 0:1 link to cti
server up
Wed Aug 07 10:11:16 <csrsm> 90044 Severity 7 Comp #css.1/
css20nt csrsm, Significant, 56 link up, 0:0 link to vvp-
ether up
```

SNMP and Alarms

The SNMP (Simple Network Management Protocol) allows remote agents to detect alarms through a network. The PeriSNMP package provides an SNMP link to the alarm log file (alarm.css.1.log). All information seen in the alarm log is transmitted to the SNMP process.

Testing the installation on the remote client can be performed under using the Windows 2000 snmputil.exe program. This utility allows data to be retrieved from any SNMP agent. The snmputil.exe software is available on the Microsoft Developer CD-ROM.

To receive SNMP error messages as an agent, use the command snmputil trap. Sample output is shown below.

Example SNMPUTIL session

```
C:\> snmputil trap

snmputil: trap generic=6 specific=10
  from -> 207.94.85.125
Variable = .iso.org.dod.internet.private.enterprises.1357.1.2.3.6.1.2.605
Value    = INTEGER - 0
Variable = .iso.org.dod.internet.private.enterprises.1357.1.2.3.6.1.3.605
Value    = INTEGER - 0
Variable = .iso.org.dod.internet.private.enterprises.1357.1.2.3.6.1.4.605
Value    = OCTET STRING - csrsm
csrsm
Variable = .iso.org.dod.internet.private.enterprises.1357.1.2.3.6.1.5.605
Value    = OCTET STRING - <0x63><0x73><0x72><0x73><0x6d><0x2c><0x20><0x53>
<0x69><0x67><0x6e><0x69><0x66><0x69><0x63><0x61><0x6e><0x74><0x2c><0x20>
<0x35><0x36><0x20><0x6c><0x69><0x6e><0x6b><0x20><0x75><0x70><0x2c><0x20>
<0x30><0x3a><0x30><0x0><0x6c><0x69><0x6e><0x6b><0x20><0x74><0x6f><0x20>
<0x76><0x76><0x70><0x2d><0x65<0x74><0x68><0x65><0x72><0x20><0x75><0x70>
<0x0a>

csrsm, Significant, 56 link up, 0:0 link to vvp-ether up.

Variable = .iso.org.dod.internet.private.enterprises.1357.1.2.3.6.1.6.605
Value    = OCTET STRING - <0x07><0xd2><0x08><0x07><0x0a><0x0b><0x10><0x00>
Variable = .iso.org.dod.internet.private.enterprises.1357.1.2.3.6.1.7.605
Value    = IpAddress - 125.85.94.207
}U^.
```

This line indicates that the SNMP message has been received.

Chapter 8: Customer Site Survey

Introduction

This survey provides a list of required information for installing and configuring the system software. This information must be obtained at the installation site. The configuration team must complete the survey in advance to ensure that the required information is available when needed.

The table below provides a list of the steps required for each package.

Software Packages	Switch	Perform Steps	Location
CCTIVR	Avaya M1/CS 1000	1-5	Step 1 on page 183
		12-13	Step 12 on page 188
CCTIVRContactCenter Interfaces **Important:** Requires surveying of CCTIVR processes as a prerequisite.	Avaya M1/CS 1000	1-5	Step 1 on page 183
		10-17	Step 11 on page 188
CCTIVRdata **Important:** Requires surveying of CCTIVR processes as a prerequisite.	Avaya M1/CS 1000	1-4	Step 1 on page 183
		8-9	Step 8 on page 186
CCTIVR interfacing with DMS	DMS/ MSL-100	1-4	Step 1 on page 183
		6	Step 6 on page 186
		12-13	Step 12 on page 188
CCMS integration package **Important:** Requires surveying of CCTIVR processes as a prerequisite.	DMS/ MSL-100	1-4	Step 1 on page 183
		10-17	Step 10 on page 187

Software Packages	Switch	Perform Steps	Location
CCTIVRdata **Important:** Requires surveying of CCTIVR processes as a prerequisite.	DMS/ MSL-100	1-4	Step 1 on page 183
		8-9	Step 8 on page 186
CCTIVR interface with ASAI		1-4	Step 1 on page 183
		12-13	Step 12 on page 188
		17	Step 17 on page 190
CCTIVR interface with Genesys T-server		1-4	Step 1 on page 183
		12-13	Step 12 on page 188
		18	Step 18 on page 190

Use this survey to gather the following information:

Step	Item	See page...
1	the computer name of the machine where the software will be installed	Step 1 on page 183
1	IP address of the machine where the software will be installed	Step 1 on page 183
2	your sales order number	Step 2 on page 184
2	your MPS ID	Step 2 on page 184
2	the MAC address (Adapter 0)	Step 2 on page 184
3	the processing server host names	Step 3 on page 184
3	the processing server IP addresses	Step 3 on page 184
4	the processing server (MPS) component numbers	Step 4 on page 185
5	the CCMS CLAN IP address	Step 5 on page 185

Step	Item	See page...
5	for the Legacy Meridian Link, the IP address and the port	Step 5 on page 185
6	the IP address of the switch, LinkPlexer or DMS100	Step 6 on page 186
7	the CLAN IP address of the TAPI Server	Step 7 on page 186
8	the port number used by IVR.DLL on the TAPI Server	Step 8 on page 186
9	the TAPI field separator	Step 9 on page 187
10	the unique HDX application ID	Step 10 on page 187
11	the Multicast IP Group (used by RSM) and the UPD ports for Interval to Date and Moving Window statistics	Step 11 on page 188
12	the Agent Position IDs for all IVR phone lines on every MPS system	Step 12 on page 188
13	the variable name to be passed by CCMS Routing Script through the HDX to the IVR application	Step 13 on page 188
13	the CCMS values passed to IVR application	Step 13 on page 188
14	the field-names and field-value pairs to be passed by IVR application to CCMS Routing Script through the HDX (for skills based routing)	Step 14 on page 189
15	the skill name from CCMS to be used by the IVR application	Step 15 on page 189
16	the RSM skill statistics from CCMS (menu section)	Step 16 on page 189
16	agent statistics (if any) used by the IVR applications	Step 16 on page 189

Step 1

What is the computer name and IP address of the machine where the software will be installed?

1. To obtain the IP address, right-click on Network Neighborhood on the Windows desktop, select Properties, click the Protocols tab, select TCP/IP, and click Properties.

IP address: _____

2. To obtain the computer name, right-click on Network Neighborhood on the Windows desktop, select Properties, and click the Identification tab.

   Computer name: _____

Step 2

What is the Sales Order Number, the MPS ID, and the Processing Server MAC Address of the system on which the software will be installed? See Required Licensing Information (CCTIVR) on page 193.

The system ID is required to use the KRS (see Licensing Requirements on page 25). The system ID is not required for a CTI server.

1. Your Sales Order Number.

   Sales Order Number: _____

2. The MPS ID (serial number) is located on the back of the MPS, or can be obtained by opening a command prompt. Type dlt at the command prompt, and enter the devlist command to obtain the serial number.

   MPS ID: _____

3. To obtain the MAC (Ethernet) address, type %MPSHOME%"\bin\plicnum (including the quotation marks) at a DOS command prompt and press Enter.

   MAC Address (Adapter 0): _____

Step 3

What is the host name and IP address of the machine where the processing server components are running? (Repeat for all machines.)

On Solaris, the host name and IP address exists in the /etc/hosts file.

Host Name: _____

IP Address: _____

Step 4

What are the processing server component numbers?

Start the VSH to obtain the processing server component number. If a component window appears, the numbers of MPS components are listed. If a component menu does not appear, enter the command comp in the VHS to display a list of the MPS components of the system.

MPS numbers:_____

Step 5

What is the CCMS Avaya server subnet IP address of the CCMS or Meridian Link?

1. For the CCMS Avaya server subnet IP address:

   To obtain the information from the CCMS server, enter the following:

   ```
   Program Files -> Symposium Server -> Settings
   ```

   CCMS Avaya server subnet IP address:_____

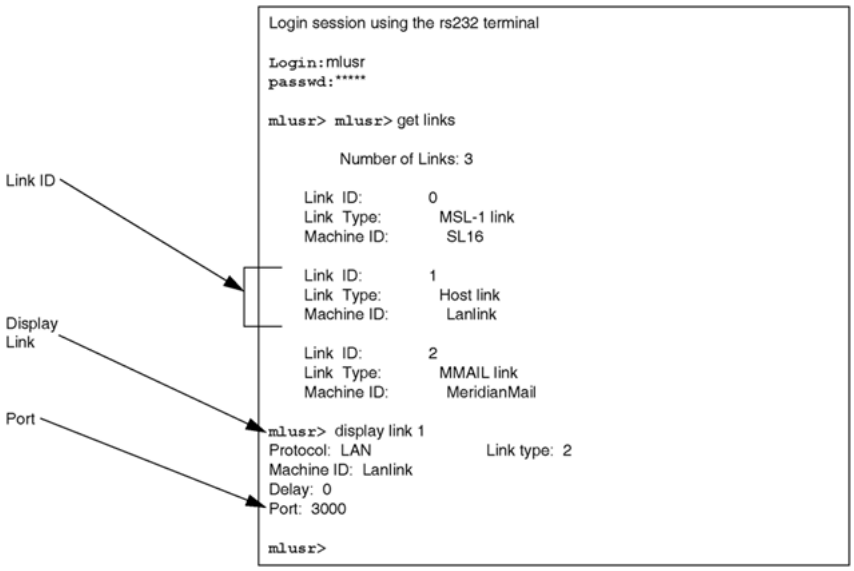
2. For the Meridian Link, you need the IP address and you need to confirm that the port is set to 3000.

   a. To obtain the IP address from the Meridian Link, enter the following:

   ```
   Login session using the rs232 terminal
   login:maint passwd:*****
   From prompt type:
   maint> showaddr
   Your module's host name: mlink Your module's IP address:
   10.94.85.114
   ```

   Meridian Link IP address: _____

   b. To confirm the port number is set to 3000, enter the following:



Step 6

What is the IP address of the switch, LinkPlexer, or DMS100?

1. When using a direct connection to DMS100/SL100 ICM-Link, obtain the IP address from the switch.

   DMS100/SL100 ICM-Link IP address: _____

2. When connecting through a LinkPlexer, obtain the Avaya server subnet IP address from the Windows 2003 machine on which the LinkPlexer is running.

   Link Server IP address: _____

Step 7

What is the Avaya server subnet IP address of the TAPI Server?

TAPI Server IP address:_____

Step 8

What is the port number used by IVR.dll on the TAPI Server?

The port number used by IVR.dll is located in: Program Files ->Symposium Tapi Service Provider for M1 -> Configuration Database -> IVR

For the CCMS information use: Program Files->Symposium Call Center Server->System Information

Sample Procedure:

1. Open the TAPI M1 configuration program.

   The M1S Configuration window appears.
2. Select the VIEW DATABASE option.

   The Database Configuration window appears.
3. Select the IVR option.

   The IVR Configuration window appears.

   The port number is displayed on the IVR Configuration window.

Refer to IVR Configuration Window on page 227 for a sample of the window.

Port Number: _____

Step 9

The default field-separator used by the TAPI clients is a comma (,). Are there any on-site conflicts that require this value to be changed?

TAPI field separator: _____

Step 10

What is the unique HDX application ID (if more than one HDX application is being used, the number should match the CCMS script)?

Locate the application ID value in Contact Center Manager under Call Flow Administration > Script Variables.

HDX Application ID: _____

Data for use with the test scripts: The Variable Name is "ivr_HDXID", the Type is "Integer" and the HDX Application ID value is "1".

Using the information in the preceding paragraph, confirm that Host ID value is properly set.

Step 11

What is the Multicast IP Group (used by RSM) and what is the UPD ports for Interval to Date and Moving Window statistics?

Obtain the Multicast IP Group and UDP ports used by RSM by running the application: \Program Files\Avaya\iccm\bin\RsmConfig.exe

Multicast IP Group: _____

Interval to Date	Moving Window
Agent: _____	Agent: _____
Application: _____	Application: _____
Skillset: _____	Skillset: _____

Confirm that Host ID value is properly set.

Step 12

What are the Agent Position IDs for all IVR phone lines on every MPS system?

Obtain this information in the M1, DMS, or CCMS data fills.

Data for use with the test scripts: POS IDs.

Step 13

What is the variable name passed by CCMS Routing Script through HDX to the IVR application (menu-choice) and what are the CCMS values passed to the IVR application?

1. Obtain the variable name to be passed by CCMS Routing Script through HDX to the IVR application (menu-choice).
2. Get the CCMS values passed to the IVR application.

To obtain the variable name, perform the steps below.

1. Select the Call Flow Administration window.
2. Select the Script Variables window.

The variable names are listed in the Script Variables window.

To get the CCMS values passed to IVR application:

1. In the Script Variables window, double-click on one of the variable names to display its properties.
2. From the Properties window, select the Attributes tab to display the value.
3. Repeat the procedure for each of the variable names.

Step 14

Obtain the field-names and field-value pairs to be passed by the IVR application to the CCMS Routing Script through HDX (For skills-based routing).

The IVR field-value pairs are located in the PERI producer folder, see CTI.AVCalldata.AVpairs.key.

Step 15

Get the skill name to be used by the IVR application from the CCMS by performing the following steps.

1. Select the Call Flow Administration window.
2. Select the Skillsets window.

The skill names are listed in the Skillsets window.

Step 16

Obtain the RSM skill statistics from CCMS.

Important:

Do not add any agent names if they are not going to be used by the IVR application.

Confirm agent statistics (if any) used by the IVR applications.

To confirm CCMS agent statistics:

1. Select User Administration.
2. Select the Users option.
3. Select general suboption GET ALL OF AGENT NAMES.

Step 17

Obtain the IP address of the G3.

Obtain the client ID of the G3.

Step 18

Obtain the IP address and port of the Genesys.

Determine the redundancy mode of GTS: none, warm, hot.

If redundancy is configured, obtain the IP address and port of the standby Genesys server.

Chapter 9: PERIplic License Server

Introduction

The PERIplic licensing system uses the client/server method. A license server provides a list of licenses. A client (licensed software product) requests a license when it starts. The server checks the requested product, release number, and identifying information supplied by the client to confirm that the information is valid, and then grants the license. A license remains in use until the client releases it. If a license is not acquired, CCTIVR limits the number of device registrations to five.

The PERIplic package includes a license server (plicd), a file (plservrc), and a utility (plicnum) used to get the client Ethernet address for license issuance. In addition, a log file (plic) is generated to record actions performed or attempted as a result of accessing the PERIplic package components. The log file location is: %MPSHOME%\PERIplic\etc\plic.

The PERIplic license server can be installed either on individual nodes on which licensed packages are resident, or in a centralized location in a networked system. The system is typically shipped with the license file and keys already installed (as applicable).

Windows Installation

This package is typically installed and configured by Avaya prior to delivery of your system. However, you may need to modify the package components if a licensed package is added or deleted at a later date, or if the location and configuration of the license server changes. The package includes a license server (plicd), a file (plservrc) and a utility (plicnum) to get client Ethernet addresses for license issuance. The PERIplic package requires approximately 967 KB (0.97 MB) of disk space.

There are no special procedures necessary for installing this package. Upon execution of setup.exe, the installation procedure commences and copies the files to your computer.

Solaris Installation

This package is typically installed and configured by Avaya prior to delivery of your system. However, you may need to modify the package components if a licensed package is added or deleted at a later date, or if the location and configuration of the license server changes. The package includes a license server (plicd), a license file (plservrc) that contains keycodes, and a utility (plicnum). The PERIplic package requires approximately 600 KB (0.6 MB) of disk space.

There are no special procedures for installing this package. Upon execution of the pkgadd utility, the system confirms the action and provides additional information. Wait for the files to be copied to your computer. When the Installation was successful prompt is displayed, the process is complete.

The following is important information about Solaris installations:

- For the license file installation procedures, see Installation Procedures on page 23. For the license file editing procedures, see Configuring the License File on page 27.
- If a system has multiple Ethernet addresses, use the Ethernet address (or MAC address) of interface 0 (zero).
- If a new network card (or a new motherboard with a built-in network card) is installed, Avaya must generate new license files.

License Installation Prerequisites

Each of the software packages requires a license. The package includes:

- software DVD-ROM
- the license file keycode required for the software (Obtaining Keycodes by KRS or Telephone on page 26)

The license information is added to the plservrc file during the installation procedure. If plservrc already exists (from another Avaya software product), do not overwrite the file. Rather, combine the contents into a single file and place the license server in a global location on the system.

Caution:

Copy plservrc to a backup directory or other backup source. This allows for easy restoration if the file is inadvertently deleted or corrupted.

If you do not have the license information, call your technical support representative to obtain a copy of this file. The sales order number is required to obtain a license.

Enter the perirev command at a DOS prompt.

```
c:\>perirev
output saved to C:\Program Files\Avaya\perirev_out
```

Access the output file example (actual file may not have all items listed here):

```
vsh#css.1,vos/oscpcv016 {4} -> perirev
Avaya_SelfService     version: 3.0.0.3.6
productsuite for mps3.0.0.3.6
cut-date: 20060314
patchlevel: Avaya_SelfService_3.0.0.Patch_Bundle_4-(20060803)
ConfigType(s):       ipml
----------------
ase     version: 5.1.0
cti     version: 3.0
cti3.0.81  pre-rel-2
cti3.0.85  cut-ver-1
cti3.0.87  cut-ver-2
dist    version: 2.0.0
doc     version: 3.0.0
fw      version: 1
globl   version: 3.0.0
perl    version: 5.8.5
plic    version: 3.0.0
=======================
Microsoft Windows [Version 5.2.3790]
Service Pack 1
=======================
Press any key to continue . . .
```

License File

Avaya generates the software keycode, which allows the user to run the specified software. For Avaya to generate the license file, you must provide site-specific information.

Required Licensing Information (CCTIVR)

Before installing software, the following licensing information is required for CCTIVR operations:

Product Specification		Description
Product Name	CCTIVR	Name of the product requiring the licenses .
Release Number	4.1	The release number of the product.
Max DN Registrations	Per-license purchase order	The number of licensed device registrations.
Ethernet Address	0:50:da:28:0:bc (for pcXXXr)	The Ethernet MAC address of the server running the LM server.
LSHOST	pcXXXr	An environment variable that should be set to the host name or IP address of the license server (that is, the host running the plicd license server daemon).

Software Package	Product	Release
CCTIVR	tls	4.1
G3 ASAI	tls	4.1
Genesys T-Server	tls	4.1
CCTContact- CenterInterfaces	cshdxls	4.1
	csrsmls	4.1
CCTIVRDATA	cstapils	4.1

Switch Interface	Product	Release	Number of Licenses
CCMS/MLSM	tls	4.1	One per device
G3 ASAI	tls	4.1	One per device
Genesys T-Server	tls	4.1	One per device
CCTCallCenterInterfaces	cshdxls	4.1	One
	csrsmls	4.1	One per device
CCTIVRDATA	cstapils	4.1	One per device

Sample License Files

For CCTIVR (on an Avaya M1/CS 1000 switch), the following line is required. The parenthetical specification 1000 indicates that the Telephony Link Server (TLS) allows 1000 DN registrations.

```
hAuFQ9hguozWG62sfCA4MDQ2r3cXBw8Jqrl5DT8zdAfGLkLyfFA2N7c/
jRA9CyDtlw8DBQYHx4eXn58= # tls 4.1 00:b0:d0:78:6a:af (1000) 360 secs
```

For CCTContactCenterInterfaces (HDX and RSM interfaces), the following line is required. The parenthetical specification 500 indicates the number of devices that can connect to the Link Server (CSHDXLS or CSRSMLS).

```
BeuHsPNikqR4fD9Ojs7e1rDTUtKSigRIS5oLa3a7vB+uK1/vdnJwatsJuyCumXC09Ozk4OLi
# cshdxls 4.1 00:b0:d0:78:6a:af (1) 360 secs
CbHd6nm0bliEgMOycjIiKkwvri5udvi0t2b3l4pHQONS16MTio6Mlif1R9xSZYxICBAYHB4e
# csrsmls 4.1 00:b0:d0:78:6a:af (500) 360 secs
```

For CCTIVR on an Avaya M1/CS 1000, the following line is required. The parenthetical specification 500 indicates the number of devices that can connect to the Link Server (CSTAPILS).

```
DJD8y2jtDbmizM5v17enr6uYKempubXy1FW9dW3jBYZXj01QCMTGx8oSpv8yde4aeGhkYGJjY
w== # cstapils 4.1 00:b0:d0:78:6a:af (500) 360 secs
```

Obtaining Licensing Information

The product installation materials contain the product name and the release number.

The maximum number of DN registrations corresponds to the number of device registrations permitted. See your License Purchase Order agreement.

Licensing information requirements are referenced in the Customer Site Survey, see Step 2 on page 184.

To obtain a license, go to the Avaya Web site and under Support and Training, access the link for Keycode Retrieval.

For CTI you require the following keys:

- tls (base cti functionality like transfer, agent functions)
- csad (internal CTI attach data storage)
- cshdxls (HDX)
- csrsmls (RSM)
- cstapils (TAPI data)

Each device used during callflow is registered and the license is allocated for it. For example, sample transfer call scenario involving 3 devices requires 3 licenses for these devices obtained from the TLS process.

Ethernet Address

Install PERIplic by using the installation instructions provided (see Windows Installation on page 191 and Solaris Installation on page 192). After PERIplic is installed, perform the following steps:

At the DOS prompt type:

```
C:\>plicnum
```

The response provides the Ethernet address (in this example, 0:11:zz:22:0:zz)

Always use interface #0.

```
Avaya License Number (Interface #0) --> 0:11:zz:22:0:zz
```

Host Name

To obtain the host name, enter ipconfig/all at the command prompt:

ipconfig/all
Provides information about the configured host name and Ethernet connectivity. The following is a sample configuration.

```
C:\> ipconfig/all
Host Name . . . . . . . . : pcXXXr.zzz.com
DNS Servers . . . . . . . : 192.84.160.1
111.22.33.444
222.33.44.555
Node Type . . . . . . . . : Hybrid
NetBIOS Scope ID. . . . . :
IP Routing Enabled . . . . : No
WINS Proxy Enabled . . . . : No
NetBIOS Resolution Uses DNS . : No
Ethernet adapter El90x1:
Description . . . . . . . : 3Com EtherLink PCI
Physical Address. . . . . : 00-11-zz-22-00-ZZ
DHCP Enabled . . . . . . . : No
```

```
IP Address   .  .  .  .  .  .  : 333.44.55.666
Subnet Mask  .  .  .  .  .  .  : 444.555.666.7
Default Gateway .  .  .  .  .  : 555.55.55.55
Primary WINS Server   .  .  .  : 666.77.888.999
Secondary WINS Server .  .  .  : 888.99.11.222
```

The license server can be installed either on individual nodes where licensed packages are resident or in a centralized location in a networked system. By default, the licensed packages determine the location of the license server through the setting of the LSHOST environment variable (see Start\Settings\Control Panel\System\Environment). The LSHOST variable is set to the name of the host on which the license server is running, and is typically set as part of a licensed package installation. The license server daemon is located (by default) in: %MPSHOME%\PERIplic\etc\.

Verifying License Information

At a DOS command prompt, enter the following:

```
C:\>vsh
```

The following is displayed:

```
Configured components are:
{1} #common.0/pcxxx<local/up>
[2] #css.1/pcxxx<local/up>
```

Enter the component number associated with the #css.1/pcxxx component; in this case, enter 2.

```
Enter the number (displayed in[]) of component desired -> 2
```

The response is:

```
Default component set to [#css.1/pcxxx]
vsh#css.1/pcxxx {1} ->
```

Enter the command tls display licenseinfo

```
vsh#css.1/pcxxx {1} -> tls display licenseinfo
```

The response is:

```
TLS License Information
---------------------------
Licensed Dn Registrations: 5
Current Dn Registrations: 0
vsh#css.1/pcxxx {2} ->
```

- Licensed Dn Registrations displays how many device registrations are allowed.
- Current Dn Registrations displays how many device registrations are currently being used.

Starting and Stopping the License Server

The license server usually starts automatically during system startup. It is shown in the Status screens and the Control Panel as the Avaya License Service. The Avaya License Service assigns licenses and log files to the appropriate locations for each of the CTI processes.

The license server must be running to access Avaya software. When it is starts, the license server process reads the entries in the %MPSHOME%\PERIplic\etc\plservrc data file. If the entries in this file are changed, you must stop and then restart the license server. This is explained in the following procedure.

To manually stop or restart the license server:

1. Open the Windows Start menu, and choose Settings > Control Panel.
2. Double-click the Services icon.
3. In the Services window, select the Avaya License Service.
4. Click the Stop button to stop the server, or click the Start button to start or restart the server.

Alternatively, after changing the licensing codes, reboot the system to ensure that the license server reads the new codes.

Chapter 10: Avaya M1 Switch Configuration

Introduction

This appendix describes how to configure the Avaya Meridian switch with the CCT Server to enable CTI message generation for screen pops and other CTI functions.

Checklist

Perform the all of the steps in the following checklist when preparing to configure the switch with the CCT Server.

1. Develop a list of all agent names and ACD login IDs (for example, Jan Smith, 3458 and Bill Jones, 3643). Specify the device numbers for every agent phoneset to be monitored. (This includes both the PBX DN and the position ID for each phoneset.)
2. Develop a list of all ACD-DNs (queues) and CDNs through which calls may flow.
3. If applicable, develop a list of all IVR ports with corresponding DID access numbers that will run CTI MPS Developer applications. The application attaches DNIS and some call data key-value pairs, and then performs CTI mute transfers to one of the CDNs specified above. If the CTI mute transfer fails, the application issues a hookflash transfer to the same CDN.

   In cases where duplicate keys exist, the application returns the value of the first key it encounters. If your environment requires the use of duplicate data keys, write the application to return all key-value pairs. If the application does not request a specific key in the getdata request, the application returns all key-value pairs, including duplicate keys.
4. Using a program such as Visio, create production call-flow and CTI network diagrams following the sample formats shown in CTI Test Call Flow Diagram on page 206 and Sample CTI Network Diagram on page 206.

   - In the call-flow diagram, show the DID CDN for incoming calls, the IVR hunt group, the IVR agent position IDs, the CDNs to which the application transfers calls, and any agent queues through which calls may pass. Also show the desktop agent's PBX DN, position ID, name, and ACD login ID.
   - In the network diagram, show all IP addresses, subnet masks, and default gateways for the following: Link Server, TAPI server, MPS network cards for

the customer's LAN, and the CCMS CLAN port. Also show any host computers, routers, or firewalls that pass data among the IVR/ CCTIVR/ TAPI agent desktops.

5. Ensure that all agent phone sets and IVR ports in the call center are CTI-enabled. This is typically done in the LD 10 and LD 11 programs. (AST must be enabled.)
6. Ensure all CDNs and ACD DNs within the production call flow are CTI-enabled, as discussed in this document. This is typically done in the LD 23 program. (AST must be enabled.)

Switch Configuration

Configuring Trunk Route Data in Load Program 16 (LD 16)

The following are the requirements for attaching data from an MPS:

- The MPS is connected to the PBX using the 2500 station ports.
  - The ports must be configured based on the LD 15 status change message configuration requirements.
- The Lineside T1 is configured as the 2500 station port.
- The application performs an attach data to the CCT Server.
- The agent queue and phone are AST-enabled.
- The PBX software level is 25.x for CC 6.0 or 19.x or later for SCCS 5.0.
- The Meridian link software is release 4.2 or later.

Configuring Positive Disconnect Signals to the IVR

In Load 10 at the FTR block in the SET DATA BLOCK, add ISP OSP.

The FTR configuration enables AB bit signaling (D4-AMI). ISP enables disconnect supervision for internal calls (transfers). OSP enables disconnect supervision for external calls (PBX to IVR). Check the Load printout for the FTR_DATA block. It is in LD 21, or just above the SPRE code.

Configuring IVR Ports in the ACD

Configuring IVR ports in the ACD requires Lineside T1 configuration. Configure the IVR ports to automatically log in to a hunt group. Because the IVR ports are not configured as agents, they do not need to explicitly log in to or out of the switch using SPRE codes.

Configuring CTI parameters

Every DN, CDN, and ACD queue that requires monitoring (generating CTI messages) must be CTI-enabled.

The two most critical parameters are AST and IAPG:

- Set AST to on for analog sets 500/2500, which is how the IVR ports are configured.
- Set AST = key1 key2 (for example, 00 01) for digital sets, which is how most live agents are configured.
- Set IAPG to 1, which means all messages are broadcasted. Changing the IAPG value filters out certain types of messages, which is not desirable.
- Set ISAP to yes for ACD queues, and set the VSID parameter to the VAS ID value configured in the switch.

Configuring Overlay Setups

The following describes how to configure overlays:

1. Configure the LD 17 (Load Pgm 17) record.
2. Define an AML, using the Avaya default values.
3. Define the VAS server with a unique VAS ID assigned to the AML port.
4. Configure the VAS parameters. Configure Status Change Msgs in LD 15 by setting VSID to the VAS ID of the Meridian Link defined in LD 17. This is necessary only for non-ACD DNs, such as calls between agents.
5. Set SECU to yes. (Enabling this security parameter allows CTI transfers from IVR applications.)

Configuring 500/2500 Sets (Including IVR Ports)

The following describes how to configure the 500/2500 sets:

1. Configure the LD 10 (Load Pgm 10) record.
2. Set the AST prompt to yes.
3. Set the IAPG prompt to 1.
4. Set the AACD prompt to yes (for an ACD set).
5. Set the CLS (class of service) to have XFA (transfer allowed), AGTA (ACD services allowed) and (LDTA) Line Disconnect Tone Allowed.

   For Option 11C systems, also set CLS to have the MBX A prompt turned on.
6. Set the FTR ACD prompt (queue and position ID in particular).

In a Contact Center Manager Server environment, you must de-aquire any previously acquired DNs before making changes to the device in the switch. If you do not explicitly configure CCMS to acquire the IVR ports, these ports may appear acquired when, in fact, they are not. Their bitmaps become visible, which makes it look like they have been acquired.

Configuring Digital Sets

The following describes how to configure agent or supervisor digital sets:

1. Configure the LD 11 (Load Pgm 11) record.
2. Set the AST prompt to indicate the keys that will be AST-enabled (maximum of two). For instance: AST = 00 01 (but keys can vary at each site). The first key is the agent incoming ACD position, and the second key is the PBX DN.
3. Set the IAPG prompt to 1. This means all CTI messages are sent without messaging filtering.

   The position ID is a separate setting also contained in the Load 11 program.
4. Program the Transfer key on each phone (if the transfer feature is to be used).
5. Program the Conference key on each phone (if the conference feature is to be used).

   Record the position ID and PBX DN for every agent. These values are registered by the CTI client applications to receive call presentation messages.

Configuring ACD DNs (Agent Queues)

The following describes how to configure ACD DNs:

1. Configure the LD 23 (Load Pgm 23) record.
2. If a prompt labeled AST exists, set it to YES.
3. Set the ISAP prompt to YES.

   After setting ISAP = YES, if the VSID parameter is not visible, exit from LD 23 and run it again. The VSID parameter becomes visible, and is most likely blank. Set VSID to the VAS ID configured in the switch. The VAS ID is typically between 0 and 15 for MLINK and between 16 and 31 for an CCMS environment.
4. Set the VSID prompt to the Meridian Link VAS ID assigned in LD 17.

Configuring Controlled DNs (CDNs)

The following describes how to configure controlled DNs:

1. Configure the LD 23 (Load Pgm 23) record.
2. Set the CNTL prompt to YES.

   If an CCMS has acquired the CDN, it will automatically set CNTL to YES and assign a different parameter (ASID) to the Meridian Link VAS ID. The VSID and HSID prompts appear blank and are not configurable.
3. Verify that the ASID prompt is equal to the Meridian Link VAS ID assigned in LD 17.

Configuring DNIS Notification

The following describes how to configure DNIS notification:

1. Set the OPT prompt to DNIS in Customer Data Block in LD 15.
2. Set the DNIS prompt to YES to enable the route to pass DNIS in the Trunk Route.
3. Set the LENGTH prompt to the number of DNIS digits expected (usually 4, 7, or 10). You can specify any number up to 31.

4. Configure Incoming Digit Conversion (IDC) to direct DID or DNIS digits to ACD-DNs or CDNs. For the LD 16, set the IDC to YES and configure the IDC table number to be used for this route.
5. Configure IDC tables in LD 49.

IVR Information

The following information is required for MPS systems:

- IP address
- the following lists:
  - list of all Position IDs for each phone port on the IVR
  - list of queues
  - list of CDNs through which a call may flow
  - list of modem lines for dial-up access

If a customer requires access to the IVR through a secure system, the customer must provide access for the programmer, field engineer, and technical support.

CCT Server Information

The following CCT Server information is required:

- IP address of CCT Server
- IP address of the Avaya server subnet on the CCMS server
- host name of the CCT Server
- the following lists:
  - list of all queues, DNs, and CDNs though which calls may flow
  - list of all software applications to be installed on the CCT Server. Applications such as backup and security software are the responsibility of the customer to install, configure, and maintain.
  - phone lines for RDC to provide access to the CCT Server. If a customer requires access to the CCT Server through a secure system, the customer must provide access for the programmer, field engineer, and technical support.

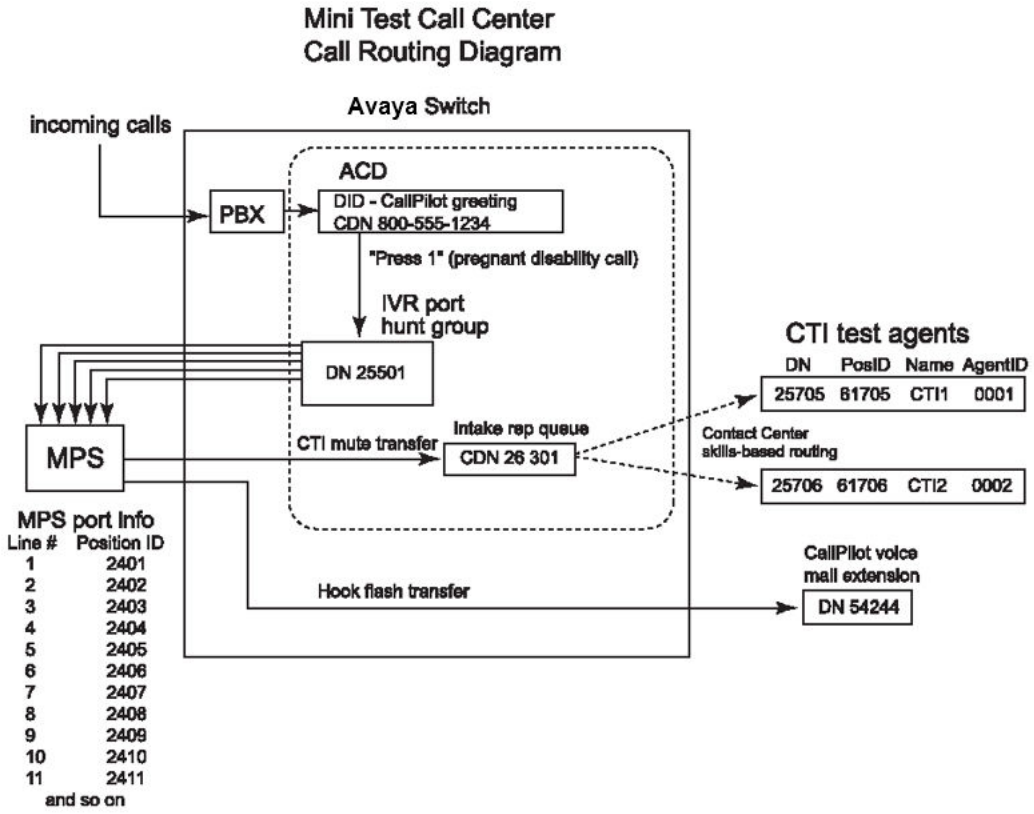
CCTIVR Checklist

The following items are required:

- One or more test agent phone sets identical to the ones in the call center.
- One or more test computers identical to the ones in the call center alongside the test agent phone sets. These computers must be running the same operating system and have the same software applications installed as the production call center agents.
- One or more text PCs with RDC installed. Configure the these PCs as hosts waiting for a TCP/IP connection. Password protection is recommended.
- The test PCs must be able to ping the TAPI server.
- One or more test agent names and ACD login IDs (for example, CTI1, 1001 and CTI2, 1002). Know the PBX DNs and the position IDs for each phone set.
- The test agents must be set up to log into a single test queue automatically. Do not configure the phones to become Not Ready or Set Busy if a call is not answered.
- A single test CDN that transfers calls to the test agent queue specified above. This may require a writing a script and attaching it to the CDN.
- Two test DID access numbers that are connected directly to the CallPilot system. These test DID access numbers transfer calls to the IVR test lines (ports 95 and 96). On each of these ports, run a test MPS Developer application configured for CTI. These applications attach DNIS, and some call data key value pairs, then perform a CTI mute transfer to the specified test CDN. If the CTI mute transfer fails, the application issues a hookflash transfer to the same CDN. Specific message logging must be in place to indicate the following:
  - whether the CTI resource was obtained
  - if the resource was obtained, add messages after each add-data request indicating the result (success or failure)
  - provide the request to issue a CTI mute transfer and the result
  - if an error occurs, log it and provide information on the request to issue a hookflash transfer and the result
- The test agent phone sets must be CTI-enabled.
- The test agent PCs must have CCT server and Agent desktop software installed.

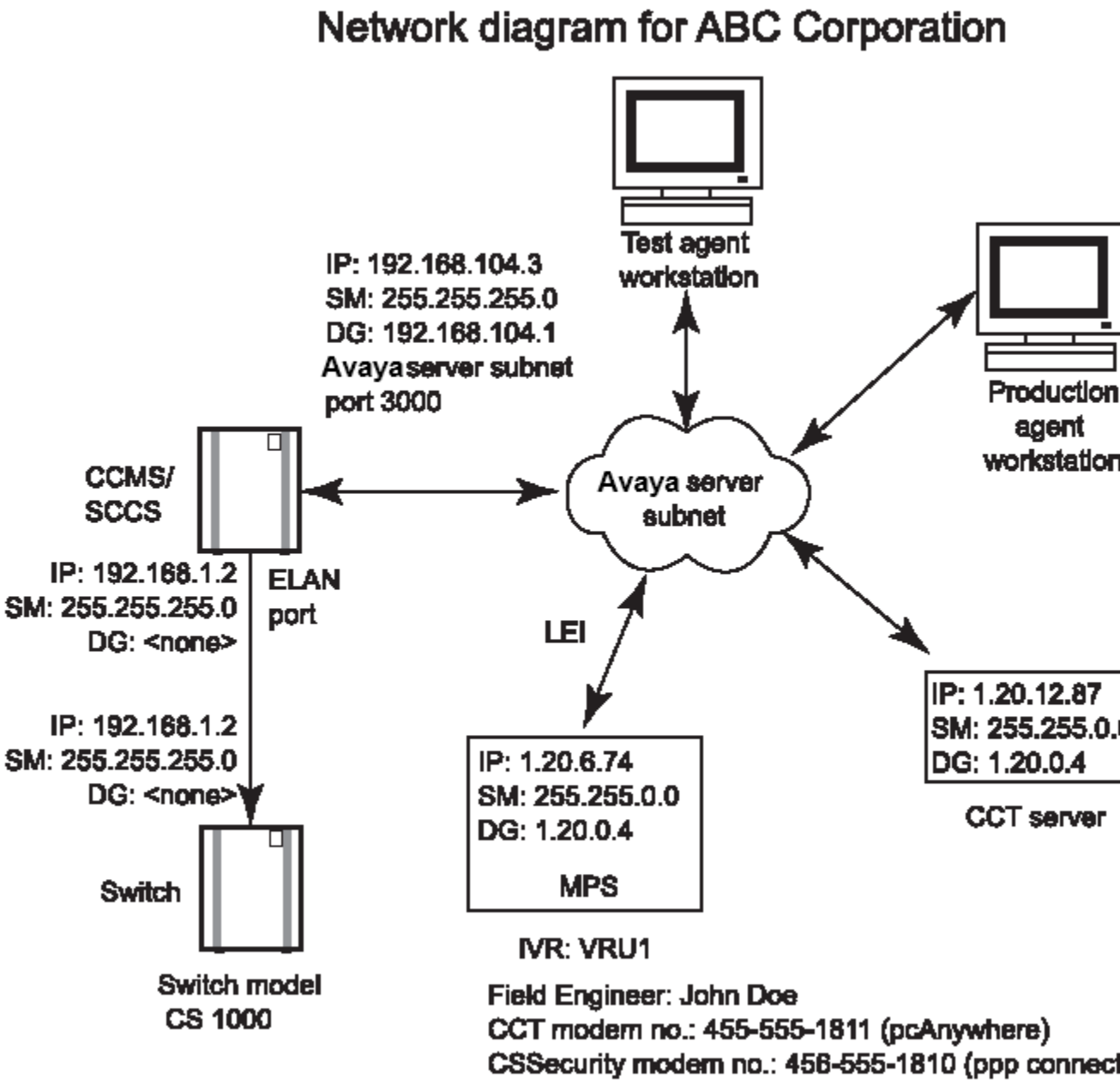
CTI Test Call Flow Diagram

Develop a test call-flow diagram similar to the one shown in the following diagram. It must contain all DNs, CDNs, and ACD DNs (queues, splits, route points, and so on) through which the call flows.



Sample CTI Network Diagram

Develop a CTI network diagram with all relevant IP information in a format similar to the one shown in the following diagram.



CCTIVR interface with Genesys and ASAI

The configuration details of these systems are beyond the scope of this document. Use the installation procedures provided by the vendors of these systems.

The configuration of the CCTIVR interfaces with the Genesys and the G3 ASAI logically follows the explanation for the M1, which precedes this text. For configuration of the devices in the switch, you must collect the following items.

1. DN and device configuration for all IVR ports.
2. DN and device configuration for all agent devices.
3. Identification of all queues, CDNs, VDNs that relate to the IVR and agents in the system.

With this information, configure the CCTIVR interfaces with Genesys and G3 ASAI using the previous sections as a guide.

Chapter 11: Avaya M1/CS 1000 Sample Configuration

Introduction

The Avaya M1/CS 1000 sample configuration describes the configuration parameters used by the Processing Server interface.

CCTIVR Configurations

Register the queue used by agents and the IVR in csvapi.

- Configuration of Queue 6400 IVR ACD Group (LD 23) on page 209
- Configuration of IVR Position ID 2100 on Avaya M1/CS 1000 (LD 10) on page 212
- Configuration of CDN 6702 for the CCMS (LD 23) on page 216

Configuration of Queue 6400 IVR ACD Group (LD 23)

An ACD queue (6400) is defined for the IVR port. This configuration setting allows CCMS to use the IVR queue for the Give IVR Treatment function.

Configuration Setting	Explanation
TYPE acd	TYPE value is set to acd (Figure 1: Queue 6400 ACD Group (LD 23) Configuration Example on page 211).
ACDN 6400	The ACDN value is set to 6400 (Figure 1: Queue 6400 ACD Group (LD 23) Configuration Example on page 211). This value is used in LD 10 (Configuration of IVR Position ID 2100 on Avaya M1/CS 1000 (LD 10) on page 212).
IVR YES	IVR value is set to YES. This setting is required for the Give IVR Treatment function (Figure 1: Queue 6400 ACD Group (LD 23)

Configuration Setting	Explanation
	Configuration Example on page 211). If the IVR queue is used with the Give IVR Treatment function, then the IVR value must be set to YES. If the IVR ports are set up as agents in a skillset, the queue to skillset command is used by CCMS and the IVR value is set to NO.
ALOG YES	With the ALOG value set to YES, the Meridian 1 automatically logs in the positions.

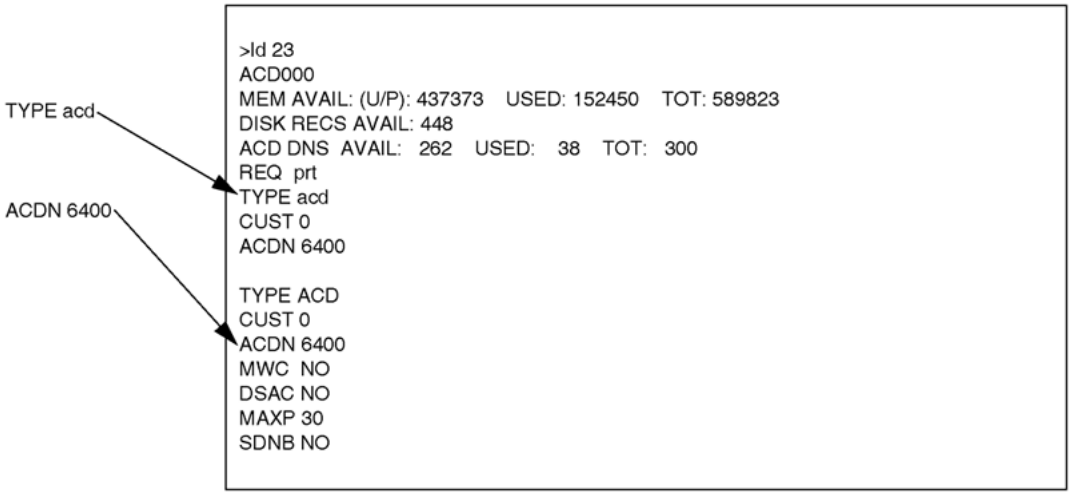
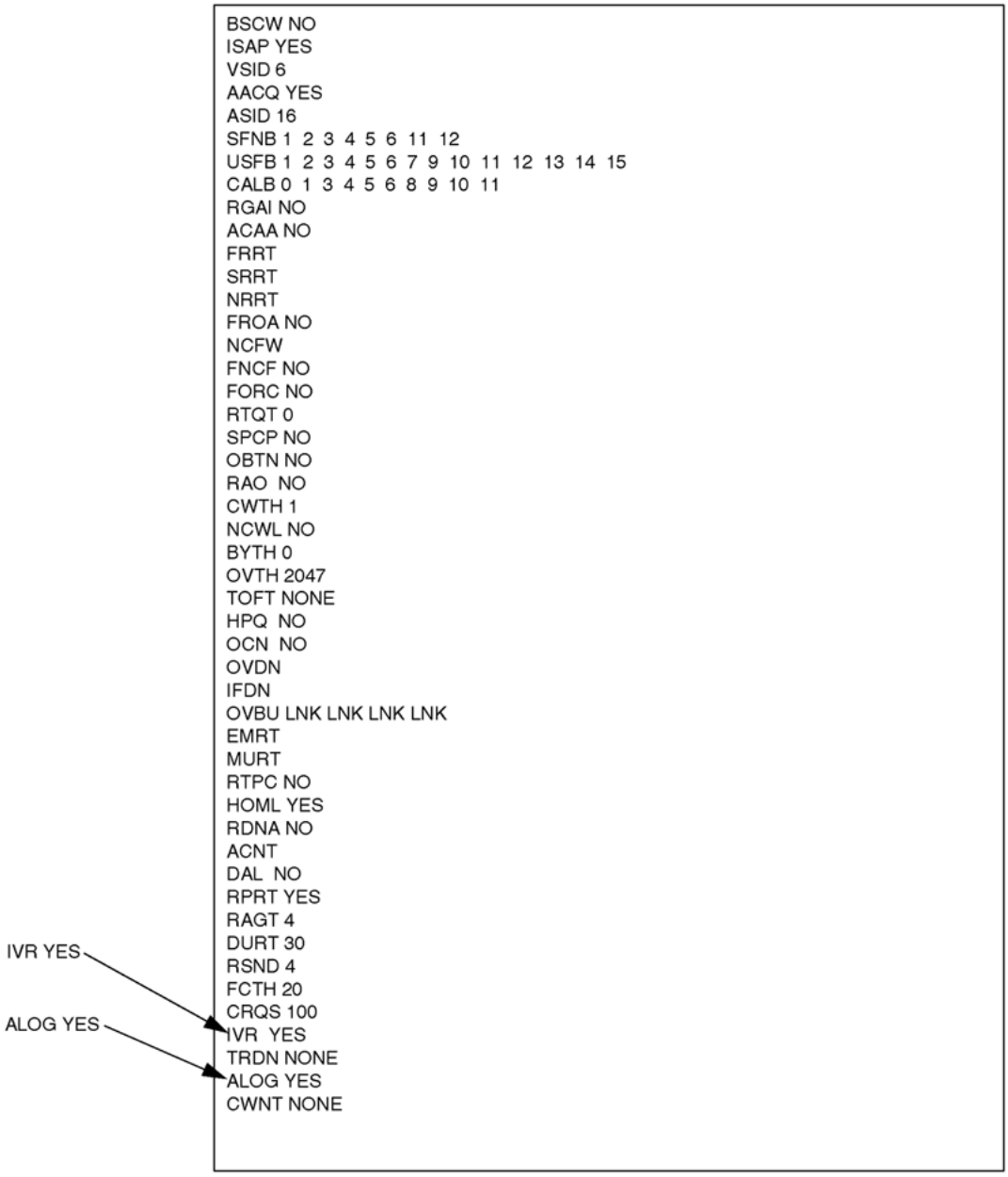


Figure 1: Queue 6400 ACD Group (LD 23) Configuration Example



Configuration of IVR Position ID 2100 on Avaya M1/CS 1000 (LD 10)

The IVR port assigned to ACD 6400 has a position ID of 2100.

Configuration Setting	Explanation
AST YES	Sets the AST value to YES (Figure 2: IVR Port 2000 Configuration Examples (M1/CS 1000, LD 10) on page 215).
IAPG 1	Sets the IAPG value to 1 (Figure 2: IVR Port 2000 Configuration Examples (M1/CS 1000, LD 10) on page 215).
CLS (Class of Service)	Adds the XFA (transfer option) to the CLS (Figure 2: IVR Port 2000 Configuration Examples (M1/CS 1000, LD 10) on page 215). Add the AGTA (agent option) to the CLS (Figure 2: IVR Port 2000 Configuration Examples (M1/CS 1000, LD 10) on page 215).
LDTA	Line Disconnect Tone M1 notifies an analog line if a caller has disconnected by giving a dial tone for 6 seconds. This is only required on analog IVR lines, when IVR uses CPD (Call Progress Detection).
AACD YES	Sets the AACD value to YES. This value must be set to yes if the position ID is to be registered with the Meridian 1. The value is used when CCMS acquires the port (Lineside T1 Interface on page 213).
AACS YES	Sets the AACS value to YES. This value is used when CCMS acquires the port (Lineside T1 Interface on page 213).
FRT ACD 6400 2100	Sets the Device Number Queue to 6400 or 2100 (Lineside T1 Interface on page 213). This value is set in LD 23 (Configuration of Queue 6400 IVR ACD Group (LD 23) on page 209).
FTR ISP 1-(75)-255 (when using line side T1)	Enables hookflash disconnect supervision with a flash timer in 10 millisecond units.
FTR OSP (1) (when using line side T1)	Enables battery reversal answer and disconnect supervision for outgoing calls with absolute and assumed answer indication.

Lineside T1 Interface

Most IVR installations behind M1 use the Lineside T1 interface, which provides 24 voice connections to the Processing Server.

The following list defines the switch settings on the Lineside T1:

- Framing D4
- Signaling Loop
- Coding AMI
- Line supervision on T1 Failure

The Line supervision on T1 Failure setting determines what state all 24 ports of the Lineside T1 card will appear to the M1/CS 1000 in case of T1 failure. The ports can appear to the M1

as either on-hook or off-hook on T1 failure (if the carrier is lost, have ports go to idle or go busy–logged out).

All idle Lineside T1 lines go off-hook and seize a Digitone Receiver (DTR) when the off-hook line processing is invoked on T1 failure. This may prevent DID trunks from receiving incoming calls until the Lineside T1 lines time-out and release the DTRs.

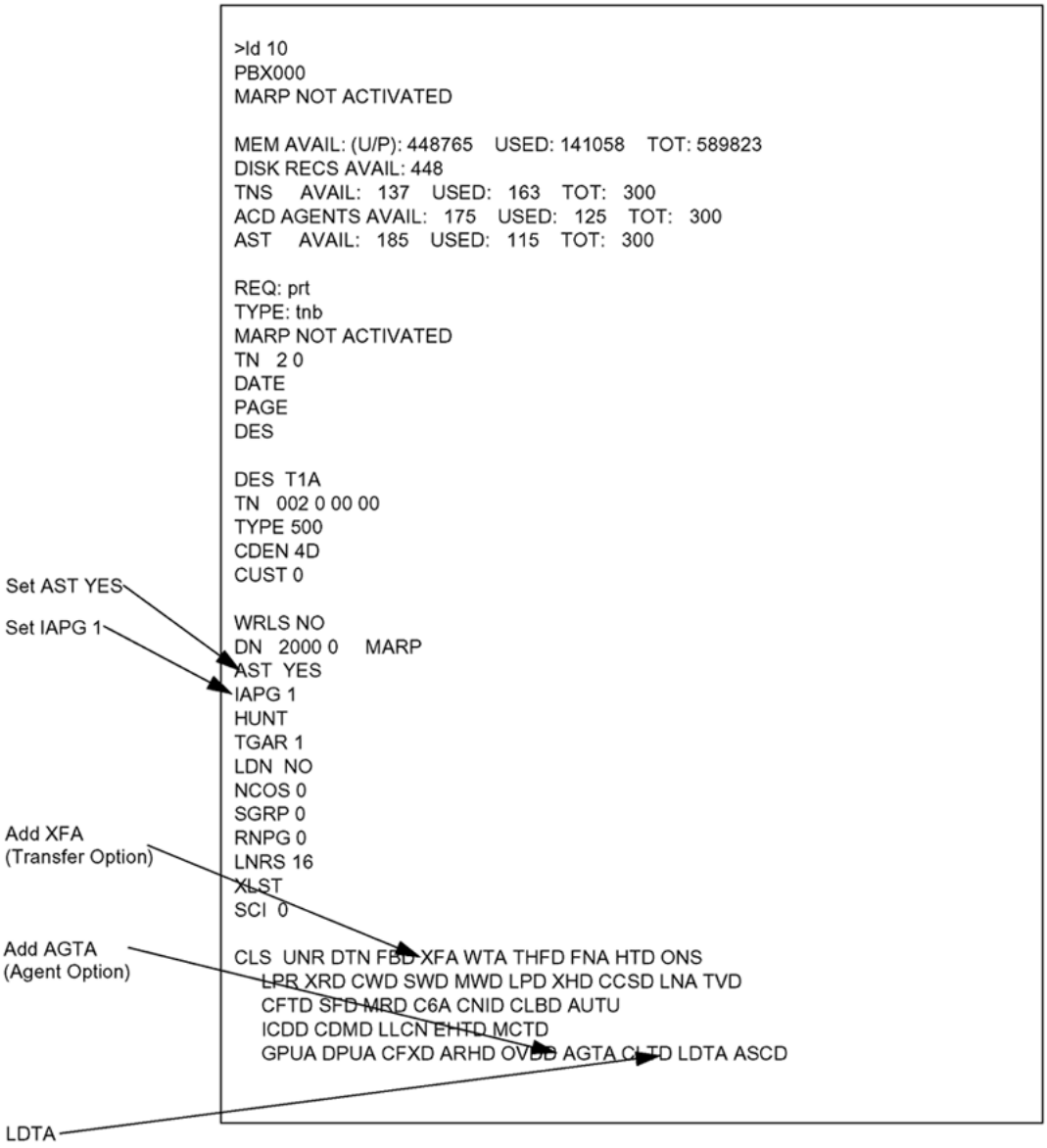
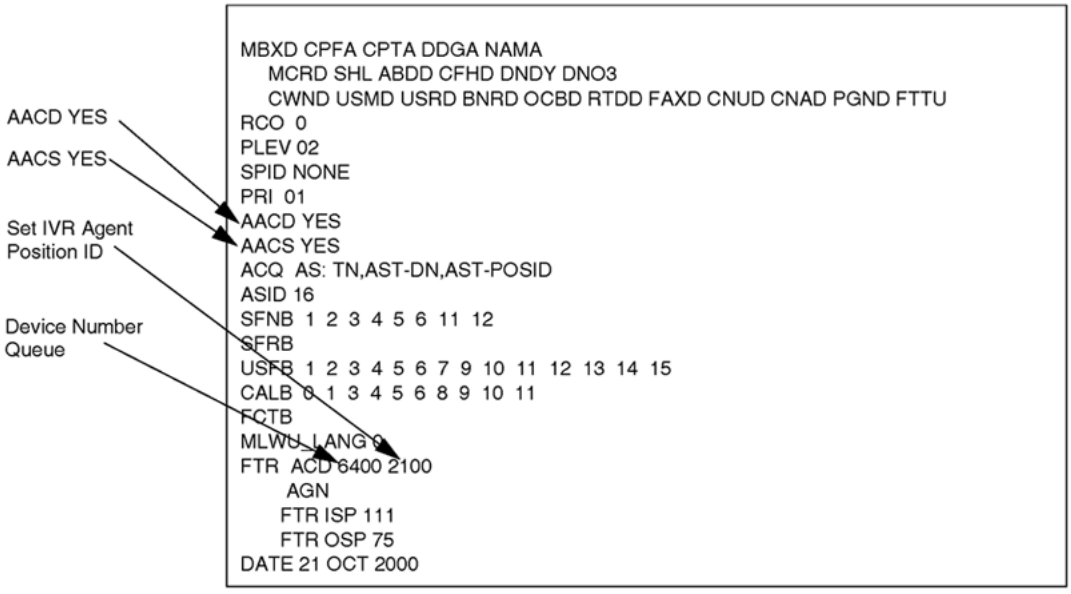


Figure 2: IVR Port 2000 Configuration Examples (M1/CS 1000, LD 10)



Configuration of CDN 6702 for the CCMS (LD 23)

The following table describes the configuration of the CDN 6702 for the CCMS (LD 23)

Configuration Setting	Explanation
CDN 6702	The CDN value is set to 6702 (see Figure 3: CDN 6702 Configuration Example for the IVR Port (LD 23) on page 217 below). CSVAPI monitors calls arriving on this CDN to the CCMS.

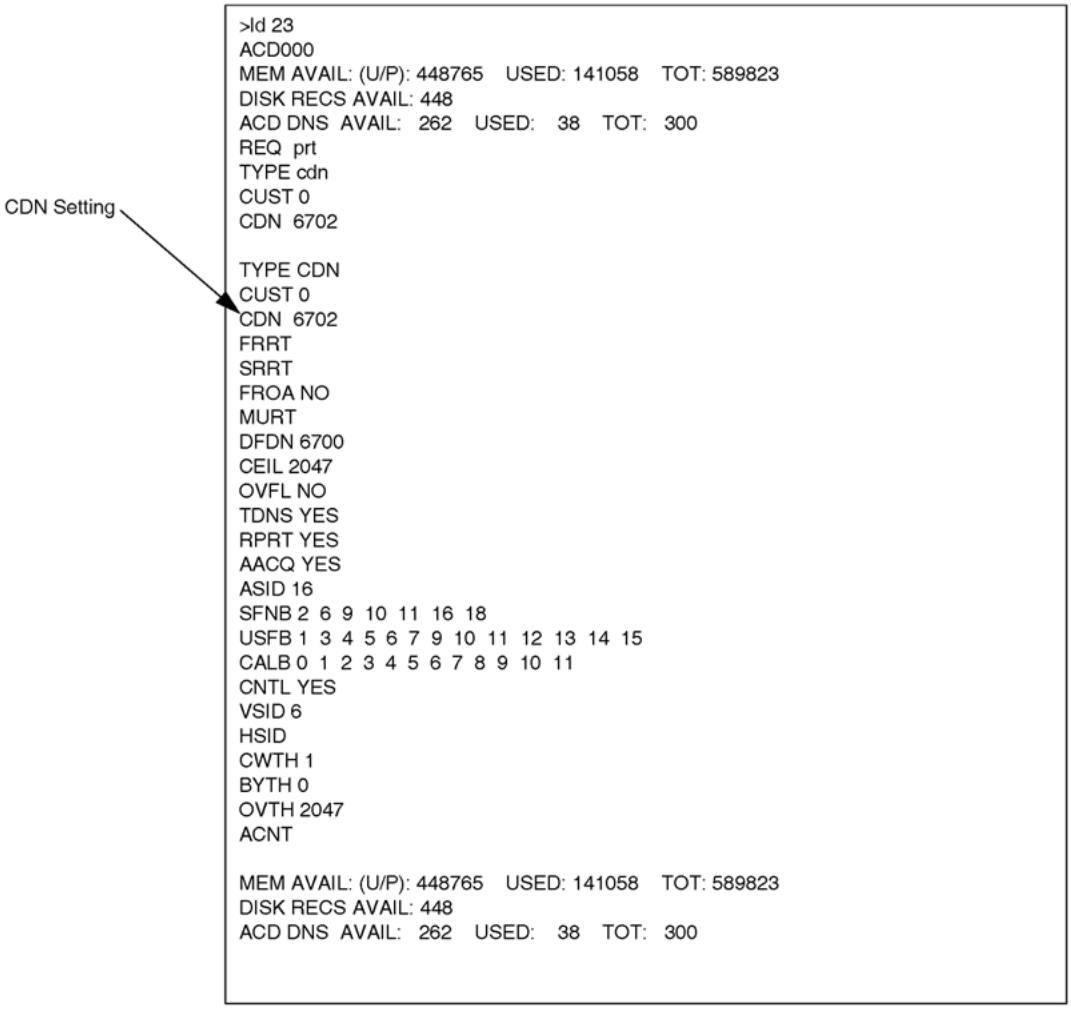


Figure 3: CDN 6702 Configuration Example for the IVR Port (LD 23)

Confirm Registration

The following tables describe how to confirm the registration.

Configuration Setting	Explanation
ASID ID	Identifies which IP address is communicating over the link, Figure 4: Configuration example for LD 48 on page 218
CCMS Server IP Address	Must be the CCMS Server IP address, Figure 4: Configuration example for LD 48 on page 218 If the IP address of another server appears the configuration, you must resolve the conflict.

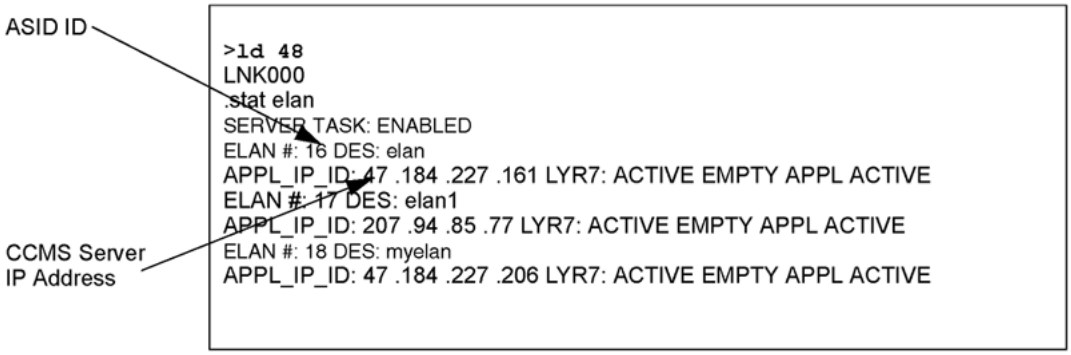
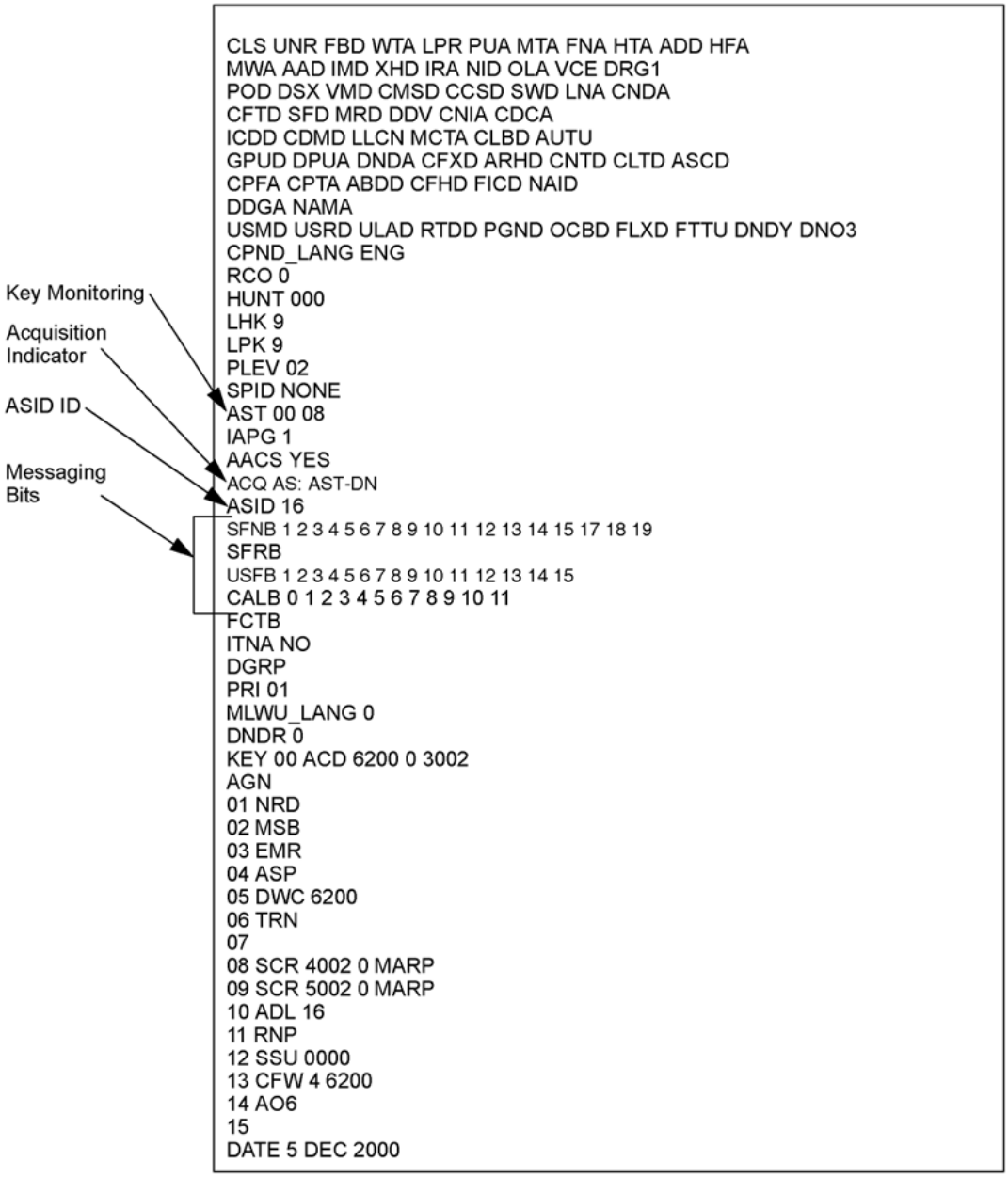


Figure 4: Configuration example for LD 48

Configuration Setting	Explanation
Key Monitoring	Indicates the phone keys to be monitored, Figure 5: LD 11 Sample on page 219 In this example key 0 and key 8 are monitored.
Acquisition Indicator AS: AST-DN	Indicates that the AST-DN has been acquired, Figure 5: LD 11 Sample on page 219
ASID ID	Identifies which IP address is communicating over the link, Figure 5: LD 11 Sample on page 219
Messaging Bits	Identifies that the MLSM services have been acquired through the CCMS and that CCMS has acquired the phone, Figure 5: LD 11 Sample on page 219

```
>ld 11
SL1000
MARP NOT ACTIVATED

MEM AVAIL: (U/P): 435031 USED: 154792 TOT: 589823
SCH5066

TNS AVAIL: 136 USED: 164 TOT: 300
ACD AGENTS AVAIL: 175 USED: 125 TOT: 300
AST AVAIL: 184 USED: 116 TOT: 300

REQ: prt
TYPE: tnb

MARP NOT ACTIVATED

TN 1 0 0 2
DATE
PAGE
DES

DES ACD
TN 001 0 00 02
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN
TGAR 0
LDN NO
NCOS 0
SGRP 0
RNPG 99
SCI 0
SSU
LNRS 16
XLST
```

Figure 5: LD 11 Sample


Key Monitoring
Acquisition Indicator
ASID ID
Messaging Bits
CLS UNR FBD WTA LPR PUA MTA FNA HTA ADD HFA
MWA AAD IMD XHD IRA NID OLA VCE DRG1
POD DSX VMD CMSD CCSD SWD LNA CNDA
CFTD SFD MRD DDV CNIA CDCA
ICDD CDMD LLCN MCTA CLBD AUTU
GPUD DPUA DNDA CFXD ARHD CNTD CLTD ASCD
CPFA CPTA ABDD CFHD FICD NAID
DDGA NAMA
USMD USRD ULAD RTDD PGND OCBD FLXD FTTU DNDY DNO3
CPND_LANG ENG
RCO 0
HUNT 000
LHK 9
LPK 9
PLEV 02
SPID NONE
AST 00 08
IAPG 1
AACS YES
ACQ AS: AST-DN
ASID 16
SFNB 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 17 18 19
SFRB
USFB 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
CALB 0 1 2 3 4 5 6 7 8 9 10 11
FCTB
ITNA NO
DGRP
PRI 01
MLWU_LANG 0
DNDR 0
KEY 00 ACD 6200 0 3002
AGN
01 NRD
02 MSB
03 EMR
04 ASP
05 DWC 6200
06 TRN
07
08 SCR 4002 0 MARP
09 SCR 5002 0 MARP
10 ADL 16
11 RNP
12 SSU 0000
13 CFW 4 6200
14 AO6
15
DATE 5 DEC 2000

Chapter 12: Avaya M1/CS 1000-CCMS Configuration

Contact Center Documentation

To configure the Avaya Meridian 1 and Avaya Communication Server 1000 switches with the Contact Center Manager Server, refer to the documentation on http://support.avaya.com, under “Downloads and Documents”. Enter product “Avaya Aura Contact Center” and download the following documents:

- For switch configuration and scripting, see the *Avaya Aura Contact Center Configuration — Avaya Communication Server 1000 Integration* document.
- For server administration, see the *Avaya Aura Contact Center Administration–Client Administration* document.

Chapter 13: TAPI Sample Configuration

Start the Log File

To start the log file, perform the following procedure.

Open the Windows Start menu and choose Run > Programs > Avaya Contact Center Manager Server TAPI Service Provider for M1 and Logger.

The overflow.log is in C:\m1server\Tools

Call Flow

The following example shows call flow logging.

1. A call is sent to the IVR port 2107.
2. A Call Offered message is sent to the TAPI Server.

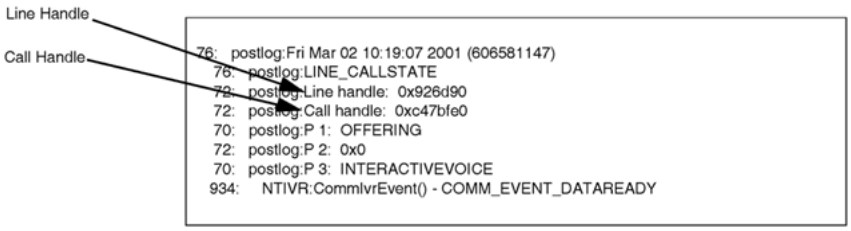


Figure 6: CCMS TAPI Server Received Call Offered message on the IVR Port 2107

3. The IVR application answers the call.
4. The IVR application sends call data to cstapils and cstapils sends the IVR call data to cstapi server. This is shown in the following logging example.

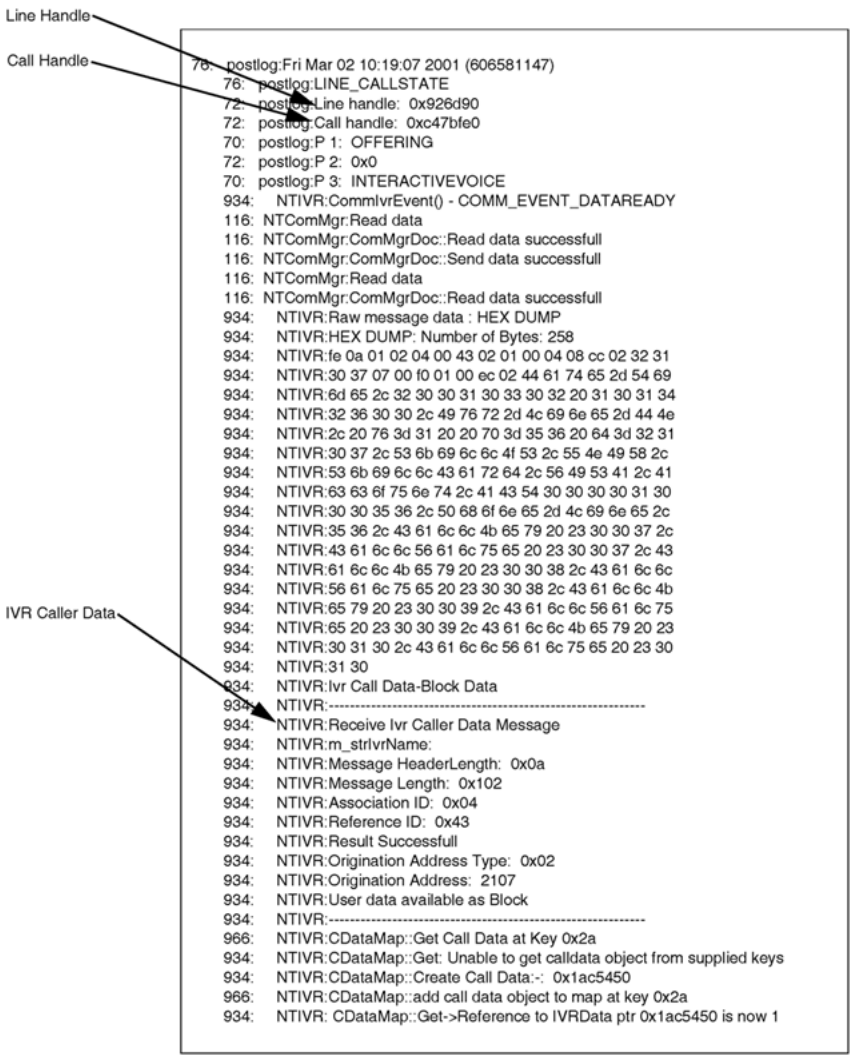


Figure 7: cstapils Send IVR Caller Data message to CCMS TAPI Server

5. The response is sent to cstapils.
6. The response from CCMS TAPI Server is shown on the following page.

```
76:  postlog:----------------------------------------------------------------
  76:  postlog:----------------------------------------------------------------
  76:  postlog:Fri Mar 02 10:19:08 2001 (606581157)
  76:  postlog:LINE_CALLINFO
  72:  postlog:Line handle:  0x926d90
  72:  postlog:Call handle:  0xc47bfe0
  70:  postlog:P 1:  CALLID+ORIGIN+REASON+CALLERID+CALLEDID
  72:  postlog:P 2:  0x0
  72:  postlog:P 3:  0x0
  76:  postlog:Fri Mar 02 10:19:07 2001 (606581147)
  76:  postlog:TSPI_lineGetCallAddressID
  72:  postlog:Call:  0x1ec55e0
  69:  postlog:Addr ID ptr:  c47c000
  72:  postlog:Address ID:  0x0
  76:  postlog:OK
  76:  postlog:IVREvent:IVR_MSG_CALLER_DATA
  76:  postlog:----------------------------------------------------------------

76:  postlog:----------------------------------------------------------------
  76:  postlog:Fri Mar 02 10:19:11 2001 (606584161)
  76:  postlog:LINE_CALLSTATE
  72:  postlog:Line handle:  0x926d90
  72:  postlog:Call handle:  0xc47bfe0
  70:  postlog:P 1:  CONNECTED
  72:  postlog:P 2:  0x0
  70:  postlog:P 3:  INTERACTIVEVOICE


  76:  postlog:Fri Mar 02 10:19:11 2001 (606584161)
  76:  postlog:LINE_CALLINFO
  72:  postlog:Line handle:  0x926d90
  72:  postlog:Call handle:  0xc47bfe0
  70:  postlog:P 1:  CONNECTEDID
  72:  postlog:P 2:  0x0
  72:  postlog:P 3:  0x0
  76:  postlog:CML_Socket::OnReceive called
  76:  postlog:Parsing C4OctetIE object...
```

Figure 8: Call Connect Message from overflow.log for the same call handle

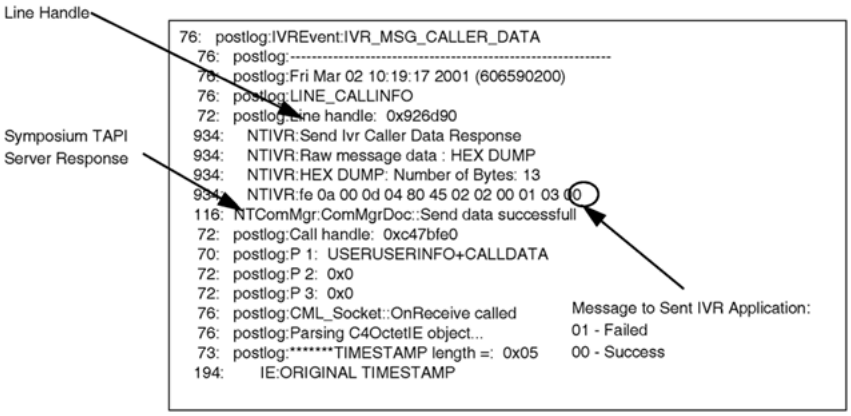


Figure 9: CCMS TAPI Server Send Response to cstapils

The IVR application receives a ctifail error message if the last two digits of the indicated line are 01. One possible reason for this problem is that cstapils sent the IVR Caller Data message before the TAPI server (IVR.DLL) receives the Call Offered message (Figure 6: CCMS TAPI Server Received Call Offered message on the IVR Port 2107 on page 223). The failed message results from receiving the

IVR Caller Data message before the CCMS TAPI Server creates a valid Call Handle for the position ID of the IVR.

To remedy this, delay the IVR application request. Avaya recommends a 7-second delay from when the IVR first answers the call.

Symposium TAPI Server Menus

The following Symposium TAPI Server menus are provided as a reference.

Configuring Menu

Access the Symposium TAPI Server configuration program from the Windows Start menu as shown in the following example.

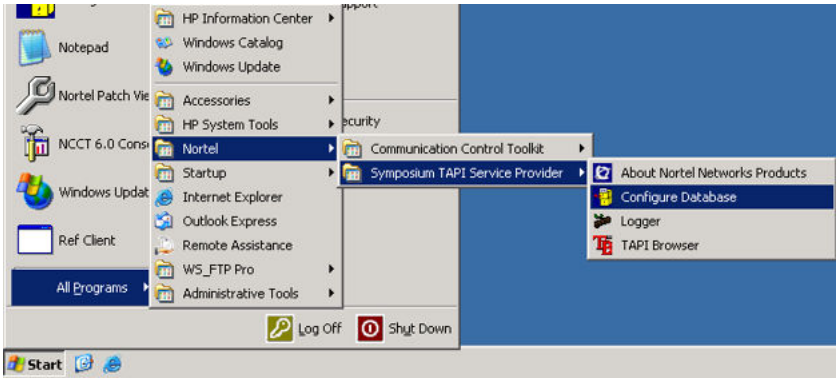
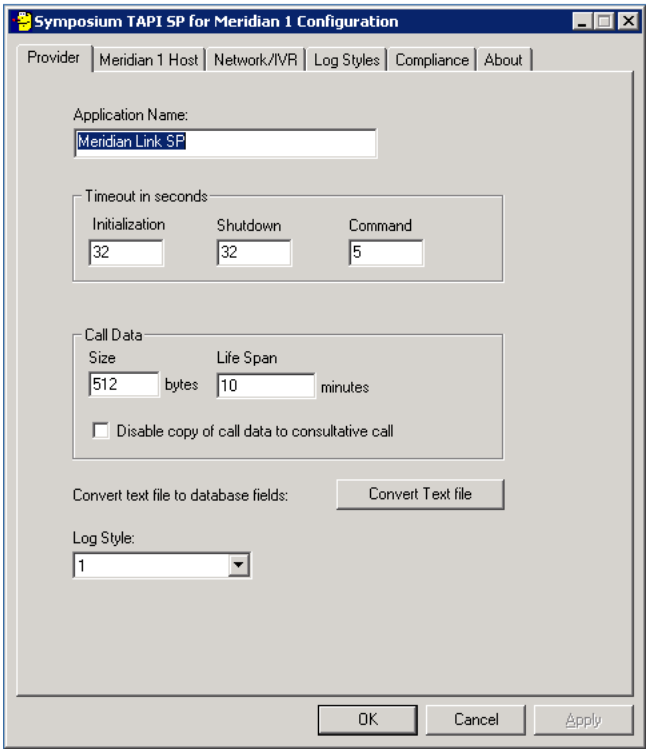


Figure 10: Symposium TAPI Server configuration program location (from the NT Start Menu).

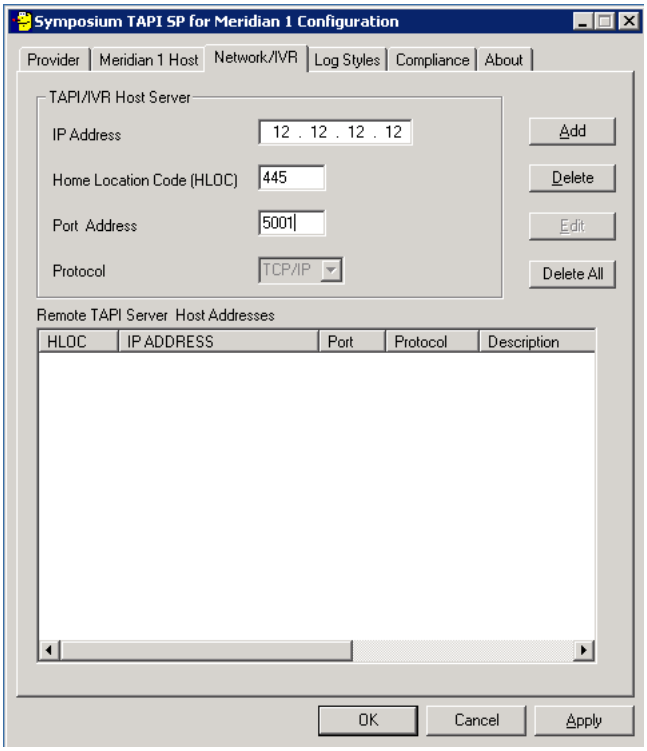
M1 Configuration Window



IVR Configuration Window

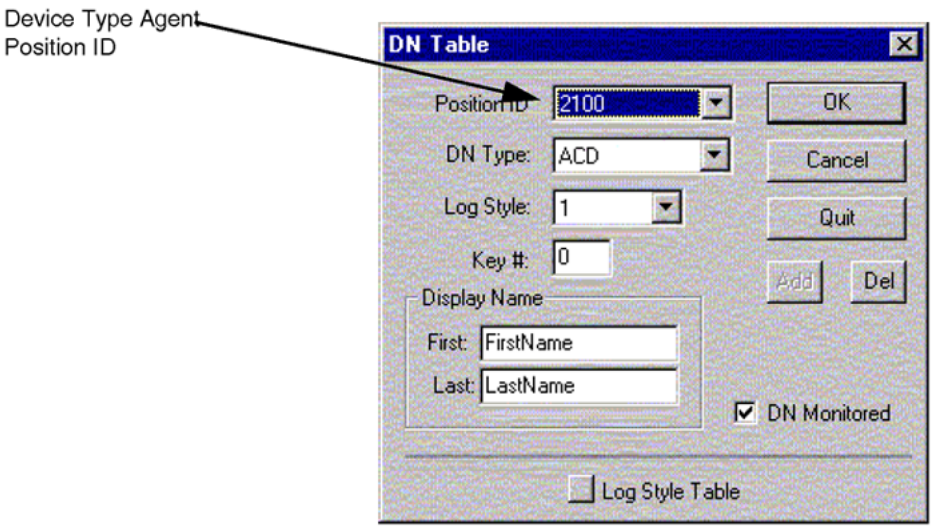
Use the IVR Configuration window to input information CSTAPILS requires for the Symposium TAPI Server.

See the Communication Control Toolkit Installation and Maintenance Guide for detailed information.



DN Table Window

The DN Table window contains the device type agent position ID.



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