



Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series

December 14, 2005



Note

This document was called *Cisco Catalyst 6500 Series and Cisco 7600 Series CMM Voice Features for Cisco IOS Release 12.3(8)XY*.

Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series supports interconnectivity between PSTN and traditional PBX systems and IP communication networks and VoIP networks; additionally, it supports media services, such as MTP, transcoding, and ad-hoc conferences.

Benefits of this feature include the following:

- Interoperability between IP communication networks and PSTN
- Audio conference and transcoding services as an integrated component of the converged network
- Simple Network Management Protocol (SNMP) management capabilities

This document contains a list of voice features introduced in various Cisco IOS releases that are now supported on the Cisco Catalyst 6500 series and Cisco 7600 series Communication Media Module (CMM) and identifies the required port adapters to implement these voice features. Configuration information is provided in either referenced Cisco IOS documentation or CMM-specific configuration information contained in this document. Use this document with the release notes for your Cisco IOS release, which enables you to determine the minimum software required to implement these features.



Note

In this document, the Cisco Catalyst 6500 series and Cisco 7600 series Communication Media Module is referred to as CMM.

For hardware specifications, see the [Catalyst 6500 Series and Cisco 7600 Series CMM Installation and Verification Note](#).



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For software specifications, including minimum software recommendations, see the release notes for your Cisco IOS release:

- [Release Notes for the Cisco Catalyst 6500 Series and the Cisco 7600 Series CMM](#) (special releases)
- [Release Notes for Cisco IOS Release 12.3T](#)
- [Release Notes for Cisco IOS Release 12.4](#)
- [Release Notes for Cisco IOS Release 12.4T](#)

Feature History for Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series

Release	Modification
Cisco IOS Release 12.2(13)ZP	This feature was introduced.
Cisco IOS Release 12.3(8)XY	This feature was integrated into Cisco IOS Release 12.3(8)XY and support was added for additional voice features. For supported feature information, see the “Supported Features” section on page 8 and “Supported Feature Sets” section on page 14 .
Cisco IOS Release 12.3(14)T	This feature was integrated into Cisco IOS Release 12.3(14)T and support was added for additional voice features. For supported feature information, see the “Supported Features” section on page 8 and “Supported Feature Sets” section on page 14 . This document’s title was change from <i>Cisco Catalyst 6500 Series and Cisco 7600 Series CMM Voice Features for Cisco IOS Release 12.3(8)XY</i> to <i>Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series</i> .
Cisco IOS Release 12.4(3)	This feature was integrated into Cisco IOS Release 12.4(3) and support was added for additional voice features. For supported feature information, see the “Supported Features” section on page 8 and “Supported Feature Sets” section on page 14 .
Cisco IOS Release 12.4(4)T	This feature was integrated into Cisco IOS Release 12.4(4)T and support was added for additional voice features. For supported feature information, see the “Supported Features” section on page 8 and “Supported Feature Sets” section on page 14 .

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

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- [Prerequisites for Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series](#), page 3
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Prerequisites for Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series

- Ensure that you have installed the appropriate CMM port adapter that is specified in [Table 2 on page 8](#) for the voice feature that you want to implement.
- Ensure that Cisco CallManager 4.0 or a later release is running to interoperate with the following Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series:
 - Malicious Call Identification (MCID)
 - Media Processor Auto-Configuration
 - Multi-Level Precedence and Preemption (MLPP)
 - RFC 2833 Dual Tone Multifrequency (DTMF) Relay over Media Termination Point (MTP)
 - Q Signaling (QSIG)



Note

All other Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series interoperate with Cisco CallManager 3.2 or later releases.

- Ensure that your system is running the minimum software that is specified in the release notes for your Cisco IOS release:
 - [Release Notes for Cisco Catalyst 6500 Series and the Cisco 7600 Series Communication Media Module](#) (special releases)
 - [Release Notes for Cisco IOS Release 12.3T](#)
 - [Release Notes for Cisco IOS Release 12.4](#)
 - [Release Notes for Cisco IOS Release 12.4T](#)

Restrictions for Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series

CMM Configuration

- The CMM Gigabit Ethernet backplane interface can have one IP address and one MAC address.
- The CMM requires a static IP address. Obtaining an IP address through a Dynamic Host Configuration Protocol (DHCP) server is not supported.
- You must access and configure each CMM independently because the switch views each CMM as a separate network device.
- The CMM provides Layer 2 forwarding only; if a packet needs to be Layer 3 routed, the packet is forwarded. Therefore, you must enable ip routing and specify a static default route to the gateway.
- The recommended voice activity detection (VAD) setting for CMM is off.
- If you are running an earlier CMM Cisco IOS image and have WS-SVC-CMM-ACT modules installed, loading the Cisco IOS Release 12.3(8)XY3 image for the first time will change the Ethernet interfaces corresponding to the WS-SVC-CMM-ACT modules to FastEthernet interfaces with no IP address configured and in the shutdown state.



Note We recommend that you save and record the Ethernet interface configurations before you upgrade to Cisco IOS Release 12.3(8)XY3 and that you reconfigure the FastEthernet interface after the CMM is up and running.

CMM- Specific XML Files

If you do not have the CMM-specific XML files or do not want to install CMM-specific XML files, perform the following manual configuration tasks:



Note The problem requiring manual configuration in the absence of CMM-specific XML files has been resolved in the Cisco CallManager 3.2(2c)spF-rc3 support patch. If you load this patch, you do not need to perform the following configuration commands.

- Configure the **clock source line primary** and **clock source line secondary** under T1/E1 controllers as per your requirements. The secondary clock source is a backup for the primary clock source, and CMM supports secondary clock sources from 1 to 17. CMM must have **clock source line primary** and **clock source line secondary** configured to avoid any clock slips.
- The default configuration for CMM is “Cisco Fax Relay.” To run “Fax pass through calls,” supplement the default configuration with the following two commands: **mgcp modem pass through voip mode cisco** and **no ccm fax protocol cisco**.
- The default configuration for “echo cancel coverage” is set to 64 ms. This default can be changed as needed under **voice-port** configuration.
- The default configuration for “input gain” and “output attenuation” is set to 0 dB for T1 and E1 interfaces. This default can be changed as needed under **voice-port** configuration.
- The manual configuration is lost on a reload if you set CMM for a configuration download from Cisco CallManager. If you lose the configuration, you must reconfigure. To retain the manual configuration, disable the automatic configuration download from Cisco CallManager before reloading CMM.

Port Adapter Installation on the CMM

You cannot mix T1 port adapters with E1 port adapters.

Tcl Interactive Voice Response (IVR) 2.0 and Voice XML

For the Tcl IVR 2.0 and Voice XML feature, the CMM does not support the Configuring VoiceXML Voice Store and Forward option because of memory limitations.

Information About Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series

To configure Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series, you should understand the following concepts:

- [CMM Overview, page 5](#)
- [Feature Design of Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series, page 6](#)
- [CMM Operational Modes, page 7](#)
- [Supported Features, page 8](#)
- [Supported Feature Sets, page 14](#)

CMM Overview

The CMM acts as the VoIP gateway and media services module by using H.323, Media Gateway Control Protocol (MGCP), and SIP protocols with Cisco CallManager and other call agents. The CMM can support single or multiple Cisco CallManager servers in an IP communication network.

These VoIP gateway and media services features are provided through the four different types of CMM port adapters, as shown in [Table 1](#).

Table 1 *CMM Port Adapters*

CMM Port Adapters	Description
WS-SVC-CMM-6T1 WS-SVC-CMM-6E1	The 6-port T1 and E1 port adapters have onboard digital signal processor (DSP) resources that allow you to connect the interfaces to the public switched telephone network (PSTN) or private branch exchanges (PBXs) through T1 Channel Associated Signaling (CAS)/E1 R2 or T1/E1 ISDN Primary Rate Interface (PRI). The DSP resources on the port adapters provide packetization, echo cancellation, fax relay, tone detection and generation, concealment, and jitter buffers.

Table 1 CMM Port Adapters

CMM Port Adapters	Description
WS-SVC-CMM-24FXS	The 24-port FXS port adapter has onboard DSP resources that allow the FXS interfaces to emulate the central office (CO) or PBX analog trunk lines by providing service to analog phones and fax machines, which behave as if connected to a standard CO or PBX line.
WS-SVC-CMM-ACT	The ACT port adapter, also referred to as the media card, has DSP resources for conferencing, transcoding, and media termination point (MTP) services. A CMM with an ACT port adapter supports a single conference with up to 128 participants. A single ACT port adapter supports up to 128 audio conference ports, which can be distributed among different conferences of two or more parties.

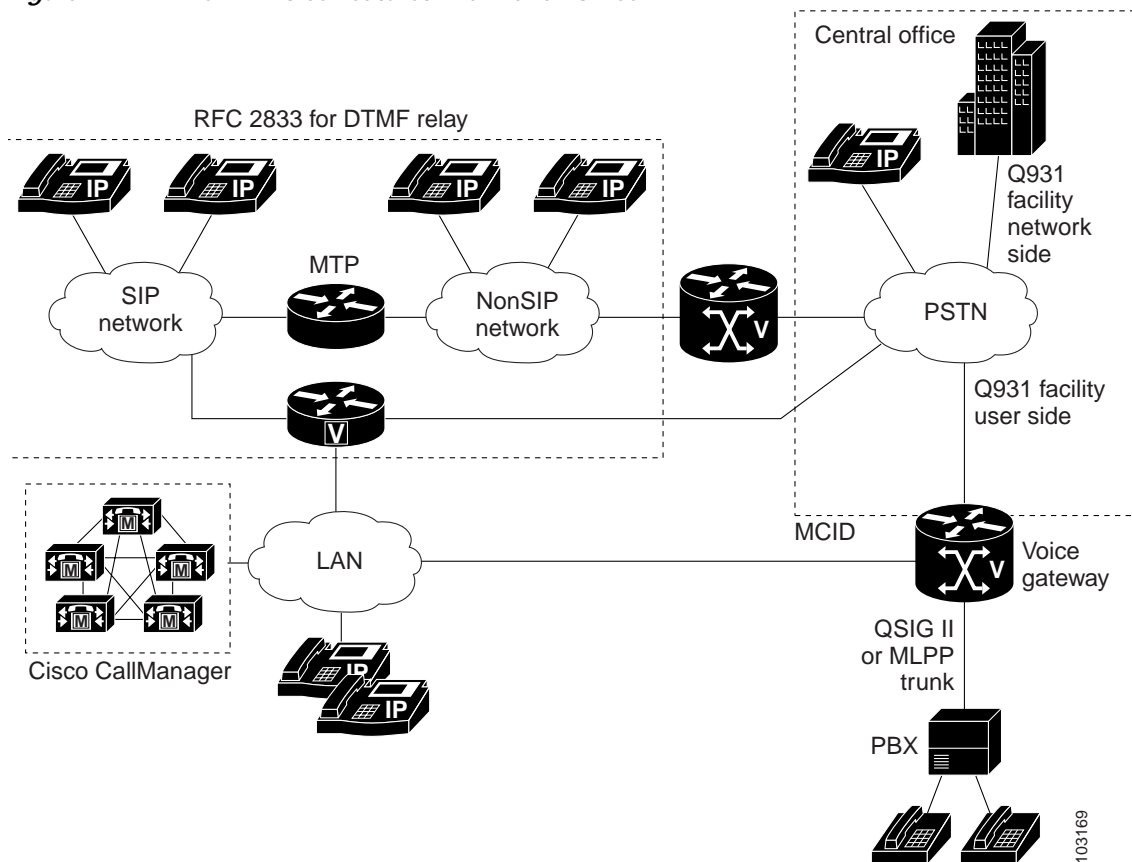
You can install CMM port adapters in the following ways:

- You can install up to four port adapters on a single CMM base module. Slot 4 is reserved for the WS-SVC-CMM-ACT port adapter.
- You cannot install WS-SVC-CMM-6T1 and WS-SVC-CMM-6E1 port adapters on the same base CMM module.
- You can install up to four WS-SVC-CMM-ACT port adapters on the CMM base module.
- You can install any other combination of WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, WS-SVC-CMM-24FXS, and WS-SVC-CMM-ACT port adapters.

Feature Design of Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series

The CMM provides enhanced voice gateway and media services functions. [Figure 1 on page 6](#) shows a typical topology where CMM voice features are deployed to provide enhanced interoperability between PBX telephony networks, VoIP gateways, and Cisco CallManager-supported enterprise telephony features and functions.

Figure 1 CMM Voice Features in a Branch Office



Cisco implements supported voice features by configuring digital signal processor (DSP) resources on the CMM media card. For more information about CMM configuration, see the [“How to Configure Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series”](#) section on page 17. For information about supported features, see the [“Supported Features”](#) section on page 8.

CMM Operational Modes

The CMM operates in MGCP mode, Cisco H.323, or SIP mode. Information about the CMM operational modes is provided in the following sections:

- [H.323 Mode, page 7](#)
- [MGCP Mode, page 7](#)
- [SIP Mode, page 7](#)

H.323 Mode



Note

This feature was introduced in Cisco IOS Release 12.3(8)XY.

Compared to MGCP, H.323 requires more configuration on the gateway because the gateway must maintain the dial plan and route pattern. The gateway must have enough information to direct calls to the correct endpoints, which may be via a port adaptor (T1/E1 and FXS) and H.323-capable devices.

Configuring H.323 mode on the CMM is similar to configuring H.323 on other Cisco IOS voice gateways. To configure the CMM by using H.323 mode, see the following documentation:

- [Cisco IOS H.323 Configuration Guide](#)
- Tech Note: [Configuring a Cisco IOS H.323 Gateway for Use with Cisco CallManager](#)

For H.323 configuration examples, see the “[Configuration Examples for Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series](#)” section on page 45.

MGCP Mode

In MGCP mode, also referred to as gateway mode, the CMM registers explicitly with Cisco CallManager, one registration for every gateway type. In MGCP mode, you do not need to configure the dial peers, voice ports, controllers, and so on. Cisco CallManager is aware of the configuration and does the routing to endpoints.

Configuring MGCP mode on the CMM is similar to configuring MGCP on other Cisco IOS voice gateways. To configure the CMM by using MGCP mode, see the following documentation:

- [Cisco IOS MGCP and Related Protocols Configuration Guide](#)
- Tech Note: [Configuring the Cisco IOS MGCP Gateway](#)

For MGCP configuration examples, see the “[Configuration Examples for Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series](#)” section on page 45.

SIP Mode



Note

This feature was introduced in Cisco IOS Release 12.3(14)T.

SIP signaling interfaces connect Cisco CallManager registered devices and SIP networks that are served by a SIP proxy server. Multiple logical SIP signaling interfaces can be configured in Cisco CallManager and associated with route groups, route lists, and route patterns.

Configuring SIP mode on the CMM is similar to configuring SIP on other Cisco IOS voice gateways. To configure the CMM by using SIP mode, see the following documentation:

- [Cisco IOS SIP Configuration Guide](#)
- [Cisco SIP Proxy Server documentation](#)

For SIP configuration examples, see the [Cisco IOS SIP Configuration Guide](#).

Supported Features

Table 2 lists supported voice features for the CMM by current release first and in alphabetical order and provides links either to online documentation for these features or to CMM-specific configuration information contained in this document. Features introduced in a particular release are available in that release and subsequent releases.

Table 2 Supported Voice Features for the CMM

Feature	Required Hardware	Feature Description	Feature Documentation
Introduced in Cisco IOS Release 12.4(4)T			
Tcl Interactive Voice Response (IVR) 2.0 and Voice XML	WS-SVC-CMM-ACT	Tcl and VoiceXML applications on the Cisco gateway provide Interactive Voice Response (IVR) features and call control functionality such as call forwarding, conference calling, and voice mail.	Cisco IOS Tcl IVR and VoiceXML Application Guide
Introduced in Cisco IOS Release 12.4(3)			
Non-Facility Associated Signaling (NFAS) for H.323/SIP	WS-SVC-CMM-T1	Allows a single D channel to control multiple ISDN PRI interfaces.	Cisco IOS ISDN Voice Configuration Guide , Release 12.3, “ Implementing NFAS ”
Secure Real-Time Transport Protocol (SRTP)/Secure SRST (SSRST) for MGCP	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Provides voice security features that include authentication, integrity, and encryption of voice media and related call control signaling. Enables SRST security features such as authentication, integrity, and media encryption.	<ul style="list-style-type: none"> • Media and Signaling Authentication and Encryption Feature for Cisco IOS MGCP Gateways • Cisco IOS SRST Version 3.3 System Administrator Guide, “Setting Up Secure SRST”
Introduced in Cisco IOS Release 12.3(14)T			
Cisco SIP Proxy Server with SIP Survivable Remote Site Telephony (SRST)	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Provides backup to an external SIP proxy server by providing basic registrar and redirect services. The SIP SRST device also provides PSTN gateway access for placing and receiving PSTN calls.	<ul style="list-style-type: none"> • SIP Survivable Remote Site Telephony • Cisco IOS SIP Configuration Guide • Session Initiation Protocol Gateway Call Flows, “Troubleshooting Tips for Call Flow Scenarios: SIP Call Using RFC2833 for DTMF-Relay Output from GW1 Side” • Cisco SIP Proxy Server documentation
Network Specific Facilities (NSF) for Megacom and SDN	WS-SVC-CMM-6T1	Supports the use of the ISDN NSF information element in the route pattern, enabling facilities or services to be invoked on a call-by-call basis.	Cisco IOS Dial Technologies Configuration Guide , Release 12.3, “ Configuring NSF Call-by-Call Support ”

Table 2 *Supported Voice Features for the CMM (continued)*

Feature	Required Hardware	Feature Description	Feature Documentation
Radius with Voice Authentication, Authorization, and Accounting (AAA)	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Enables the gatekeeper to attempt to use the registered aliases along with a password and to complete an authentication transaction to a RADIUS server.	<i>Cisco IOS H.323 Configuration Guide, "Configuring AAA and RADIUS"</i>
Transparent Common Channel Signaling (T-CCS) with G.clear Codec	WS-SVC-CMM-6T1 or WS-SVC-CMM-6E1	Enables interoperability with PBXs that use T-CCS.	<i>Configuring T-CCS for a Clear-Channel Codec</i>
Introduced in Cisco IOS Release 12.3(8)XY			
Cisco Survivable Remote Site Telephony (SRST)	WS-SVC-CMM-6T1 or WS-SVC-CMM-6E1	Enables routers to provide call-handling support for Cisco IP phones when connections to remote primary, secondary, or tertiary Cisco CallManager installations are lost or when the WAN connection is down.	<i>Cisco IOS SRST Version 3.2 Administrator Guide</i>
Dual Tone Multifrequency (DTMF) Relay over Media Termination Point (MTP)	WS-SVC-CMM-6T1 or WS-SVC-CMM-6E1	Provides in-band DTMF Relay over MTP; supports event-processing capability defined in RFC 2833 to enable DTMF relay communication between Session Initiation Protocol (SIP) devices and non-SIP endpoints.	<i>Cisco CallManager and Cisco IOS Interoperability, "Configuring Out-of-Band to In-Band DTMF Relay"</i>
E1 R2 Signaling	WS-SVC-CMM-6E1	Supports E1 R2 signaling.	<i>Cisco IOS Dial Technologies Configuration Guide, Release 12.3, "Configuring E1 R2 Signaling"</i>
Enhanced ITU-T G.168 Echo Cancellation	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Provides elimination of echoes in the telephony network. The echo canceller reduces the level of echoes that leak from the Rx path into the Tx path, that is, the sound of the speaker's own voice reverberating while speaking.	<i>Voice Port Configuration, "Configuring Echo Cancellation"</i>
Facility Data Link (FDL) Messaging	WS-SVC-CMM-6T1	Allows you to set the FDL exchange standard for CSU controllers or for a T1 interface that uses extended super frame (ESF) framing format.	<i>"Configuring Facility Data Link Messaging on the CMM" section on page 36</i>
FXS Signaling	WS-SVC-CMM-24FXS	Supports FXS Signaling.	<i>"Configuring FXS Signaling on the CMM" section on page 37</i>

Table 2 *Supported Voice Features for the CMM (continued)*

Feature	Required Hardware	Feature Description	Feature Documentation
Globalized Cadence and Tone for Cisco IOS Gateways	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Provides cadences and tones preconfigured for the user's locale, eliminating a possible source of configuration mismatches between Cisco IOS gateways and Cisco CallManager.	<i>Cisco CallManager and Cisco IOS Interoperability</i> , " Configuring Tone Download to MGCP Gateways "
H.323 Gatekeeper Registration	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Supports Cisco IOS H.323 gatekeeper registration.	<i>Cisco IOS H.323 Configuration Guide</i> , " Configuring H.323 Gatekeepers and Proxies "
Higher Density MTP Ports	WS-SVC-CMM-ACT	Provides increased transcoder port density to support additional MTP sessions. This feature provides the following media support for transcoding and conferencing: <ul style="list-style-type: none"> • G.711u-law and A-law • Packetization support 10, 20, 30 ms This feature supports the following number of ports and MTP sessions: <ul style="list-style-type: none"> • Per Ad-Hoc Conferencing and Transcoding Port Adapter—512 ports, 256 MTP sessions • Per CMM—2048 ports, 1024 MTP 	—
Malicious Call Identification	WS-SVC-CMM-6T1 (H.323 mode), WS-SVC-CMM-6E1 (H.323 and MGCP mode), or WS-SVC-CMM-24FXS (in H.323 mode)	Enables the Cisco IOS voice gateway to interoperate with Cisco CallManager 4.0 to support event notification that a malicious call is in progress.	<i>Cisco CallManager and Cisco IOS Interoperability</i> , " Configuring MCID for Cisco IOS Voice Gateways "
Media Processor Auto-Configuration	WS-SVC-CMM-ACT	Supports centralized media processor configuration through Cisco CallManager.	" Configuring Media Processor Auto-Configuration " section on page 30

Table 2 Supported Voice Features for the CMM (continued)

Feature	Required Hardware	Feature Description	Feature Documentation
MGCP Gateway Fallback	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Improves the reliability of MGCP branch networks and works with SRST. Note The Media Gateway Control Protocol (MGCP) gateway supports only the basic call during fallback; supplementary features such as hold, transfer, park, and conference are not supported during fallback.	<i>Cisco CallManager and Cisco IOS Interoperability</i> , “ Configuring Cisco CallManager Switchover and MGCP Gateway Fallback ”
Multilevel Precedence and Preemption (MLPP)	WS-SVC-CMM-6T1 (with T1 CAS wink start signaling and T1 PRI with MGCP only)	Enables authorized users to preempt lower -priority phone calls to targeted stations or to fully subscribed shared resources, such as TDM trunks or conference bridges. MLPP enables the voice gateway to interoperate with other MLPP-capable networks for call preemption and precedence.	<i>Cisco CallManager and Cisco IOS Interoperability</i> , “ Configuring MLPP Service on Cisco MGCP Gateways ”
NSF Enhancement	WS-SVC-CMM-6T1 (MGCP mode)	Used to request a particular service from the network or to provide an indication of the service that is being provided.	<ul style="list-style-type: none"> • <i>Cisco IOS Dial Technologies Configuration Guide</i>, Release 12.2, “Configuring NSF Call-by-Call Support” • <i>Cisco CallManager and Cisco IOS Interoperability</i>, “Configuring MGCP Gateway Support for Cisco CallManager Network Specific Facilities”
Q Signaling (QSIG) (Cisco CallManager)	WS-SVC-CMM-6T1 or WS-SVC-CMM-6E1	Supports the following additional supplementary services for interoperability with PBXs: <ul style="list-style-type: none"> • Call diversion (forwarding) • Call transfer • Identification services • Message waiting indication services 	<i>Cisco CallManager and Cisco IOS Interoperability</i> , “ Configuring QSIG Supplementary Features for Cisco IOS Voice Gateways ”

Table 2 **Supported Voice Features for the CMM (continued)**

Feature	Required Hardware	Feature Description	Feature Documentation
QSIG Backhaul (Cisco CallManager)	WS-SVC-CMM-6T1 or WS-SVC-CMM-6E1	PRI Q.931 signaling backhaul is the transport of PRI signaling (Q.931 and above layers) between a media gateway (such as a Cisco access server, router, or concentrator) and a media gateway controller.	<i>Cisco CallManager and Cisco IOS Interoperability</i> , “ Configuring QSIG Supplementary Features for Cisco IOS Voice Gateways ”
Simple Network Management Protocol (SNMP) Version 3 Support for MIBs	WS-SVC-CMM	<p>Provides SNMP Version 3 MIB support. SNMP enables network administrators to manage network performance, find and solve network problems, and plan for network growth.</p> <p>SNMP traps enable an agent to notify the management station of significant events by way of an unsolicited SNMP message. This feature supports the following SNMP traps:</p> <ul style="list-style-type: none"> • <i>config</i>—Enables SNMP configuration traps • <i>dial</i>—Enables SNMP dial control traps • <i>dnis</i>—Enables SNMP dialed number identification service (DNIS) traps • <i>dsp</i>—Enables SNMP digital signal processor (DSP) traps • <i>entity</i>—Enables SNMP entity traps • <i>envmon</i>—Enables SNMP environmental monitor traps • <i>hsrp</i>—Enables SNMP HSRP traps • <i>ipmulticast</i>—Enables SNMP ipmulticast traps • <i>isdn</i>—Enables SNMP isdn traps • <i>syslog</i>—Enables SNMP syslog traps • <i>tty</i>—Enables TCP connection traps • <i>xgcp</i>—Enables XGCP protocol traps 	<p>For a list of supported MIBs, see the “MIBs” section on page 84.</p> <p>For general information about SNMPv3, see <i>Catalyst 5000 Family Software Configuration Guide (6.3 and 6.4)</i>: “Understanding SNMPv3.”</p>

Table 2 Supported Voice Features for the CMM (continued)

Feature	Required Hardware	Feature Description	Feature Documentation
T1 CAS EANA for Feature Group D	WS-SVC-CMM-6T1	Supports T1 CAS EANA.	<i>Cisco IOS ISDN Voice Configuration Guide</i> , Release 12.3, “Implementing T1 CAS”
T.38 Fax Relay	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Enables real-time fax transmission, allowing two fax machines to communicate as if there is a direct phone line between the two. T.38 fax relay is supported only for H.323 signaling.	<i>Cisco Fax Services over IP Application Guide</i> , “Configuring T.38 Fax Relay”
Transcoding and Conferencing	WS-SVC-CMM-ACT	Enables audio conferencing and transcoding functions.	“Configuring Transcoding and Conferencing on the CMM” section on page 22
Introduced in Cisco IOS Release 12.2(13)ZP			
Cisco Fax Relay	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Passes faxes through a VoIP network. Cisco fax relay is the default fax relay type on Cisco voice gateways.	<i>Cisco Fax Services over IP Application Guide</i> , “Configuring Cisco Fax Relay”
Fax Pass-through	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Takes place when incoming T.30 fax data is not demodulated or compressed for its transit through the packet network. The two endpoints (fax machines or modems) communicate directly to each other over a transparent IP connection.	<i>Cisco Fax Services over IP Application Guide</i> , “Configuring Fax Pass-Through”
Modem Passthrough	WS-SVC-CMM-6T1, WS-SVC-CMM-6E1, or WS-SVC-CMM-24FXS	Provides for the transport of modem signals through a packet network by using pulse code modulation (PCM)-encoded packets.	<i>Modem Support for VoIP</i> , “Modem Passthrough”
Music on Hold	WS-SVC-CMM-6T1 or WS-SVC-CMM-6E1	Enables you to subscribe to a music streaming service when you are using a Cisco IOS MGCP voice gateway.	<i>Cisco CallManager and Cisco IOS Interoperability</i> , “Configuring Multicast Music-on-Hold Support for Cisco CallManager”

Supported Feature Sets

The following tables list the supported feature sets by CMM port adapter:

- [Table 3 on page 15](#) lists alphabetically the supported features for the CMM T1 and E1 port adapters.
- [Table 4 on page 15](#) lists alphabetically the supported features for the CMM ad-hoc conferencing and transcoding (ACT) port adapter.
- [Table 5 on page 17](#) lists alphabetically the supported features for the FXS analog interface module.

Table 3 *T1 and E1 Port Adapters Supported Features*

WS-SVC-CMM-6T1 Port Adapter	WS-SVC-CMM-6E1 Port Adapter
FDL with T1 CAS/PRI for extended super frame (only) signaling.	—
Frame format—super framing (SF), extended super framing (ESF)	Frame format—with cyclic redundancy check 4 (CRC4)/no CRC4
H.323, MGCP, and SIP: Cisco Fax Relay Dual Tone Multi-Frequency (DTMF) Relay ¹ Fax Pass-through G711 codec (sampling size: 10, 20, and 30 ms), G729 codec mu-law and a-law (sampling size: 10, 20, 30, 40, 50, 60 ms) Modem Pass-through Music on Hold (unicast, multicast) QSIG backhaul with MGCP QSIG with SIP T1-CAS—Supports up to 18 T1 spans ² T1-CAS ear and mouth (E&M) Wink Start T1-CAS E&M Delay Dial T1-CAS E&M Immediate Start ³ T1-CAS FGD EANA T1-CAS FXS Loop Start T1-CAS FXO Loop Start T1-CAS FXS Ground Start T1-CAS FXO Ground Start T1-PRI—Supports up to 18 T1 spans ² T.38 fax relay	H.323, MGCP, and SIP: Cisco Fax Relay DTMF Relay E1-PRI—Supports up to 18 E1 spans ² E1 R2 signaling ¹ Fax Pass-through G711 codec mu-law and a-law (sampling size: 10, 20, and 30 ms) G729 codec (sampling size: 10, 20, 30, 40, 50, 60 ms) Modem Pass-through Music on Hold (unicast, multicast) QSIG backhaul with MGCP QSIG with H.323 QSIG with SIP T.38 fax relay
Line code—binary 8-zero substitution (B8ZS), alternate mark inversion (AMI)	Line code—high-density bipolar with three zeros (HDB3), AMI
MGCP gateway fallback	MGCP gateway fallback
Survivable Remote Site Telephony (SRST)	SRST

1. DTMF is supported; MF is not supported.

2. Supported with 30 ms or greater sampling size.

3. Supported with only H.323 and SIP.

Table 4 *Ad-Hoc Conferencing and Transcoding Port Adapter Supported Features*

WS-SVC-CMM-ACT Port Adapter	Restrictions
Fallback support for transcoding and ad-hoc conferences.	—
IP precedence bits, differentiated services code point (DSCP), and 802.1Q marking.	—
Media support for ad-hoc transcoding and conferencing	
Maximum channels for conference: 128	—
Maximum channels for transcoding: 128	Requires two channels per session.
Maximum channels for MTP: 512	Requires two channels per session.

Table 4 *Ad-Hoc Conferencing and Transcoding Port Adapter Supported Features*

WS-SVC-CMM-ACT Port Adapter	Restrictions
Maximum port adapters for CMM: 4	—
Maximum capacity for CMM: 512 conference channels, 512 transcode channels, or 2048 MTP channels	With MTP-only mode at G.711.
Largest conference size: 128 parties	—
G.723 codec	30 and 60 ms packetization
G.711 codec	10, 20, and 30 ms packetization
G.729 codec	10, 20, 30, 40, 50, and 60 ms packetization
Protocols: SCCP with Cisco CallManager	—
Maximum number of conferences: 64	With two-party MeetMe conference with Cisco CallManager (typical ad-hoc conference has three parties).
Media termination point (MTP) support.	—
Modem and fax support through MTP.	—
Performance: Each CMM with an ACT port adapter can support a single conference up to 128 participants. A single ACT port adapter can support up to 128 audio conference ports, which can be distributed between different conferences of two or more parties.	—
Registration: One registration entity per port adapter.	—
Speaker selection.	Three loudest speakers
Standalone transcoding without associated conference. Codecs and packetization intervals supported are the same as for conferencing.	—
Support for spanning conferences between digital signal processors (DSP) on the same port adapter.	—

Table 5 *FXS Analog Interface Module Features*

Digital Signal Processing Per Port	FXS Interface Features
Comfort noise generation	Address signaling formats: In-band DTMF
DTMF Relay	Cisco Fax Relay
Dual tone multifrequency (DTMF) detection	Distance: 300-ohms maximum loop
G.711 mu-law and a-law (10, 20, and 30 ms packetization), G.729 (10, 20, 30, 40, 50, and 60 ms), G.729A voice encoding	Fax Pass-through
Impedance (600 ohms), complex 1	FXS Caller ID Type: FSK CLID Bellcore Type 1
Line echo cancellation	H.323, MGCP, and SIP
Modem Pass-through	Ringing frequency: 25 Hz or 50 Hz
Music on Hold	Ringing tone: Programmable
Programmable analog gain, signaling timers	Signaling formats: loopstart and groundstart
Ring cadence is selectable in 12 different patterns and is programmable in a user-defined cadence	T.38 fax relay
Signaling formats: loopstart and groundstart	—
Silence suppression	—

How to Configure Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series



Note

You must access and configure each CMM independently because the switch views each CMM as a separate network device.

To configure Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series, perform the following procedures:

- [Configuring Voice Features on the CMM, page 18](#) (Required)
- [Configuring the CMM Media Card \(WS-SVC-CMM-ACT\), page 21](#) (Optional)
- [Configuring Transcoding and Conferencing on the CMM, page 22](#) (Optional)
- [Configuring Media Processor Auto-Configuration, page 30](#) (Optional)
- [Verifying and Troubleshooting the CMM Media Card \(WS-SVC-CMM-ACT\) Configuration, page 35](#) (Optional)
- [Configuring Facility Data Link Messaging on the CMM, page 36](#) (Optional)
- [Configuring FXS Signaling on the CMM, page 37](#) (Optional)
- [Configuring Your System to Boot to a Specific CMM Image, page 40](#) (Optional)
- [Verifying CMM Configuration, page 41](#) (Optional)

Configuring Voice Features on the CMM

**Note**

The CMM console lists one Gigabit Ethernet interface and, for each installed WS-SVC-CMM-ACT, a Fast Ethernet interface. These interfaces must be configured as Layer 3 interfaces through the CMM console.

Supervisor Engine with MSFC running Cisco IOS software also lists the corresponding CMM interfaces as Gigabit Ethernet and Fast Ethernet interfaces in the Catalyst 6500 series switch console. The same interfaces will be listed as Gigabit Ethernet and Fast Ethernet ports in Supervisor Engine with MSFC running in hybrid mode. These interfaces (or ports) must be configured as Layer 2 ports and assigned to a proper VLAN through the Catalyst 6500 series switch console.

This section contains instructions for the following tasks, which depend on your system:

- [Configuring Systems With Supervisor Engine and MSFC Running Cisco IOS Software, page 18](#)
- [Configuring Systems With Supervisor Engine and MSFC Running in Hybrid Mode, page 20](#)

Configuring Systems With Supervisor Engine and MSFC Running Cisco IOS Software

For systems with the Supervisor Engine and the MSFC running Cisco IOS software, you must access the Catalyst 6500 series CLI through the Catalyst 6500 series console. Then, configure the Gigabit Ethernet and Fast Ethernet interfaces as switch ports and assign them to a proper VLAN.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface gigabitethernet *slot/port***
4. **switchport**
5. **switchport access vlan *vlan id***
6. **no shutdown**
7. **end**
8. **session slot *mod_number* processor 0**
9. If you are configuring a media services feature, configure the CMM media card.
or
Proceed to Step 10.
10. Configure the VoIP gateway or media services feature.

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface gigabitethernet slot/port Example: Router(config)# interface gigabitethernet 1/1	Configures a Gigabit Ethernet interface and enters interface configuration mode. <ul style="list-style-type: none"> The <i>slot</i> argument specifies the module number for the CMM to be configured. The <i>port</i> argument specifies the port number on the interface.
Step 4	switchport Example: Router(config-if)# switchport	Configures the LAN port for Layer 2 switching.
Step 5	switchport access vlan vlan id Example: Router(config-if)# switchport access vlan 100	Assigns the port to a VLAN.
Step 6	no shutdown Example: Router(config-if)# no shutdown	Enables the interface.
Step 7	end Example: Router(config-if)# end	Returns to privileged EXEC mode.
Step 8	session slot mod_number processor 0 Example: Router(config)# session slot 8 processor 0	Accesses the CMM CLI from the switch processor console.

	Command or Action	Purpose
Step 9	If you are configuring a media services feature on a WS-SVC-CMM-ACT, complete the procedure in the “Configuring the CMM Media Card (WS-SVC-CMM-ACT)” section on page 21. or Proceed to Step 10 .	Configures the CMM media card.
Step 10	Configure the VoIP gateway or media services feature by proceeding to the documentation for that feature, which is referenced in the “Supported Features” section on page 8.	Configures a VoIP gateway or media services feature.

Configuring Systems With Supervisor Engine and MSFC Running in Hybrid Mode

For systems with the Supervisor engine and the MSFC running in hybrid mode, you must access the Catalyst 6500 series CLI through the Catalyst 6500 series console and configure the Gigabit Ethernet and Fast Ethernet ports to be in a proper VLAN.

SUMMARY STEPS

1. **enable**
2. **set vlan** *vlan id module/port*
3. **session** *mod_number*
4. If you are configuring a media services feature, configure the CMM media card.
or
Proceed to [Step 5](#).
5. Configure the VoIP gateway or media services feature.

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	set vlan <i>vlan id module/port</i> Example: Router(enable)> set vlan 100 5/1	Assigns the port to a VLAN.
Step 3	session <i>mod_number</i> Example: Router(enable)> session 5	Accesses the CMM CLI from the switch processor console.

	Command or Action	Purpose
Step 4	If you are configuring a media services feature WS-SVC-CMM-ACT, complete the procedure in the “Configuring the CMM Media Card (WS-SVC-CMM-ACT)” section on page 21. or Proceed to Step 5 .	Configures the CMM media card.
Step 5	Configure the VoIP gateway or media services feature by proceeding to the documentation for that feature, which is referenced in the “Supported Features” section on page 8.	Configures a VoIP gateway or media services feature.

Configuring the CMM Media Card (WS-SVC-CMM-ACT)

Each daughter card has four DSPs that can be partitioned among up to four resource pools, and each DSP supports 32 channels of conferencing or transcoding.

Prerequisites

Verify that your system meets the minimum requirements to support a media services feature. These are features in the [“Supported Features”](#) section on page 8 that require the WS-SVC-CMM-ACT port adapter.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **mediacard *slot***
4. **resource-pool *identifier* dsps *number***
5. **no shutdown**

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>enable</code> Example: <code>Router> enable</code>	Enables privileged EXEC mode. <ul style="list-style-type: none"> Enter your password if prompted.
Step 2	<code>configure terminal</code> Example: <code>Router# configure terminal</code>	Enters global configuration mode.
Step 3	<code>mediacard slot</code> Example: <code>Router(config)# mediacard 2</code>	Enters mediacard configuration mode. <ul style="list-style-type: none"> The <i>slot</i> argument specifies the slot number for the media card to be configured. Values range from 1 to 4.
Step 4	<code>resource-pool identifier dsps number</code> Example: <code>Router(config-mediacard)# resource-pool branch_office1 dsps 3</code>	Creates a Digital Signal Processor (DSP) resource pool on an ad-hoc conferencing and transcoding port adapter. <ul style="list-style-type: none"> The <i>identifier</i> argument is a character string identifying the DSP resource to be configured. Valid input consists of alphanumeric characters, plus '_' and '-'. The <i>number</i> argument specifies the number of DSPs to be allocated for the specified resource pool. Values range from 1 to 4.
Step 5	<code>no shutdown</code> Example: <code>Router(config-mediacard)# no shutdown</code>	Enables the media card.

Configuring Transcoding and Conferencing on the CMM

To configure conferencing and transcoding for a CMM with an WS-SVC-CMM-ACT port adapter, complete the following tasks in the order shown:

- [Configuring a Conference Bridge \(WS-SVC-CMM\) in Cisco CallManager, page 23](#)
 - [Configuring a Transcoder by Using the Cisco Media Termination Point \(WS-SVC-CMM\) Type in Cisco CallManager, page 24](#)
- or
- [Configuring a Transcoder by Using the Cisco IOS Media Termination Point Type in Cisco CallManager, page 25](#)
 - [Configuring Transcoding and Conferencing on the CMM, page 25](#)

Configuring a Conference Bridge (WS-SVC-CMM) in Cisco CallManager

To configure a conference bridge in Cisco CallManager, perform the following steps.

- Step 1** From the Cisco CallManager Administration page, choose **Service > Media Resource > Conference Bridge**.
- Step 2** In the right corner, click **Add New Conference Bridge**.
The Conference Bridge Configuration window appears.
- Step 3** Enter the appropriate settings for your system as described in [Table 6](#).

¹
Table 6 Cisco Conference Bridge Configuration Settings

Field	Description
Conference Bridge Type	Choose Cisco Conference Bridge (WS-SVC-CMM) . A device is generated, which equates to a dspfarm profile in your Cisco IOS release.
Conference Bridge Name	Leave this field blank. Note The device name is automatically generated after you enter the MAC address and Subunit. You cannot modify this information. The convention for naming a device is as follows: Subunit/media card: 1 Service: CFB Profile #: 1 Device Name: C01<MAC address> Subunit/media card: 1 Service: MTP Profile #: 2: Device Name: M02<MAC address> Subunit/media card: 2 Service: CFB Profile #: 3 Device Name: C03<MAC address> Subunit/media card: 2 Service: MTP Profile #: 4 Device Name: M04<MAC address> Note There are two services on one card.
Description	Leave this field blank. Note This information is automatically generated after you enter the MAC address and Subunit. You can modify this information after it has been generated.
MAC Address	Enter the MAC address of the Ethernet interface on the CMM that you associate with the scpp local interface command when you complete the “ Configuring Transcoding and Conferencing on the CMM ” section on page 25.
Subunit	Enter the mediacard ID on the CMM. Valid options are 1 to 4.
Device Pool	Choose a device pool that is associated with the Cisco CallManager group configuration or choose Default . You can specify one to three Cisco CallManager servers.

Table 6 Cisco Conference Bridge Configuration Settings (continued)

Field	Description
Location	(Optional) Choose the appropriate location for this conference bridge. The location specifies the total bandwidth that is available for calls to and from this location. A location setting of <i>None</i> means that the locations feature does not track the bandwidth that this conference bridge consumes.
Maximum Capacity	(Optional) Choose the maximum number of channels that you want to allocate for this service. Valid options are 32, 64, 96, and 128. Note Each DSP supports 32 channels; you can assign up to four DSPs.

- Step 4** In the Product Specific Configuration section, complete the information for your system, as needed.
- Step 5** Click **Insert**; then, click **OK**.
- Step 6** To reset the conference bridge device and apply your changes, click **Reset**.
- Step 7** Click **OK**.

Configuring a Transcoder by Using the Cisco Media Termination Point (WS-SVC-CMM) Type in Cisco CallManager

To configure a Cisco Media Termination Point (WS-SVC-CMM) in Cisco CallManager, perform the following steps:

- Step 1** From the Cisco CallManager Administration page, choose **Service > Media Resource > Transcoder**.
- Step 2** In the upper right corner of the window, click the **Add a New Transcoder** link.
- Step 3** Enter the appropriate settings for your system as described in [Table 7](#).

Table 7 Transcoder Configuration Settings

Field	Description
Transcoder Type	Choose Cisco Media Termination Point (WS-SVC-CMM) .
Transcoder Name	Leave this field blank. Note The device name is automatically generated after you enter the MAC address and Subunit. You cannot modify this information.
Description	Enter a description of 50 characters maximum or leave blank to generate automatically from the MAC address or device name that you provide.
MAC Address	Enter a MAC address, which must be 12 characters.
Subunit	Choose a subunit from the drop-down list box.
Device Pool	Choose a device pool. For more detailed information on the chosen device pool, click View Details .
Special Load Information	Enter any special load information or leave blank to use default. Valid characters include letters, numbers, dashes, dots (periods), and underscores.
Maximum Capacity	Choose a maximum capacity from the drop-down list box.

Step 4 In the Product Specific Configuration section, complete the information for your system, as needed.

Step 5 Click **Insert**.

The window refreshes and shows specific information, including the status, for the transcoder that you just configured.

Configuring a Transcoder by Using the Cisco IOS Media Termination Point Type in Cisco CallManager

To configure a transcoder in Cisco CallManager, perform the following steps:

Step 1 From the Cisco CallManager Administration page, choose **Service > Media Resource > Transcoder**.

Step 2 In the upper right corner of the window, click the **Add a New Transcoder** link.

Step 3 Enter the appropriate settings as described in [Table 8](#).

Table 8 Transcoder Configuration Settings

Field	Action
Transcoder Type	Choose Cisco IOS Media Termination Point .
Device Name	Use the MAC address in the format MTPxxxxxxxxxxxx, where xxxxxxxxxxxx represents the MAC address of the Cisco IOS gateway. Example: MTP1231123245AB
Description	Enter a description up to 50 characters or leave blank to generate automatically from the MAC address or the device name that you provide.
Device Pool	Choose a device pool. For more detailed information on the chosen device pool, click View Details .
Special Load Information	Leave blank to use the default.

Step 4 Click **Insert**.

The window refreshes and shows specific information, including the status, for the transcoder that you just configured.

Configuring Transcoding and Conferencing on the CMM

To configure transcoding and conferencing by using the CMM CLI, complete the following steps.

Prerequisites

- Assign ports to a VLAN and access the CMM CLI from the switch processor console by completing the appropriate task in the [“Configuring Voice Features on the CMM”](#) section on page 18.
- Each ad-hoc conferencing and transcoding port adapter has a 100-Mbps Fast Ethernet interface (port) for conferencing and transcoding. On the Catalyst 6500 series switch console, ensure that this interface (port) is configured as a Layer 2 port and assigned to the same VLAN as the CMM Gigabit Ethernet interface that is used for signaling control and telephony RTP packets.

- The RTP traffic must go through the ad-hoc conferencing and transcoding port adapter interfaces, and the signaling must go through the Gigabit Ethernet interface.

The Gigabit Ethernet interface is used for Skinny Client Control Protocol (SCCP) signaling traffic to the Cisco CallManager. Each ad-hoc conferencing and transcoding port adapter has its own interface for Real-Time Transport Protocol RTP (voice) traffic. If the Gigabit Ethernet interface is not configured, the transcoding and conferencing services cannot register with Cisco CallManager. If the ad-hoc conferencing and transcoding port adapter Fast Ethernet interfaces are not configured, the voice path is not established. If one of the ad-hoc conferencing and transcoding port adapter interfaces is shut down, the host informs the Cisco CallManager that these resources are not available for use.

Restrictions

- When using G.711, we recommend that you do not configure packetization above 30 ms if any endpoints use 32-ms packetization, such as NetMeeting (CSCea60204).
- Spanning of the Fast Ethernet port from the Catalyst 6500 series is not supported (CSCsa82249).

SUMMARY STEPS

1. (Optional) On the Catalyst 6500 series switch console, display existing VLANs.
2. On the CMM console, configure the Fast Ethernet interface and enable the ad-hoc conferencing and transcoding port adapter interfaces.
3. On the CMM console, configure and enable the Gigabit Ethernet interface.
4. Configure the media card and resource pool.
5. Create a DSP farm conferencing or transcoding profile.
6. Configure the supported codecs.
7. Associate the resource pool with a DSP farm profile and enable the profile.
8. Configure the SCCP interface.
9. Configure a transcoding and media termination service by associating a transcoding profile.
10. Configure a conferencing service by associating a conferencing profile.
11. Enter global configuration mode.
12. Enable DSP farm.
13. Enable SCCP.

DETAILED STEPS

	Command or Action	Purpose
Step 1	On the Catalyst 6500 series switch console, enter the show vlan command.	(Optional) Confirms VLAN configuration and displays existing VLANs.
Step 2	Configure the interfaces corresponding to each ad-hoc conferencing and transcoding port adapter module; then, enter the no shutdown command. Note All the ad-hoc conferencing and transcoding port adapter interfaces must be configured for the same subnet as the Gigabit interface. To allow all the ad-hoc conferencing and transcoding port adapter interfaces to coexist with the Gigabit interface on the same subnet, you must use a 32-bit netmask. Example: Router(config)# no shutdown	Configures the Fast Ethernet interface and enables the ad-hoc conferencing and transcoding port adapter interfaces for calls to successfully complete through the port adapter.
Step 3	Configure the IP address on the Gigabit Ethernet interface; then, enter the no shutdown command. Note You can configure this interface with a normal network mask. Example: Router(config)# no shutdown	Configures and enables the Gigabit Ethernet interface.
Step 4	Configure the DSP resource pools on each of the ad-hoc conferencing and transcoding port adapters by completing the tasks in the “ Configuring the CMM Media Card (WS-SVC-CMM-ACT) ” section on page 21. Note Each daughter card has four DSPs that can be partitioned among up to four resource pools. Each DSP supports 32 channels of conferencing or transcoding.	Configures the media card and resource pool.
Step 5	Enter the dspfarm profile command. Note Use a profile to associate a resource pool to a transcoding or conferencing service and associate properties, such as the supported codec types and packetization, with the service. Example: Router(config)# dspfarm profile	Creates a DSP farm conferencing or transcoding profile.
Step 6	Configure the supported codecs and associated packetization size in the profile. Note The packetization size denotes a maximum packetization size.	Configures the supported codecs.

Command or Action	Purpose
<p>Step 7 Associate the resource pool that you created in Step 4 with a DSP farm (DSPFARM) profile; then, enter the no shutdown command.</p> <p>Example: Router(config)# no shutdown</p>	<p>Associates the resource pool with a DSP farm profile and enables the profile.</p>
<p>Step 8 Enter the following commands in the order shown, beginning in global configuration mode.</p>	<p>Configures the SCCP interface.</p>
<p>a. Enter the scp local GigabitEthernet 1/0 command.</p> <p>Example: Router(config)# scp local GigabitEthernet 1/0</p>	<p>Specifies the Gigabit Ethernet interface that is used for communicating with the Cisco CallManager server.</p>
<p>b. Enter the scp ccm ip-address/dns identifier identifier-number version version-number command.</p> <p>Example: Router(config)# scp ccm 10.0.0.0 identifier 3 version 4.0</p>	<p>Adds a Cisco CallManager server to the list of available servers.</p> <ul style="list-style-type: none"> The <i>ip-address/dns</i> argument specifies the IP address or DNS name of the Cisco CallManager server. The <i>identifier-number</i> argument is a numeric value ranging from 1 to 65535 that is used to refer to the Cisco CallManager when associating it in a group with profiles. <p>Note This identifier is used as shorthand rather than specifying the IP address and Cisco CallManager version each time.</p> <ul style="list-style-type: none"> The <i>version-number</i> argument specifies the Cisco CallManager version.
<p>c. Enter the scp ccm group group-number command.</p> <p>Example: Router(config)# scp ccm group 10</p>	<p>Identifies the Cisco CallManager group and enters SCCP Cisco CallManager configuration mode.</p> <ul style="list-style-type: none"> The <i>group-number</i> argument is a numeric value ranging from 1 to 65535.
<p>d. Enter the associate ccm identifier-number priority priority command.</p> <p>Example: Router(config-scp-ccm)# associate ccm 25 priority 2</p>	<p>Associates the Cisco CallManager server with a priority.</p> <ul style="list-style-type: none"> The <i>identifier-number</i> argument identifies the Cisco CallManager. Range is 1 to 65535. The <i>priority</i> argument specifies the priority of the Cisco CallManager within the Cisco CallManager group. Range is 1 to 4. The highest priority is 1 and is the primary call manager, priority 2 is the first backup, and so on.

Command or Action	Purpose
<p>e. Enter the associate profile <i>profile-identifier</i> register <i>device-name</i> command.</p> <p>Example: Router(config-sccp-ccm)# associate profile register abgz12345</p>	<p>Associates a DSP farm profile that you created in Step 5 with a Cisco CallManager group.</p> <ul style="list-style-type: none"> The <i>profile-identifier</i> argument is a number that identifies the DSP farm profile. Range is 1 to 65535. The <i>device-name</i> argument is a user-specified device name in Cisco CallManager.
<p>Step 9 Enter the associate profile <i>profile-identifier</i> register <i>device-name</i> command.</p> <p>Example: Router(conif-sccp-ccm)# associate profile 1 register MTP00d0d32f51bb</p>	<p>Configures a transcoding and media termination service by associating the transcoding profile.</p> <ul style="list-style-type: none"> The <i>device-name</i> argument is the MTP prefix followed by the interface hardware MAC address. <p>Tip To display the interfaces associated with the ad-hoc conferencing and transcoding port adapter where you want to configure services and provides the interface hardware MAC address, enter the show interfaces ethernet command.</p>
<p>Step 10 Enter the associate profile <i>profile-identifier</i> register <i>device-name</i> command.</p> <p>Example: Router(conif-sccp-ccm)# associate profile 10 register CFB00902b00a54b</p>	<p>Configures a conferencing service by associating a conferencing profile.</p> <ul style="list-style-type: none"> The <i>device-name</i> argument is the CFB prefix followed by the interface hardware MAC address. <p>Note The device-name consisting of the prefix followed by the MAC address is a convention used by the Cisco CallManager to identify the hardware resource. You can use any unique name instead; however, you must always use the prefix MTP for transcoding and CFB for conferencing.</p>
<p>Step 11 Enter the exit command.</p> <p>Example: Router(conif-sccp-ccm)# exit</p>	<p>Enters global configuration mode.</p>
<p>Step 12 Enter the dspfarm command.</p> <p>Example: Router(config)# dspfarm</p>	<p>Enables DSP farm.</p>
<p>Step 13 Enter the sccp command.</p> <p>Example: Router(config)# sccp</p>	<p>Enables SCCP.</p>

Configuring Media Processor Auto-Configuration

The Media Processor Auto-Configuration feature enables centralized media processor configuration for the CMM through Cisco CallManager. After you configure conferencing or transcoding or both for the CMM in Cisco CallManager, a configuration file for each media service profile is created. You can then enable the CMM to automatically download the configuration file, after which time parsing and configuration of media processor parameters occur for your Cisco IOS release.

When you configure the Media Processor Auto-Configuration feature, remember the following information:

- The Product Specific Configuration sections in the Cisco CallManager Administration windows for conference bridges and transcoders supply the details of the **resource pool**, **dspfarm profile**, **sccp ccm** and **sccp ccm-group** commands.



Note These Cisco CallManager Administration windows do not support hierarchical configuration as Cisco IOS software does. Therefore, you can neither associate a device profile with more than one resource pool nor associate an sccp ccm-group with more than one profile.

- An XML file is generated for each device and is stored in the TFTP server c:\Program Files\Cisco\TFTPPath:*convention*, where the following convention is used for the XML filenames:
 - C<*device-id*><*mac-address*>.xml for conferencing
 - M<*device-id*><*mac-address*>.xml for transcoder

The *device-id* is generated as follows:

- subunit 1: 01=conference and 02=transcoder
- subunit 2: 03=conference and 04=transcoder
- subunit 3: 05=conference and 06=transcoder
- subunit 4: 07=conference and 08=transcoder

Configuring Media Processor Auto-Configuration on the CMM

Prerequisites

Complete the following procedures:

- [Configuring a Conference Bridge \(WS-SVC-CMM\) in Cisco CallManager, page 23](#)
- [Configuring a Transcoder by Using the Cisco Media Termination Point \(WS-SVC-CMM\) Type in Cisco CallManager, page 24](#)

Restrictions

Cisco CallManager does not inform the CMM of media resource additions. To infinitely poll the TFTP server for existing media resources, set **auto-config application sccp** and **timeout 0** on the CMM.

SUMMARY STEPS

1. **enable**
2. **configure terminal**

3. **sccp local GigabitEthernet 1/0**
4. **sccp**
5. **auto-config application sccp**
6. **server ip-address/name ip-address/name ip-address/name**
7. **exit**
8. **auto-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none">• Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	sccp local GigabitEthernet 1/0 Example: Router(config)# sccp local GigabitEthernet 1/0	Specifies the Gigabit Ethernet interface that is used for communicating with the Cisco CallManager server.
Step 4	sccp Example: Router(config)# dspfarm	Enables the SCCP application.
Step 5	auto-config application sccp Example: Router(config)# auto-config application sccp	Enters auto-config application configuration mode for the SCCP application.
Step 6	server IP-name ip-name Example: Router(auto-config-app)# server 172.16.1.1 172.16.1.2	Specifies the IP address or name of TFTP server for the CMM.
Step 7	exit Example: Router(auto-config-app)# exit	Enters global configuration mode.
Step 8	auto-config Example: Router# auto-config	Enables auto-configuration.

Reinitializing Media Auto-Configuration on the CMM

SUMMARY STEPS

1. **auto-config application sccp**
 2. **shutdown**
 3. **no shutdown**
- or
1. **no auto-config**
 2. **auto-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>auto-config application sccp</code>	Enters auto-config application configuration mode for the SCCP application.
	Example: <code>Router(config)# auto-config application sccp</code>	
Step 2	<code>shutdown</code>	Disables the SCCP application for download.
	Example: <code>Router(auto-config-app)# shutdown</code>	
Step 3	<code>no shutdown</code>	Enables the SCCP application for download.
	Example: <code>Router(auto-config-app)# no shutdown</code>	
	Command or Action	Purpose
Step 1	<code>no auto-config</code>	Disables auto-configuration for all applications.
	Example: <code>Router# no auto-config</code>	
Step 2	<code>auto-config</code>	Enables auto-configuration for all applications.
	Example: <code>Router# auto-config</code>	

Verifying and Troubleshooting Media Processor Auto-Configuration

To verify Media Processor Auto-Configuration feature configuration, use the **show auto-config** command as shown in [Step 1](#) and the **show running-config** command as shown in [Step 3](#) beginning in privileged EXEC mode.

Use **debug auto-config** command and **debug sccp config** command, as shown in [Step 3](#) and [Step 4](#) respectively, for troubleshooting.

SUMMARY STEPS

1. **show auto-config**
2. **show running-config**
3. **debug auto-config {all | errors | events | parser}**
4. **debug sccp config {all | errors | events | parser}**

DETAILED STEPS

Step 1 **show auto-config**

This command shows if Media Processor Auto-Configuration feature is enabled for the SCCP application, if the SCCP application has registered to use auto-configuration, and download statistics and error history for auto-configuration.

```
Router# show auto-config
auto-config application: sccp
auto-config admin state: ENABLED & ACTIVE
download retries: (3)
download timeout: no timeout, continuous retry
server(s): 172.16.240.41 172.16.240.40 172.16.240.42
```

```
Configuration Download statistics:
  Download Attempted           : 2
  Download Successful          : 2
  Download Failed              : 0
  Configuration Attempted     : 2
  Configuration Successful     : 2
  Configuration Failed(parsing): 0
  Configuration Failed(config) : 0
```

```
Configuration Error History:
```

[Table 9](#) describes the significant fields shown in the display.

Table 9 *show auto-config Field Descriptions*

Field	Description
ENABLED	Shows auto-config application: SCCP is enabled.
ACTIVE	Shows the SCCP application has registered to use auto-configuration.
timeout	Shows timeout is set to 0, continuous retry without timeout.

Step 2 **show running-config**

Note If generated by media processor auto-configuration, the resource pool, sccp ccm, sccp ccm group, and dspfarm profile IDs are preceded by 99.

```
Router# show running-config
Building configuration...

Current configuration : 3694 bytes
!
...
mediacard 3
resource-pool 995 dsps 1
```

```

!
sccp local GigabitEthernet1/0
sccp ccm 127.16.240.40 identifier 993
sccp ccm 127.16.240.42 identifier 992
sccp ccm 172.16.240.41 identifier 991
!
sccp
!
sccp ccm group 995
  associate ccm 993 priority 3
  associate ccm 992 priority 2
  associate ccm 991 priority 1
  associate profile 995 register C050003feacc332
  registration retries 2
  registration timeout 15
  keepalive retries 2
  keepalive timeout 60
  connect retries 2
  connect interval 15
  switchover method immediate
  switchback method graceful
  switchback interval 15
  signaling dscp af11
  audio dscp af12
...

dspfarm
!
dspfarm profile 995 conference adhoc
  description skk-cmm
  rtp timeout 7000
  codec g711lulaw packetization-period 30
  codec g711alaw packetization-period 30
  codec g729r8 packetization-period 30
  codec g729ar8 packetization-period 30
  codec g723r63 packetization-period 30
  codec g723r53 packetization-period 30
  vad override on
  associate resource-pool 995
...

```

Step 3 **debug auto-config {all | errors | events | parser}**

You can use this command to look at debug output for the process, which handles the download and XML parsing requests from your Cisco IOS release.

```

Feb  8 02:17:31.119: dnld_app_check_state(0x628C8164)...
Feb  8 02:17:31.123: dnld_chk_app_handle(0x628C8164)
Feb  8 02:17:31.123: dnld_app_check_state: appl = 0x628C8164, state = 0x11

```

[Table 10 on page 35](#) describes the significant fields shown in the display.

Table 10 *debug auto-config Field Descriptions*

Field	Description
0x628C8164	Identifies the application handle, an auto-generated number for debugging.
0x11	Shows the state of the application. Statuses as indicated are as follows: 0x11—Registered and enabled. 0x1—Download application is enabled. 0x10—Download application is registered.

Step 4 `debug sccp config {all | errors | events | parser}`

You can use this command to look at the debug output for the media processor SCCP configuration processes.

```
Feb  8 02:17:31.119: mp_auto_cfg_request(req_id=2, prof=995, ccm_group_id=0)
Feb  8 02:17:31.123: mp_auto_cfg_is_up: SCCP auto-config is enabled & registered
```

[Table 11](#) describes the significant fields shown in the display.

Table 11 *debug sccp config Field Descriptions*

Field	Description
prof=995	Indicates the profile ID. If generated by media processor auto-configuration, profile IDs are preceded by 99.
SCCP auto-config is enabled & registered	Indicates the registration of sccp with auto-config is complete.

Verifying and Troubleshooting the CMM Media Card (WS-SVC-CMM-ACT) Configuration

To verify CMM media card (WS-SVC-CMM-ACT) configuration, use the **show mediacard** command as shown in [Step 1](#) beginning in privileged EXEC mode.

Use the debug mediacard command as shown in [Step 2](#) for troubleshooting.

SUMMARY STEPS

1. `show mediacard slot [conference | connections | dsp number]`
2. `debug mediacard {all | errors | events | message}`

DETAILED STEPS

Step 1 `show mediacard slot [conference | connections | dsp number]`

This command displays configuration information about media card conferencing, transcoding, MTPs and DSPs.

```
Router# show mediacard connections
Id  Type  Slot/  RxPktsTxPktsRPort  SPort  Remote-Ip
      DSP/Ch
0   mtp   3/1/1  16544 16488 1046   1046   10.0.2.15
0   mtp   3/1/2  19396 19662 1046   1046   10.0.80.50
0   mtp   3/1/3  17562 20122 626    626    10.0.2.15
0   mtp   3/1/4  17488 17328 626    626    10.0.80.5
```

Table 12 describes the significant fields shown in the display.

Table 12 *show mediacard Field Descriptions*

Field	Description
RxPkts	Number of packets transmitted
TxPkts	Number of packets received
RPort	Receiving port
SPort	Sending port
Remote-Ip	IP address of the remote endpoint

Step 2 **debug mediacard {all | errors | events | message}**

This command displays Digital Signal Processor Resource Manager (DSPRM) debugging information.

```
Router# debug mediacard events

Media Card service events debugging is on
*Mar  1 07:47:53.926: ms_ac_open_rtp_sockets: loc_ipaddr = 10.1.80.24 loc_mac<00
03.feac.c842> rem_ip<0.0.0.0> rem_port<0>
*Mar  1 07:47:53.926: ms_ac_get_unique_udp_port: rtcp_socket = 6255F490
*Mar  1 07:47:53.926: ms_ac_get_unique_udp_port: SLOT3 Port<3450> is assigned!
*Mar  1 07:47:53.926: ms_ac_open_local_rtp: rtpinfo 64382A3C, local_port =23930
*Mar  1 07:47:53.926: ms_ac_rtp_enq: Sent msg 101 to DSPFARM
...
```

Configuring Facility Data Link Messaging on the CMM

Facility Data Link (FDL) messaging allows you to set the Facility Data Link (FDL) exchange standard for CSU controllers or for a T1 interface that uses extended super frame (ESF) framing format.

To configure FDL messaging on the CMM, perform the following steps:

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **controller {t1 | e1} slot/port**
4. **fdl {att | ansi | both}**
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>enable</code> Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> Enter your password if prompted.
Step 2	<code>configure terminal</code> Example: Router# configure terminal	Enters global configuration mode.
Step 3	<code>controller {t1 e1} slot/port</code> Example: Router(config)# controller t1 1/1	Enters controller configuration mode. <ul style="list-style-type: none"> The <code>slot/port</code> argument specifies the backplane slot number and port number on the interface. See your hardware installation manual for the specific values and slot numbers.
Step 4	<code>fdl {att ansi both}</code> Example: Router(config-controller)# fdl both	Sets the FDL exchange standard. <ul style="list-style-type: none"> The att keyword selects AT&T Technical Reference 54016 for ESF FDL exchange support. The ansi keyword selects ANSI T1.403 for ESF FDL exchange support. The both keyword specifies support for both AT&T Technical Reference 54016 and ANSI T1.403 for ESF FDL exchange support.
Step 5	<code>end</code> Example: Router(config-controller)# end	Exits controller configuration mode.

Configuring FXS Signaling on the CMM

To configure FXS signaling, perform the following tasks:

- [Configuring FXS Signaling in Cisco CallManager, page 37](#)
- [Configuring FXS Signaling on the CMM, page 39](#)

Configuring FXS Signaling in Cisco CallManager

To configure FXS signaling with Cisco CallManager and MGCP (XML) download, perform the following steps:

-
- Step 1** Add a CMM gateway in Cisco CallManager by completing the following steps:
- Go to **CCM > Device > Gateway**.
 - Click **Add a New Gateway**.

- c. From the Gateway Type menu, choose **Communication Media Module**.
- d. Click **Next**.

Step 2 Describe your CMM gateway.

For example, enter descriptive text similar to the following:

- Domain name: CMM-1.
- This is my CMM FXS Gateway.
- Default.

Step 3 Choose the CMM and specify an FXS interface to configure. An example of specifying an FXS interface is shown in the [“Examples” section on page 39](#).

In the Installed Voice Interface Cards menu, you will see either three slots or four slots depending on the Cisco CallManager release or patch that is installed.

Step 4 Configure the endpoints by entering information in the fields as shown in [Table 13](#).



Note If you do not see these fields in the endpoints, you do not have the correct Cisco CallManager release or patch installed. For software specifications, including minimum software recommendations, see the release notes for your Cisco IOS release.

Table 13 *Endpoint Fields*

Field	Action
Gateway Information	
Device Pool	Enter your system information.
Calling Search Space	Enter your system information.
AAR Calling	Enter your system information.
Media Resource	Enter your system information.
Network Hold Audio	Enter your system information.
Location	Enter your system information.
AAR Group	Enter your system information.
Network Locale	Enter your system information.
Port Information	
Prefix DN	Use the default value, which is blank.
Num Digits	Use the default value of 0.
Expected Digits	Use the default value of 0.
Product Specific Conf.	
Input Gain	Use the default value of 0.
Output Attenuation	Use the default value of 3.
Echo Cancellation	Use the default value, which is Enable.
Echo Cancel Coverage	Use the default value of 64.
Caller ID	Use the default value, which is Enable.

- Step 5** After you configure the endpoint fields, click **Insert**.
You will see a new menu on the left side of the screen with the ports and endpoints and Add DN next to each configured endpoint.
- Step 6** Click **Add DN** and assign the proper Directory/Phone number to the interface. Fill in other information for your system if applicable.
An XML file in Cisco CallManager is created.
-

Examples

The following example shows how you specify an FXS interface to configure. In this example, WS-X6600-24FXS is installed on the CMM.

-
- Step 1** Choose WS-X6600 from the drop-down menu, ensuring that your choice for the interface refers to the correct module that you want to configure.
- Step 2** Click **Insert**.
The Subunit field appears below the WS-X6600 drop-down menu.
- Step 3** Choose the appropriate subunit, for example WS-X6600-24FXS.
- Step 4** Click **Update**.
You will see 24 endpoints (24 FXS) with a question mark (?) in yellow.
- Step 5** Click the endpoint that you want to configure.
-

Configuring FXS Signaling on the CMM



Note

The following task specifies the minimum configuration that is required to enable FXS signaling.

SUMMARY STEPS

1. Complete the task in [“Configuring Voice Features on the CMM”](#) section on page 18.
2. Configure the hostname.
3. Configure the CMM Gigabit Ethernet backplane interface.
4. (Optional) Ping the Cisco CallManager and other devices in your network.
5. (Optional) Verify the configuration.
6. Assign the Cisco CallManager address where your CMM can download the XML file.
7. Download the XML file from the Cisco CallManager.
8. (Optional) Verify the configuration.

DETAILED STEPS

	Command or Action	Purpose
Step 1	Complete the tasks in the “ Configuring Voice Features on the CMM ” section on page 18.	Accesses the CMM CLI.
Step 2	Configure the hostname. Note This name must match the name that you assigned in the “ Configuring FXS Signaling in Cisco CallManager ” section on page 37.	Configures the hostname.
Step 3	Configure the domain name. Note This name must match the name that you assigned in the “ Configuring FXS Signaling in Cisco CallManager ” section on page 37.	Configures the domain name.
Step 4	On the CMM console, enter the following commands in the order shown, beginning in global configuration mode.	Configures the CMM Gigabit Ethernet backplane interface.
	a. <code>interface GigabitEthernet 1/0</code>	Enters interface configuration mode.
	b. If required, add IP route.	—
	c. <code>no shutdown</code>	Enables the interface.
Step 5	Ping the Cisco CallManager and other devices in your network.	Verifies the configuration.
Step 6	<code>ccm-manager config server IP-Address</code>	Assigns the Cisco CallManager address where your CMM can download the XML file.
Step 7	<code>ccm-manager config</code>	Starts downloading the XML file from the Cisco CallManager. Note The more ports you have configured, the longer the download takes.
Step 8	<code>show running-config</code>	(Optional) Verifies the configuration.

Configuring Your System to Boot to a Specific CMM Image

To store images and configure your system to boot a specific CMM image, we recommend that you store two images in the CMM bootflash: the golden (existing) image and the new image. You should store the golden image in the first boot location and the new image in the second boot location.

SUMMARY STEPS

1. **configure terminal**
2. **boot system bootflash:** *imagenam*
3. **config-register** *value*

DETAILED STEPS

	Command or Action	Description
Step 1	<code>configure terminal</code> Example: CMM# <code>configure terminal</code>	Enters global configuration mode.
Step 2	<code>boot system bootflash: imagename</code> Example: CMM(conf)> <code>boot system bootflash: cmm-golden-image</code>	Configures the boot system bootflash: to boot with the golden image. <ul style="list-style-type: none"> The <i>imagename</i> argument specifies the name of the golden image. Note By setting boot system bootflash: cmm-golden-image , there is no chance of accidentally booting up with an unwanted image.
Step 3	<code>config-register value</code> Example: CMM(conf)> <code>config-register 0x2</code>	Sets the configuration register. Note We recommended that you set the configuration register to 0x2. <ul style="list-style-type: none"> The <i>value</i> argument is a hexadecimal or decimal value that represents the 16-bit configuration register value that you want to use the next time the router is restarted. <ul style="list-style-type: none"> By setting the configuration register to 0x2, the default booting from bootflash: is enabled. The booting will take place from the first file. The boot system command overrides the default booting from bootflash:; therefore, you must have the golden image (the image that needs to be booted) as the first file in the bootflash:. Setting the configuration register to 0x01 uses the first image from the bootflash:. The recommended setting for the configuration register is 0x2 and the configuration of the boot system bootflash: cmm-golden-image. If you have console access to the CMM module and wish to enter ROMMON every time the CMM reloads, you can configure the config-register to be 0x0. Note Setting the configuration register to 0x0 puts the CMM in ROMMON mode, and you must manually reboot from ROMMON if there is a reload or crash. Therefore, the configuration register setting of 0x0 is not recommended for use in production environments where there may not be a person available to boot the CMM manually after a reload or crash. A person with CMM console access must be available at the site.

Verifying CMM Configuration

To verify CMM configuration, perform the following steps beginning in privileged EXEC mode:

SUMMARY STEPS

1. `show running-config`

DETAILED STEPS

Step 1 `show running-config`

Example:

```

Router# show running-config
Building configuration...

Current configuration : 3694 bytes
!
version 12.2
no parser cache
no service config
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname hostname
!
boot system flash bootflash:
logging buffered 5000000 debugging
!
ip subnet-zero
ip tcp synwait-time 13
ip host dirt 172.16.17.19
!
isdn switch-type primary-ni
!
!
voice class codec 1
!
!
!
!
!
!
!
!
!
ccm-manager mgcp
ccm-manager music-on-hold
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
controller T1 2/0
framing esf
linecode b8zs
pri-group timeslots 1-24
!
controller T1 2/1
framing sf
linecode ami
!
controller T1 2/2
framing sf
linecode ami
!
controller T1 2/3
framing sf
  
```

```
    linecode ami
  !
  controller T1 2/4
    framing sf
    linecode ami
  !
  controller T1 2/5
    framing sf
    linecode ami
  !
  !
  !
  interface FastEthernet0/0
    ip address 10.1.2.38 255.255.255.255
    no ip proxy-arp
  !
  interface GigabitEthernet1/0
    ip address 10.1.2.36 255.255.255.0
    no ip proxy-arp
    no negotiation auto
    no keepalive
  !
  interface FastEthernet2/0
    ip address 10.1.2.37 255.255.255.255
    no ip proxy-arp
  !
  interface Serial2/0:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn protocol-emulate network
    isdn incoming-voice voice
    no cdp enable
  !
  interface FastEthernet3/0
    no ip address
    shutdown
  !
  ip classless
  ip route 0.0.0.0 0.0.0.0 10.1.2.1
  no ip http server
  !
  !
  arp 172.16.0.90 0000.0900.0000 ARPA
  arp 172.16.0.80 0000.0800.0000 ARPA
  arp 172.16.0.60 0000.0600.0000 ARPA
  arp 172.16.0.12 0000.2100.0000 ARPA
  arp 172.16.0.11 0000.1100.0000 ARPA
  call rsvp-sync
  !
  voice-port 2/0:23
    echo-cancel coverage 64
  !
  mgcp
  mgcp call-agent 10.1.1.5 2427 service-type mgcp version 0.1
  mgcp dtmf-relay voip codec all mode out-of-band
  mgcp rtp unreachable timeout 1000 action notify
  mgcp package-capability rtp-package
  mgcp package-capability sst-package
  no mgcp timer receive-rtcp
  mgcp sdp simple
  !
  mgcp profile default
  !
```

```

mediacard dsp memory capture tftp://10.7.16.63/
!
mediacard 1
  resource-pool sanjose1 dsps 2
  resource-pool conf2 dsps 2
!
mediacard 3
  resource-pool sanjose2 dsps 2
  resource-pool conf3 dsps 2
!
mediacard 4
!
sccp local GigabitEthernet1/0
sccp ccm 10.7.16.63 identifier 1
sccp
!
sccp ccm group 1
  associate ccm 1 priority 1
  associate profile 16 register MTP00902b00a54d
  associate profile 15 register MTP00902b00a54b
  associate profile 10 register CFB00902b00a54b
!
dspfarm
!
dspfarm profile 15 transcode
  codec g711ulaw packetization-period 60
  codec g711alaw packetization-period 60
  codec g729r8 packetization-period 60
  codec g729ar8 packetization-period 60
  codec g723r63 packetization-period 60
  codec g723r53 packetization-period 60
  associate resource-pool conf3
  shutdown
!
dspfarm profile 10 conference adhoc
  codec g711ulaw packetization-period 60
  codec g711alaw packetization-period 60
  codec g729r8 packetization-period 60
  codec g729ar8 packetization-period 60
  codec g723r63 packetization-period 60
  codec g723r53 packetization-period 60
  associate resource-pool sanjose2
!
dspfarm profile 16 transcode
  codec g711ulaw packetization-period 30
  codec g711alaw packetization-period 30
  codec g729r8 packetization-period 30
  codec g729ar8 packetization-period 30
  codec g723r63 packetization-period 30
  codec g723r53 packetization-period 30
  associate resource-pool conf2
!
dial-peer voice 9991315 pots
  application mgcpapp
!
dial-peer voice 9991415 pots
  application mgcpapp
!
dial-peer voice 80 voip
  incoming called-number ....
  destination-pattern ....
  progress_ind setup enable 3
  session target ipv4:10.7.16.63
!

```

```
dial-peer voice 30 pots
  incoming called-number ....
  direct-inward-dial
  forward-digits all
!
!
line con 0
line vty 0 4
  login
!
!
end
```

Configuration Examples for Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series

This section includes the following configuration examples:

- [H.323 Configuration Examples, page 45](#)
- [CMM Media Card \(WS-SVC-CMM-ACT\) Configuration Examples, page 57](#)
- [MGCP Configuration Examples, page 59](#)
- [QSIG Configuration Examples, page 81](#)

H.323 Configuration Examples

This section includes the following configuration examples:

- [H.323 T1 PRI Example, page 45](#)
- [H.323 T1 CAS Example, page 48](#)
- [H.323 E1 PRI Example, page 51](#)
- [H.323 E1-R2 Example, page 54](#)

H.323 T1 PRI Example

The following is sample output that shows H.323 T1PRI configuration:

```
Building configuration...
Current configuration : 3867 bytes
!
version 12.2
no service config
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname hostname
!
boot system flash bootflash:wscmm-i6s-mz.13T4.May10w
```

```

!
ip subnet-zero
!
isdn switch-type primary-ni
!
voice call send-alert
!
.
.
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
controller T1 1/0
  framing esf
  clock source line primary
  linecode b8zs
  pri-group timeslots 1-24
!
controller T1 1/1
  framing esf
  clock source line secondary 1
  linecode b8zs
  pri-group timeslots 1-24
!
controller T1 1/2
  framing esf
  clock source line secondary 1
  linecode b8zs
  pri-group timeslots 1-24
!
controller T1 1/3
  framing esf
  clock source line secondary 1
  linecode b8zs
  pri-group timeslots 1-24
!
controller T1 1/4
  framing esf
  clock source line secondary 1
  linecode b8zs
  pri-group timeslots 1-24
!
controller T1 1/5
  framing esf
  clock source line secondary 1
  linecode b8zs
  pri-group timeslots 1-24
!
!
interface GigabitEthernet1/0
  ip address 10.120.70.245 255.255.255.0
  no negotiation auto
  no keepalive
!
interface Serial1/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!

```

```
interface Serial1/1:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial1/2:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial1/3:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial1/4:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial1/5:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
ip classless
no ip http server
!
!
arp 172.16.0.30 0000.0300.0000 ARPA
arp 172.16.0.12 0000.2100.0000 ARPA
arp 172.16.0.11 0000.1100.0000 ARPA
call rsvp-sync
!
voice-port 1/0:23
  echo-cancel coverage 64
!
voice-port 1/1:23
  echo-cancel coverage 64
!
voice-port 1/2:23
  echo-cancel coverage 64
!
voice-port 1/3:23
  echo-cancel coverage 64
!
voice-port 1/4:23
  echo-cancel coverage 64
!
voice-port 1/5:23
  echo-cancel coverage 64
!
!
mgcp profile default
```

```
!  
!  
dial-peer voice 10 pots  
  incoming called-number 901....  
  destination-pattern 111....  
  progress_ind setup enable 3  
  direct-inward-dial  
  forward-digits all  
!  
dial-peer voice 11 pots  
  incoming called-number 902....  
  destination-pattern 112....  
  progress_ind setup enable 3  
  direct-inward-dial  
  forward-digits all  
!  
dial-peer voice 12 pots  
  incoming called-number 903....  
  destination-pattern 113....  
  progress_ind setup enable 3  
  direct-inward-dial  
  forward-digits all  
!  
dial-peer voice 13 pots  
  incoming called-number 904....  
  destination-pattern 114....  
  progress_ind setup enable 3  
  direct-inward-dial  
  forward-digits all  
!  
dial-peer voice 14 pots  
  incoming called-number 905....  
  destination-pattern 115....  
  progress_ind setup enable 3  
  direct-inward-dial  
  forward-digits all  
!  
dial-peer voice 15 pots  
  incoming called-number 906....  
  destination-pattern 116....  
  progress_ind setup enable 3  
  direct-inward-dial  
  forward-digits all  
!  
dial-peer voice 999 voip  
  incoming called-number.....  
  destination-pattern 44..  
  progress_ind setup enable 3  
  modem passthrough nse codec g711ulaw  
  session target ipv4:10.10.10.13  
  dtmf-relay h245-signal h245-alphanumeric  
  no vad  
!  
!  
!  
line con 0  
line vty 0 4  
!  
!  
end
```


H.323 T1 CAS Example

The following is sample output that shows H.323 T1 CAS configuration:

```
Building configuration...

Current configuration : 3867 bytes
!
version 12.2
no service config
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname hostname
!
boot system flash bootflash:wscmm-i6s-mz.13T4.May10w
!
ip subnet-zero
!
isdn switch-type primary-ni
!
voice call send-alert
!
!
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
controller T1 1/0
 framing esf
 clock source line primary
 linecode b8zs
 ds0-group 0 timeslots 1-24 type e&m-wink-start
!
controller T1 1/1
 framing esf
 clock source line secondary 1
 linecode b8zs
 ds0-group 0 timeslots 1-24 type e&m-wink-start
!
controller T1 1/2
 framing esf
 clock source line secondary 1
 linecode b8zs
 ds0-group 0 timeslots 1-24 type e&m-wink-start
!
controller T1 1/3
 framing esf
 clock source line secondary 1
 linecode b8zs
 ds0-group 0 timeslots 1-24 type e&m-wink-start
!
controller T1 1/4
 framing esf
 clock source line secondary 1
 linecode b8zs
 ds0-group 0 timeslots 1-24 type e&m-wink-start
!
controller T1 1/5
```

```

framing esf
clock source line secondary 1
linecode b8zs
ds0-group 0 timeslots 1-24 type e&m-wink-start
!
!
interface GigabitEthernet1/0
ip address 10.120.70.245 255.255.255.0
no negotiation auto
no keepalive
!
ip classless
no ip http server
!
!
arp 172.16.0.30 0000.0300.0000 ARPA
arp 172.16.0.12 0000.2100.0000 ARPA
arp 172.16.0.11 0000.1100.0000 ARPA
call rsvp-sync
!
voice-port 1/0:0
echo-cancel coverage 64
!
voice-port 1/1:0
echo-cancel coverage 64
!
voice-port 1/2:0
echo-cancel coverage 64
!
voice-port 1/3:0
echo-cancel coverage 64
!
voice-port 1/4:0
echo-cancel coverage 64
!
voice-port 1/5:0
echo-cancel coverage 64
!
!
mgcp profile default
!
!
dial-peer voice 10 pots
incoming called-number 901....
destination-pattern 111....
progress_ind setup enable 3
direct-inward-dial
port 1/0:0
forward-digits all
!
dial-peer voice 11 pots
incoming called-number 902....
destination-pattern 112....
progress_ind setup enable 3
direct-inward-dial
port 1/1:0
forward-digits all
!
dial-peer voice 12 pots
incoming called-number 903....
destination-pattern 113....
progress_ind setup enable 3
direct-inward-dial
port 1/2:0

```

```

    forward-digits all
    !
dial-peer voice 13 pots
    incoming called-number 904...
    destination-pattern 114...
    progress_ind setup enable 3
    direct-inward-dial
    port 1/3:0
    forward-digits all
    !
dial-peer voice 14 pots
    incoming called-number 905...
    destination-pattern 115...
    progress_ind setup enable 3
    direct-inward-dial
    port 1/4:0
    forward-digits all
    !
dial-peer voice 15 pots
    incoming called-number 906...
    destination-pattern 116...
    progress_ind setup enable 3
    direct-inward-dial
    port 1/5:0
    forward-digits all
    !
dial-peer voice 999 voip
    incoming called-number.....
    destination-pattern 44..
    progress_ind setup enable 3
    modem passthrough nse codec g711ulaw
    session target ipv4:10.10.10.13
    dtmf-relay h245-signal h245-alphanumeric
    no vad
    !
    !
    !
line con 0
line vty 0 4
    !
    !
end

```

H.323 E1 PRI Example

The following is sample output that shows H.323 E1 PRI configuration:

```

Building configuration...

Current configuration : 5030 bytes
!
version 12.2
no service config
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname hostname
!
!
ip subnet-zero
no ip domain lookup

```

```

ip domain name domain.com
ip host dirt 172.16.0.129
!
isdn switch-type primary-net5
!
!
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
controller E1 1/0
  pri-group timeslots 1-31
!
controller E1 1/1
  pri-group timeslots 1-31
!
controller E1 1/2
  pri-group timeslots 1-31
!
controller E1 1/3
  pri-group timeslots 1-31
!
controller E1 1/4
  pri-group timeslots 1-31
!
controller E1 1/5
  pri-group timeslots 1-31
!
controller E1 2/0
!
controller E1 2/1
!
controller E1 2/2
!
controller E1 2/3
!
controller E1 2/4
!
controller E1 2/5
!
controller E1 3/0
!
controller E1 3/1
!
controller E1 3/2
!
controller E1 3/3
!
controller E1 3/4
!
controller E1 3/5
!
!
interface GigabitEthernet1/0
  ip address 10.10.10.199 255.255.255.0
  no negotiation auto
  no keepalive
!
interface Serial1/0:15
  no ip address
  no logging event link-status
  isdn switch-type primary-net5
  isdn incoming-voice voice

```

```
no cdp enable
!
interface Serial1/1:15
no ip address
no logging event link-status
isdn switch-type primary-net5
isdn incoming-voice voice
no cdp enable
!
interface Serial1/2:15
no ip address
no logging event link-status
isdn switch-type primary-net5
isdn incoming-voice voice
no cdp enable
!
interface Serial1/3:15
no ip address
no logging event link-status
isdn switch-type primary-net5
isdn incoming-voice voice
no cdp enable
!
interface Serial1/4:15
no ip address
no logging event link-status
isdn switch-type primary-net5
isdn incoming-voice voice
no cdp enable
!
interface Serial1/5:15
no ip address
no logging event link-status
isdn switch-type primary-net5
isdn incoming-voice voice
no cdp enable
!
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.10.10.108
no ip http server
!
!
arp 172.16.0.20 0000.0200.0000 ARPA
arp 172.16.0.12 0000.2100.0000 ARPA
arp 172.16.0.11 0000.1100.0000 ARPA
call rsvp-sync
!
voice-port 1/0:15
echo-cancel coverage 64
!
voice-port 1/1:15
echo-cancel coverage 64
!
voice-port 1/2:15
echo-cancel coverage 64
!
voice-port 1/3:15
echo-cancel coverage 64
!
voice-port 1/4:15
echo-cancel coverage 64
!
voice-port 1/5:15
```

```

    echo-cancel coverage 64
    !
    !
mgcp profile default
    !
dial-peer voice 11 pots
    incoming called-number 902....
    destination-pattern 112....
    direct-inward-dial
    forward-digits all
    !
dial-peer voice 10 pots
    incoming called-number 901....
    destination-pattern 111....
    direct-inward-dial
    forward-digits all
    !
dial-peer voice 12 pots
    incoming called-number 903....
    destination-pattern 113....
    direct-inward-dial
    forward-digits all
    !
dial-peer voice 13 pots
    incoming called-number 904....
    destination-pattern 114....
    direct-inward-dial
    forward-digits all
    !
dial-peer voice 14 pots
    incoming called-number 905....
    destination-pattern 115....
    direct-inward-dial
    forward-digits all
    !
dial-peer voice 15 pots
    incoming called-number 906....
    destination-pattern 116....
    direct-inward-dial
    forward-digits all
    !
dial-peer voice 999 voip
    destination-pattern 44..
    session target ipv4:10.10.10.13
    dtmf-relay h245-signal h245-alphanumeric
    !
    !
    !
line con 0
line vty 0 4
    !
    !
end

```

H.323 E1-R2 Example

The following is sample output that shows H.323 E1-R2 configuration:

```

Building configuration...
Current configuration : 5030 bytes
!
version 12.2
no service config

```

```
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname hostname
!
!
ip subnet-zero
no ip domain lookup
ip domain name domain.com
ip host dirt 172.16.1.129
!
isdn switch-type primary-net5
!
!
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
controller E1 1/0
  ds0-group 0 timeslots 1-15,17-31 type r2-digital r2-compelled
!
controller E1 1/1
  ds0-group 0 timeslots 1-15,17-31 type r2-digital r2-compelled
!
controller E1 1/2
  ds0-group 0 timeslots 1-15,17-31 type r2-digital r2-compelled
!
controller E1 1/3
  ds0-group 0 timeslots 1-15,17-31 type r2-digital r2-compelled
!
controller E1 1/4
  ds0-group 0 timeslots 1-15,17-31 type r2-digital r2-compelled
!
controller E1 1/5
  ds0-group 0 timeslots 1-15,17-31 type r2-digital r2-compelled
!
controller E1 2/0
!
controller E1 2/1
!
controller E1 2/2
!
controller E1 2/3
!
controller E1 2/4
!
controller E1 2/5
!
controller E1 3/0
!
controller E1 3/1
!
controller E1 3/2
!
controller E1 3/3
!
controller E1 3/4
!
controller E1 3/5
!
!
```

```

interface GigabitEthernet1/0
 ip address 10.10.10.199 255.255.255.0
 no negotiation auto
 no keepalive
 !
 !
 ip classless
 ip route 0.0.0.0 0.0.0.0 10.10.10.108
 no ip http server
 !
 !
 arp 192.168.0.20 0000.0200.0000 ARPA
 arp 192.168.0.12 0000.2100.0000 ARPA
 arp 192.168.0.11 0000.1100.0000 ARPA
 call rsvp-sync
 !
 voice-port 1/0:0
  echo-cancel coverage 64
 !
 voice-port 1/1:0
  echo-cancel coverage 64
 !
 voice-port 1/2:0
  echo-cancel coverage 64
 !
 voice-port 1/3:0
  echo-cancel coverage 64
 !
 voice-port 1/4:0
  echo-cancel coverage 64
 !
 voice-port 1/5:0
  echo-cancel coverage 64
 !
 !
 mgcp profile default
 !
 dial-peer voice 11 pots
  incoming called-number 902....
  destination-pattern 112....
  direct-inward-dial
  port 1/1:0
  forward-digits all
 !
 dial-peer voice 10 pots
  incoming called-number 901....
  destination-pattern 111....
  direct-inward-dial
  port 1/0:0
  forward-digits all
 !
 dial-peer voice 12 pots
  incoming called-number 903....
  destination-pattern 113....
  direct-inward-dial
  port 1/2:0
  forward-digits all
 !
 dial-peer voice 13 pots
  incoming called-number 904....
  destination-pattern 114....
  direct-inward-dial
  port 1/3:0
  forward-digits all

```



```

!
dial-peer voice 14 pots
  incoming called-number 905....
  destination-pattern 115....
  direct-inward-dial
  port 1/4:0
  forward-digits all
!
dial-peer voice 15 pots
  incoming called-number 906....
  destination-pattern 116....
  direct-inward-dial
  port 1/5:0
  forward-digits all
!
dial-peer voice 999 voip
  destination-pattern 44..
  session target ipv4:10.10.10.13
  dtmf-relay h245-signal h245-alphanumeric
!
!
line con 0
line vty 0 4
!
!
end

```

CMM Media Card (WS-SVC-CMM-ACT) Configuration Examples

This section includes the following configuration examples:

- [Transcoding and Conferencing with Cisco CallManager Example](#)
- [CMM Media Card \(WS-SVC-CMM-ACT\) and Resource Pool Configuration Example, page 59](#)

Transcoding and Conferencing with Cisco CallManager Example

The following is sample output that shows transcoding and conferencing with Cisco CallManager configuration

```

Building configuration...
Current configuration : 4058 bytes
!
version 12.2
no service config
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname hostname
!
!
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled

interface GigabitEthernet1/0
 ip address 10.1.1.50 255.255.255.0
 no ip proxy-arp
 no negotiation auto

```

```

no keepalive

interface FastEthernet0/0
 ip address 10.1.1.52 255.255.255.255
 no ip proxy-arp

interface FastEthernet1/0
 ip address 10.1.1.54 255.255.255.255
 no ip proxy-arp
!
mediacard 1
 resource-pool xcode dsps 4

mediacard 2
 resource-pool cfb dsps 4
!
sccp local GigabitEthernet1/0
sccp ccm 10.1.1.7 identifier 2
sccp ccm 10.1.1.8 identifier 1
sccp
!
sccp ccm group 1
 associate ccm 2 priority 2
 associate ccm 1 priority 1
 associate profile 1 register MTP0030f271d9ab
 associate profile 2 register CFB0030f271d9a8

!
dspfarm
!
dspfarm profile 1 transcode
 codec g711lulaw packetization-period 30
 codec g711alaw packetization-period 30
 codec g729r8 packetization-period 30
 codec g729ar8 packetization-period 30
 codec g723r63 packetization-period 30
 codec g723r53 packetization-period 30
 associate resource-pool xcode
!
dspfarm profile 3 conference adhoc
 codec g711lulaw packetization-period 30
 codec g711alaw packetization-period 30
 codec g729r8 packetization-period 30
 codec g729ar8 packetization-period 30
 codec g723r63 packetization-period 30
 codec g723r53 packetization-period 30
 associate resource-pool CFB

!

!
line con 0
line vty 0 4
 login
!
!
end

```

CMM Media Card (WS-SVC-CMM-ACT) and Resource Pool Configuration Example

The following is sample output that shows media card and resource pool configuration.

```
mediacard 1
  resource-pool mtp1 dsps 4
!
mediacard 2
  resource-pool xcoder3 dsps 4
  sccp local GigabitEthernet1/0
  sccp ccm 10.1.1.8 identifier 1
  sccp ccm 10.1.1.58 identifier 2
  sccp
!
  sccp ccm group 1
    associate ccm 1 priority 1
    associate ccm 2 priority 2
    associate profile 1 register MTP0003feacc83f
    associate profile 2 register MTP0003feacc840
!
  dspfarm
!
  dspfarm profile 1 mtp
    codec g711ulaw packetization-period 30
    codec g711alaw packetization-period 30
    associate resource-pool mtp1
!
  dspfarm profile 2 transcode
    codec g711ulaw packetization-period 30
    codec g711alaw packetization-period 30
    codec g729r8 packetization-period 30
    codec g729ar8 packetization-period 30
    codec g723r63 packetization-period 30
    codec g723r53 packetization-period 30
    associate resource-pool xcoder3
```

MGCP Configuration Examples

This section includes the following configuration examples:

- [MGCP T1 PRI with Cisco CallManager and MGCP \(XML\) Configuration Download Example, page 59](#)
- [MGCP T1 CAS with Cisco CallManager and MGCP \(XML\) Configuration Download Example, page 66](#)
- [MGCP E1 PRI with Cisco CallManager and MGCP \(XML\) Configuration Download Example, page 71](#)
- [MGCP FXS with Cisco CallManager and MGCP \(XML\) Configuration Download Example, page 76](#)
- [MGCP FXS with Cisco CallManager Example, page 80](#)

MGCP T1 PRI with Cisco CallManager and MGCP (XML) Configuration Download Example

The following is sample output that shows MGCP T1 PRI with Cisco CallManager and MGCP (XML) configuration download.

```
version 12.2
no parser cache
```

```

no service config
no service single-slot-reload-enable
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname hostname
!
logging rate-limit console 10 except errors
!
ip subnet-zero
ip tcp synwait-time 13
ip domain-name domain.com
ip name-server 10.120.70.3
!
no ip dhcp-client network-discovery
mgcp
mgcp call-agent 10.120.70.3 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode cisco
mgcp sdp simple
mgcp package-capability rtp-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
no mgcp explicit hookstate
call rsvp-sync
isdn switch-type primary-ni
!
!
!
!
!
ccm-manager redundant-host 10.120.70.4
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server CCM
ccm-manager config
!
controller T1 1/0
 framing esf
 clock source line primary
 linecode b8zs
 pri-group timeslots 1-24 service mgcp
!
controller T1 1/1
 framing esf
 clock source line secondary 1
 linecode b8zs
 pri-group timeslots 1-24 service mgcp
!
controller T1 1/2
 framing esf
 clock source line secondary 2
 linecode b8zs
 pri-group timeslots 1-24 service mgcp
!
controller T1 1/3
 framing esf
 clock source line secondary 3
 linecode b8zs
 pri-group timeslots 1-24 service mgcp
!

```

```
controller T1 1/4
  framing esf
  clock source line secondary 4
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 1/5
  framing esf
  clock source line secondary 5
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/0
  framing esf
  clock source line secondary 6
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/1
  framing esf
  clock source line secondary 7
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/2
  framing esf
  clock source line secondary 8
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/3
  framing esf
  clock source line secondary 9
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/4
  framing esf
  clock source line secondary 10
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/5
  framing esf
  clock source line secondary 11
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 3/0
  framing esf
  clock source line secondary 12
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 3/1
  framing esf
  clock source line secondary 13
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 3/2
  framing esf
  clock source line secondary 14
  linecode b8zs
```

```

    pri-group timeslots 1-24 service mgcp
    !
controller T1 3/3
    framing esf
    clock source line secondary 15
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
    !
controller T1 3/4
    framing esf
    clock source line secondary 16
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
    !
controller T1 3/5
    framing esf
    clock source line secondary 17
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
    !
!
interface GigabitEthernet1/0
    ip address 10.120.70.244 255.255.255.0
    no keepalive
    no negotiation auto
    !
interface Serial1/0:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn T306 30000
    isdn bind-13 ccm-manager
    no cdp enable
    !
interface Serial1/1:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn T306 30000
    isdn bind-13 ccm-manager
    no cdp enable
    !
interface Serial1/2:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn T306 30000
    isdn bind-13 ccm-manager
    no cdp enable
    !
interface Serial1/3:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn T306 30000
    isdn bind-13 ccm-manager
    no cdp enable
    !
interface Serial1/4:23
    no ip address

```

```
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial1/5:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial2/0:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial2/1:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial2/2:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial2/3:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial2/4:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial2/5:23
no ip address
no logging event link-status
```

```
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial3/0:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial3/1:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial3/2:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial3/3:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial3/4:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial3/5:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn T306 30000
isdn bind-13 ccm-manager
no cdp enable
!
ip classless
no ip http server
!
arp 172.16.0.12 0000.2100.0000 ARPA
```



```
arp 172.16.0.11 0000.1100.0000 ARPA
!
voice-port 1/0:23
!
voice-port 1/1:23
!
voice-port 1/2:23
!
voice-port 1/3:23
!
voice-port 1/4:23
!
voice-port 1/5:23
!
voice-port 2/0:23
!
voice-port 2/1:23
!
voice-port 2/2:23
!
voice-port 2/3:23
!
voice-port 2/4:23
!
voice-port 2/5:23
!
voice-port 3/0:23
!
voice-port 3/1:23
!
voice-port 3/2:23
!
voice-port 3/3:23
!
voice-port 3/4:23
!
voice-port 3/5:23
!
dial-peer voice 9991023 pots
  application mgcpapp
!
dial-peer voice 9991123 pots
  application mgcpapp
!
dial-peer voice 9991223 pots
  application mgcpapp
!
dial-peer voice 9991323 pots
  application mgcpapp
!
dial-peer voice 9991423 pots
  application mgcpapp
!
dial-peer voice 9991523 pots
  application mgcpapp
!
dial-peer voice 9992023 pots
  application mgcpapp
!
dial-peer voice 9992123 pots
  application mgcpapp
!
dial-peer voice 9992223 pots
  application mgcpapp
```

```

!
dial-peer voice 9992323 pots
  application mgcpapp
!
dial-peer voice 9992423 pots
  application mgcpapp
!
dial-peer voice 9992523 pots
  application mgcpapp
!
dial-peer voice 9993023 pots
  application mgcpapp
!
dial-peer voice 9993123 pots
  application mgcpapp
!
dial-peer voice 9993223 pots
  application mgcpapp
!
dial-peer voice 9993323 pots
  application mgcpapp
!
dial-peer voice 9993423 pots
  application mgcpapp
!
dial-peer voice 9993523 pots
  application mgcpapp
!
!
line con 0
line vty 0 4
!
end

```

MGCP T1 CAS with Cisco CallManager and MGCP (XML) Configuration Download Example

The following is sample output that shows MGCP T1 CAS with Cisco CallManager and MGCP (XML) configuration download.

```

version 12.2
no parser cache
no service config
no service single-slot-reload-enable
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname hostname
!
logging rate-limit console 10 except errors
!
ip subnet-zero
ip tcp synwait-time 13
ip domain-name domain.com
ip name-server 10.120.70.3
!
no ip dhcp-client network-discovery
mgcp
mgcp call-agent 10.120.70.3 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify

```

```
mgcp modem passthrough voip mode cisco
mgcp sdp simple
mgcp package-capability rtp-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
no mgcp explicit hookstate
call rsvp-sync
!
!
!
!
!
ccm-manager redundant-host 10.120.70.4
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server CCM
ccm-manager config
!
controller T1 1/0
    framing esf
    clock source line primary
    linecode b8zs
    ds0-group 1 timeslots 1-24 type e&m-wink-start
!
controller T1 1/1
    framing esf
    clock source line secondary 1
    linecode b8zs
    ds0-group 1 timeslots 1-24 type e&m-wink-start
!
controller T1 1/2
    framing esf
    clock source line secondary 2
    linecode b8zs
    ds0-group 1 timeslots 1-24 type e&m-wink-start
!
controller T1 1/3
    framing esf
    clock source line secondary 3
    linecode b8zs
    ds0-group 1 timeslots 1-24 type e&m-wink-start
!
controller T1 1/4
    framing esf
    clock source line secondary 4
    linecode b8zs
    ds0-group 1 timeslots 1-24 type e&m-wink-start
!
controller T1 1/5
    framing esf
    clock source line secondary 5
    linecode b8zs
    ds0-group 1 timeslots 1-24 type e&m-wink-start
!
controller T1 2/0
    framing esf
    clock source line secondary 6
    linecode b8zs
    ds0-group 1 timeslots 1-24 type e&m-wink-start
!
controller T1 2/1
    framing esf
    clock source line secondary 7
    linecode b8zs
```

```
    ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 2/2
  framing esf
  clock source line secondary 8
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 2/3
  framing esf
  clock source line secondary 9
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 2/4
  framing esf
  clock source line secondary 10
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 2/5
  framing esf
  clock source line secondary 11
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 3/0
  framing esf
  clock source line secondary 12
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 3/1
  framing esf
  clock source line secondary 13
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 3/2
  framing esf
  clock source line secondary 14
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 3/3
  framing esf
  clock source line secondary 15
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 3/4
  framing esf
  clock source line secondary 16
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
controller T1 3/5
  framing esf
  clock source line secondary 17
  linecode b8zs
  ds0-group 1 timeslots 1-24 type e&m-wink-start
  !
  !
interface GigabitEthernet1/0
```

```
ip address 10.120.70.244 255.255.255.0
no keepalive
no negotiation auto
!
ip classless
no ip http server
!
arp 127.0.0.12 0000.2100.0000 ARPA
arp 127.0.0.11 0000.1100.0000 ARPA
!
voice-port 1/0:1
!
voice-port 1/1:1
!
voice-port 1/2:1
!
voice-port 1/3:1
!
voice-port 1/4:1
!
voice-port 1/5:1
!
voice-port 2/0:1
!
voice-port 2/1:1
!
voice-port 2/2:1
!
voice-port 2/3:1
!
voice-port 2/4:1
!
voice-port 2/5:1
!
voice-port 3/0:1
!
voice-port 3/1:1
!
voice-port 3/2:1
!
voice-port 3/3:1
!
voice-port 3/4:1
!
voice-port 3/5:1
!
dial-peer voice 999101 pots
  application mgcpapp
  port 1/0:1
!
dial-peer voice 999111 pots
  application mgcpapp
  port 1/1:1
!
dial-peer voice 999121 pots
  application mgcpapp
  port 1/2:1
!
dial-peer voice 999131 pots
  application mgcpapp
  port 1/3:1
!
dial-peer voice 999141 pots
  application mgcpapp
```

```
port 1/4:1
!
dial-peer voice 999151 pots
  application mgcpapp
  port 1/5:1
!
dial-peer voice 999201 pots
  application mgcpapp
  port 2/0:1
!
dial-peer voice 999211 pots
  application mgcpapp
  port 2/1:1
!
dial-peer voice 999221 pots
  application mgcpapp
  port 2/2:1
!
dial-peer voice 999231 pots
  application mgcpapp
  port 2/3:1
!
dial-peer voice 999241 pots
  application mgcpapp
  port 2/4:1
!
dial-peer voice 999251 pots
  application mgcpapp
  port 2/5:1
!
dial-peer voice 999301 pots
  application mgcpapp
  port 3/0:1
!
dial-peer voice 999311 pots
  application mgcpapp
  port 3/1:1
!
dial-peer voice 999321 pots
  application mgcpapp
  port 3/2:1
!
dial-peer voice 999331 pots
  application mgcpapp
  port 3/3:1
!
dial-peer voice 999341 pots
  application mgcpapp
  port 3/4:1
!
dial-peer voice 999351 pots
  application mgcpapp
  port 3/5:1
!
!
line con 0
line vty 0 4
!
end
```

MGCP E1 PRI with Cisco CallManager and MGCP (XML) Configuration Download Example

The following is sample output that shows MGCP E1 PRI with Cisco CallManager and MGCP (XML) configuration download.

```
hostname hostname
!
logging rate-limit console 10 except errors
!
ip subnet-zero
ip tcp synwait-time 13
ip domain-name domain.com
ip name-server 10.0.0.0

!
no ip dhcp-client network-discovery
mgcp
mgcp call-agent 10.1.1.8 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode cisco
mgcp sdp simple
mgcp package-capability rtp-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
no mgcp explicit hookstate
call rsvp-sync
isdn switch-type primary-net5
!
!
!
!
!
ccm-manager redundant-host 10.1.1.9
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server CCM
ccm-manager config
!
controller E1 1/0
  clock source line primary
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/1
  clock source line secondary 1
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/2
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/3
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/4
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/5
  pri-group timeslots 1-31 service mgcp
!
controller E1 2/0
  pri-group timeslots 1-31 service mgcp
!
controller E1 2/1
```

```

    pri-group timeslots 1-31 service mgcp
    !
  controller E1 2/2
    pri-group timeslots 1-31 service mgcp
    !
  controller E1 2/3
    pri-group timeslots 1-31 service mgcp
    !
  controller E1 2/4
    pri-group timeslots 1-31 service mgcp
    !
  controller E1 2/5
    pri-group timeslots 1-31 service mgcp
    !
  controller E1 3/0
    pri-group timeslots 1-31 service mgcp
    !
  controller E1 3/1
    pri-group timeslots 1-31 service mgcp
    !
  controller E1 3/2
    pri-group timeslots 1-31 service mgcp
    !
  controller E1 3/3
    pri-group timeslots 1-31 service mgcp
    !
  controller E1 3/4
    pri-group timeslots 1-31 service mgcp
    !
  controller E1 3/5
    pri-group timeslots 1-31 service mgcp
    !
    !
  interface GigabitEthernet1/0
    ip address 10.1.1.19 255.255.255.0
    no keepalive
    no negotiation auto
    !
  interface Serial1/0:15
    no ip address
    no logging event link-status
    isdn switch-type primary-net5
    isdn incoming-voice voice
    isdn T310 30000
    isdn bind-13 ccm-manager
    no cdp enable
    !
  interface Serial1/1:15
    no ip address
    no logging event link-status
    isdn switch-type primary-net5
    isdn incoming-voice voice
    isdn T310 30000
    isdn bind-13 ccm-manager
    no cdp enable
    !
  interface Serial1/2:15
    no ip address
    no logging event link-status
    isdn switch-type primary-net5
    isdn incoming-voice voice
    isdn T310 30000
    isdn bind-13 ccm-manager
    no cdp enable

```



```
!  
interface Serial1/3:15  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-net5  
  isdn incoming-voice voice  
  isdn T310 30000  
  isdn bind-13 ccm-manager  
  no cdp enable  
!  
interface Serial1/4:15  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-net5  
  isdn incoming-voice voice  
  isdn T310 30000  
  isdn bind-13 ccm-manager  
  no cdp enable  
!  
interface Serial1/5:15  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-net5  
  isdn incoming-voice voice  
  isdn T310 30000  
  isdn bind-13 ccm-manager  
  no cdp enable  
!  
interface Serial2/0:15  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-net5  
  isdn incoming-voice voice  
  isdn T310 30000  
  isdn bind-13 ccm-manager  
  no cdp enable  
!  
interface Serial2/1:15  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-net5  
  isdn incoming-voice voice  
  isdn T310 30000  
  isdn bind-13 ccm-manager  
  no cdp enable  
!  
interface Serial2/2:15  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-net5  
  isdn incoming-voice voice  
  isdn T310 30000  
  isdn bind-13 ccm-manager  
  no cdp enable  
!  
interface Serial2/3:15  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-net5  
  isdn incoming-voice voice  
  isdn T310 30000  
  isdn bind-13 ccm-manager  
  no cdp enable  
!
```

```
interface Serial2/4:15
  no ip address
  no logging event link-status
  isdn switch-type primary-net5
  isdn incoming-voice voice
  isdn T310 30000
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial2/5:15
  no ip address
  no logging event link-status
  isdn switch-type primary-net5
  isdn incoming-voice voice
  isdn T310 30000
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial3/0:15
  no ip address
  no logging event link-status
  isdn switch-type primary-net5
  isdn incoming-voice voice
  isdn T310 30000
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial3/1:15
  no ip address
  no logging event link-status
  isdn switch-type primary-net5
  isdn incoming-voice voice
  isdn T310 30000
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial3/2:15
  no ip address
  no logging event link-status
  isdn switch-type primary-net5
  isdn incoming-voice voice
  isdn T310 30000
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial3/3:15
  no ip address
  no logging event link-status
  isdn switch-type primary-net5
  isdn incoming-voice voice
  isdn T310 30000
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial3/4:15
  no ip address
  no logging event link-status
  isdn switch-type primary-net5
  isdn incoming-voice voice
  isdn T310 30000
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial3/5:15
```

```
no ip address
no logging event link-status
isdn switch-type primary-net5
isdn incoming-voice voice
isdn T310 30000
isdn bind-13 ccm-manager
no cdp enable
!
ip classless
no ip http server
!
arp 172.16.0.12 0000.2100.0000 ARPA
arp 172.16.0.11 0000.1100.0000 ARPA
!
voice-port 1/0:15
!
voice-port 1/1:15
!
voice-port 1/2:15
!
voice-port 1/3:15
!
voice-port 1/4:15
!
voice-port 1/5:15
!
voice-port 2/0:15
!
voice-port 2/1:15
!
voice-port 2/2:15
!
voice-port 2/3:15
!
voice-port 2/4:15
!
voice-port 2/5:15
!
voice-port 3/0:15
!
voice-port 3/1:15
!
voice-port 3/2:15
!
voice-port 3/3:15
!
voice-port 3/4:15
!
voice-port 3/5:15
!
dial-peer voice 9991015 pots
  application mgcpapp
!
dial-peer voice 9991115 pots
  application mgcpapp
!
dial-peer voice 9991215 pots
  application mgcpapp
!
dial-peer voice 9991315 pots
  application mgcpapp
!
dial-peer voice 9991415 pots
  application mgcpapp
```

```

!
dial-peer voice 9991515 pots
  application mgcpapp
!
dial-peer voice 9992015 pots
  application mgcpapp
!
dial-peer voice 9992115 pots
  application mgcpapp
!
dial-peer voice 9992215 pots
  application mgcpapp
!
dial-peer voice 9992315 pots
  application mgcpapp
!
dial-peer voice 9992415 pots
  application mgcpapp
!
dial-peer voice 9992515 pots
  application mgcpapp
!
dial-peer voice 9993015 pots
  application mgcpapp
!
dial-peer voice 9993115 pots
  application mgcpapp
!
dial-peer voice 9993215 pots
  application mgcpapp
!
dial-peer voice 9993315 pots
  application mgcpapp
!
dial-peer voice 9993415 pots
  application mgcpapp
!
dial-peer voice 9993515 pots
  application mgcpapp
!
!
line con 0
line vty 0 4

```

MGCP FXS with Cisco CallManager and MGCP (XML) Configuration Download Example

The following is sample output that shows MGCP FXS with Cisco CallManager and MGCP (XML) configuration download.

```

Building configuration...
Current configuration :4881 bytes
!
! Last configuration change at 16:52:51 PDS Tue Jul 8 2003
! NVRAM config last updated at 16:52:56 PDS Tue Jul 8 2003
!
version 12.2
no service config
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!

```

```
hostname hostname
!
logging buffered 20000000 debugging
enable password password
!
clock timezone PST -8
clock summer-time PDS recurring
ip subnet-zero
ip tcp synwait-time 13
ip domain list cisco.com
ip domain list rshtst.com
ip host S-CCM2 10.0.107.5
ip host S-CCM1 10.0.107.4
ip host ccmout 10.0.107.6
ip name-server 10.0.107.6
ip name-server 172.16.10.70
!
!
!
!
ccm-manager redundant-host S-CCM2
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 10.0.107.4
ccm-manager config
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
!
interface GigabitEthernet1/0
ip address 10.10.10.20 255.255.255.0
ip helper-address 10.0.107.6
no negotiation auto
no keepalive
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.10.10.1
no ip http server
!
!
arp 172.16.0.40 0000.0400.0000 ARPA
arp 172.16.0.12 0000.2100.0000 ARPA
arp 172.16.0.11 0000.1100.0000 ARPA
call rsvp-sync
!
voice-port 1/0
echo-cancel coverage 64
caller-id enable
!
voice-port 1/1
echo-cancel coverage 64
caller-id enable
!
voice-port 1/2
echo-cancel coverage 64
caller-id enable
!
voice-port 1/22
echo-cancel coverage 64
caller-id enable
!
voice-port 1/23
```

```
echo-cancel coverage 64
caller-id enable
!
mgcp
mgcp call-agent S-CCM1 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
dial-peer voice 99910 pots
application mgcpapp
port 1/0
!
dial-peer voice 99911 pots
application mgcpapp
port 1/1
!
dial-peer voice 99912 pots
application mgcpapp
port 1/2
!
dial-peer voice 99913 pots
application mgcpapp
port 1/3
!
dial-peer voice 99914 pots
application mgcpapp
port 1/4
!
dial-peer voice 99915 pots
application mgcpapp
port 1/5
!
dial-peer voice 99916 pots
application mgcpapp
port 1/6
!
dial-peer voice 99917 pots
application mgcpapp
port 1/7
!
dial-peer voice 99918 pots
application mgcpapp
port 1/8
!
dial-peer voice 99919 pots
application mgcpapp
port 1/9
!
dial-peer voice 999110 pots
application mgcpapp
port 1/10
!
dial-peer voice 999111 pots
application mgcpapp
```

```
port 1/11
!
dial-peer voice 999112 pots
application mgcpapp
port 1/12
!
dial-peer voice 999113 pots
application mgcpapp
port 1/13
!
dial-peer voice 999114 pots
application mgcpapp
port 1/14
!
dial-peer voice 999115 pots
application mgcpapp
port 1/15
!
dial-peer voice 999116 pots
application mgcpapp
port 1/16
!
dial-peer voice 999117 pots
application mgcpapp
port 1/17
!
dial-peer voice 999118 pots
application mgcpapp
port 1/18
!
dial-peer voice 999119 pots
application mgcpapp
port 1/19
!
dial-peer voice 999120 pots
application mgcpapp
port 1/20
!
dial-peer voice 999121 pots
application mgcpapp
port 1/21
!
dial-peer voice 999122 pots
application mgcpapp
port 1/22
!
dial-peer voice 999123 pots
application mgcpapp
port 1/23
!
alias exec sum show voice call sum | inc g
alias exec fax show voice call sum | inc FAX
!
line con 0
exec-timeout 0 0
line vty 0 4
exec-timeout 0 0
no login
!
ntp authenticate
ntp clock-period 17180129
ntp source GigabitEthernet1/0
ntp server 172.16.10.80 prefer
ntp server 172.16.10.150
```

```
!
end
```

MGCP FXS with Cisco CallManager Example

The following is sample output that shows MGCP FXS with Cisco CallManager configuration.

```
Building configuration...
Current configuration :2341 bytes
!
version 12.2
no service config
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname hostname
!
logging buffered 20000000 debugging
enable password password
!
clock timezone PST -8
clock summer-time PDS recurring
ip subnet-zero
ip domain list domain.com
ip domain list domain2.com
ip host S-CCM2 10.0.107.5
ip host S-CCM1 10.0.107.4
ip host ccmout 10.0.107.6
ip name-server 10.0.107.6
ip name-server 172.16.10.70
!
!
!
ccm-manager config server 10.0.07.4
ccm-manager config
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
!
interface GigabitEthernet1/0
ip address 10.10.10.20 255.255.255.0
ip helper-address 10.6.107.6
no negotiation auto
no keepalive
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.10.10.1
no ip http server
!
!
arp 172.16.0.40 0000.0400.0000 ARPA
arp 172.16.0.12 0000.2100.0000 ARPA
arp 172.16.16.11 0000.1100.0000 ARPA
call rsvp-sync
!
voice-port 1/0
echo-cancel coverage 64
!
voice-port 1/1
```



```

echo-cancel coverage 64
!
voice-port 1/22
echo-cancel coverage 64
!
voice-port 1/23
echo-cancel coverage 64
!
mgcp profile default
!
alias exec sum show voice call sum | inc g
alias exec fax show voice call sum | inc FAX
!
line con 0
exec-timeout 0 0
line vty 0 4
exec-timeout 0 0
no login
!
ntp authenticatntp clock-period 17180129
ntp source GigabitEthernet1/0
ntp server 172.16.10.80 prefer
ntp server 172.16.10.150
!
end

```

QSIG Configuration Examples

This section includes the following configuration examples:

- [QSIG Backhaul with Cisco CallManager Example, page 81](#)

QSIG Backhaul with Cisco CallManager Example

The following is sample output that shows CMM QSIG backhaul with Cisco CallManager configuration.

```

ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 10.1.1.1
interface Serial1/3:23
 no ip address
 no logging event link-status
 isdn switch-type primary-qsig
 isdn incoming-voice voice
 isdn bind-13 ccm-manager
 no cdp enable

mgcp
mgcp call-agent 10.1.1.1 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
!
mgcp profile default

```

Where to Go Next

For specific configuration information for the Catalyst 6500 series and Cisco 7600 series, see the following documents:

- [Cisco 6500 and 7600 Series Manager Installation Guide, Release 2.1](#)
- [Cisco 6500 and 7600 Series Manager User Guide, Release 2.1](#)
- [Cisco 6500 and 7600 Series Manager Release Notes, Release 2.1](#)

For specific installation and configuration information for the CMM, see the following documents:

- [Catalyst 6500 Series and Cisco 7600 Series CMM Installation and Verification Note](#)
- [Release Notes for Catalyst 6500 Series and Cisco 7600 Series Communication Media Module Software](#)
- [Release Notes for Cisco IOS Release 12.3T](#)
- [Release Notes for Cisco IOS Release 12.4](#)

Additional References

The following sections provide additional references related to Cisco Communication Media Module Voice Features for Catalyst 6500 Series and Cisco 7600 Series.

Related Documents

Related Topic	Document Title
Cisco 6500 and Cisco 7600 series CMM installation	Catalyst 6500 Series and Cisco 7600 Series CMM Installation and Verification Note
Cisco 6500 series and Cisco 7600 series CMM upgrade	FPGA Upgrade Procedures for Cisco Catalyst 6500 Series and the Cisco 7600 Series Communication Media Modules
Cisco 6500 and Cisco 7600 series CMM disaster recovery	Catalyst 6500 Series and Cisco 7600 Series CMM Installation and Verification Note
Cisco 6500 series installation	Catalyst 6500 Series Switch Module Installation Guide
Cisco 7600 series installation	Cisco 7600 Series Router Module Installation Guide
Cisco 6500 series configuration	Catalyst 6500 Series Switch Cisco IOS Software Configuration Guide
Cisco 7600 Series configuration	Cisco 7600 Series Router Cisco IOS Software Configuration Guide
Cisco 6500 Series commands	Catalyst 6500 Series Switch Cisco IOS Command Reference
Cisco 7600 Series commands	Cisco 7600 Series Router Cisco IOS Command Reference
Cisco IOS voice commands	Cisco IOS Voice Command Reference
Cisco IOS debug commands	Cisco IOS Debug Command Reference
Configuring Cisco CallManager to work with the CMM	Cisco CallManager documentation

Related Topic	Document Title
Full set of Cisco IOS voice features, including library preface, glossary, and other documents	Cisco IOS Voice Configuration Library
Release Notes for the Catalyst 6500 series and Cisco 7600 series CMM	Release Notes for Catalyst 6500 Series and Cisco 7600 Series Communication Media Module Software
Release Notes for your Cisco IOS release	Release Notes for Cisco IOS Release 12.3T Release Notes for Cisco IOS Release 12.4 Release Notes for Cisco IOS Release 12.4T
VoIP QoS and Cisco CallManager	Classifying VoIP Signaling and Media with DSCP for QoS

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified.	—

MIBs

MIBs	MIBs Link
<ul style="list-style-type: none"> • CISCO-FLASH-MIB • CISCO dial control MIB extension to RFC 2128 • CISCO-VOICE-DIAL-CONTROL-MIB Voice Dial Control MIB • CISCO-VOICE-IF-MIB Voice Interface MIB • CISCO-VOICE-ANALOG-IF-MIB Voice Analog Interface MIB • CISCO-DSP-MGMT-MIB Digital Signal Processing Management MIB • Ethernet MIBs: RFC 1157 SNMP • RFC1643 Ethernet • RFC1213 MIB II • RFC1573 MIB II Interface extensions • CISCO-CAS-IF-MIB • ISDN-MIB • CISCO-ENVMON-MIB • CAS-INTERFACES-MIB • RFC1406-MIB ds1 • OLD-CISCO-CHASSIS-MIB (CANA) • IF-MIB • SNMPv2-SMI • SNMPv2-MIB • ENTITY-MIB RFC 2737 • CISCO-CONFIG-MAN-MIB • CISCO-IMAGE-MIB • CISCO-ENTITY-EXT-MIB • IP-MIB • TCP-MIB • UDP-MIB • CISCO-QUEUE-MIB • CISCO-PROCESS-MIB • CISCO-CDP-MIB • SNMP-MPD-MIB • CISCO-FTP-CLIENT-MIB 	<p>To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:</p> <p>http://www.cisco.com/go/mibs</p>

RFCs

RFCs	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified.	—

Technical Assistance

Description	Link
The Cisco Technical Support & Documentation website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport

Command Reference

This section documents new commands. All other commands used with this feature are documented in the Cisco IOS Release 12.3 command reference publications.

- [auto-config](#), page 86
- [debug auto-config](#), page 87
- [debug mediacard](#), page 89
- [debug sccp config](#), page 91
- [default \(auto-config application\)](#), page 93
- [mediacard](#), page 94
- [resource-pool \(mediacard\)](#), page 95
- [retries \(auto-config application\)](#), page 96
- [server \(auto-config application\)](#), page 97
- [show auto-config](#), page 98
- [show mediacard](#), page 100
- [shutdown \(auto-config application\)](#), page 103
- [shutdown \(mediacard\)](#), page 104
- [timeout \(auto-config application\)](#), page 105

auto-config

To enable auto-configuration or to enter auto-config application configuration mode for the Skinny Client Control Protocol (SCCP) application, use the **auto-config** command in global configuration mode. To disable auto-configuration, use the **no** form of this command.

auto-config [application sccp]

no auto-config

Syntax Description	application sccp	Enters auto-config application configuration mode for the SCCP application.
---------------------------	-------------------------	---

Defaults	Auto-configuration is disabled.
-----------------	---------------------------------

Command Modes	Global configuration
----------------------	----------------------

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module for the SCCP application.
12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.	

Examples The following example shows the **auto-config** command used to enter auto-configuration application configuration mode for the SCCP application and the **no shutdown** command used to enable the SCCP application for download:

```
Router(config)# auto-config application sccp
Router(auto-config-app)# no shutdown
```

Related Commands	Command	Description
	shutdown (auto-config application)	Disables an auto-configuration application for download.
show auto-config	Displays the current status of auto-configuration applications.	

debug auto-config

To enable debugging for auto-configuration applications, use the **debug auto-config** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

```
debug auto-config {all | errors | events | parser}
```

```
no debug auto-config {all | errors | events | parser}
```

Syntax Description	all	Displays all Auto-Config debug trace.
	errors	Displays Auto-Config errors.
	events	Displays Auto-Config events.
	parser	Displays Auto-Config parser.

Defaults Disabled

Command Modes Privileged EXEC

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.
	12.4(3)	This command was integrated into Cisco IOS Release 12.4(3).

Examples The following example shows the **debug auto-config** command used to enable debugging for auto-configuration applications and to display auto-config events:

```
Router# debug auto-config events
...
Feb  8 02:17:31.119: dnld_app_check_state(0x628C8164)...
Feb  8 02:17:31.123: dnld_chk_app_handle(0x628C8164)
Feb  8 02:17:31.123: dnld_app_check_state: appl = 0x628C8164, state = 0x11
...
```

[Table 14 on page 88](#) describes significant fields shown in the display.

Table 14 *debug auto-config Field Descriptions*

Field	Description
0x628C8164	Identifies the application handle, an auto-generated number for debugging.
0x11	Shows the state of the application. Statuses as indicated are as follows: 0x11—Registered and enabled. 0x1—Download application is enabled. 0x10—Download application is registered.

Related Commands

Command	Description
auto-config	Enables auto-configuration or enters auto-config application configuration mode for the Skinny Client Control Protocol (SCCP) application.
debug sccp config	Enables Skinny Client Control Protocol (SCCP) event debugging.
show auto-config	Displays the current status of auto-configuration applications.

debug mediacard

To display Digital Signal Processor Resource Manager (DSPRM) debugging information, use the **debug mediacard** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug mediacard {all | errors | events | message}

no debug mediacard {all | errors | events | message}

Syntax Description		
	all	Debugs DSPRM errors, events, and messages.
	errors	Debugs DSPRM errors.
	events	Debugs DSPRM events.
	message	Debugs DSPRM messages.

Defaults No default behavior or values

Command Modes Privileged EXEC

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.
	12.4(3)	This command was integrated into Cisco IOS Release 12.4(3).

Usage Guidelines Use the **debug mediacard errors** command to debug active calls. You should use the **debug mediacard all** command during minimum traffic periods only; using the **debug mediacard all** command during active calls can significantly impact system performance.

Examples The following is sample output from the **debug mediacard** command:

```
Router# debug mediacard messages

Media Card service messages debugging is on
*Mar 1 07:45:06.362: > CREATE_CONFERENCE (0x1) , pktLen 56, confId 1, instId 1
7483, seqNo 27983, Payload (24 bytes): confType 3, agcMode 1, spkrUpdateReportMo
de 1, maxActSpkr 3
*Mar 1 07:45:06.362: > CREATE_CHANNEL (0x64) , pktLen 100, confId 1, instId 26
625, seqNo 27984, Payload (68 bytes): rxCodecType 1, suppressRx 1, rxCNG 2, rxPL
C 2, rxVAD 2, rxToneDet 1, rxSpkrPriority 1, rxInactiveTimeOut 7200, rxPacketSiz
e 20, rxRTPPayloadType 0
*Mar 1 07:45:06.362: txCodecType 2, suppressTx 1, txVAD 1, AGC 1, txSSRC 167
860472, txPacketSize 20, txRTPPayloadType 0
*Mar 1 07:45:06.362: < CREATE_CONFERENCE_ACK (0x4001) , pktLen 116, confId 1,
instId 0, seqNo 27983, Payload (84 bytes): status 0 (Normal Completion), param1
3, param2 0
```

debug mediacard

```
*Mar 1 07:45:06.362: < CREATE_CHANNEL_ACK (0x4064) , pktLen 116, confId 1, instId 26625, seqNo 27984, Payload (84 bytes): status 0 (Normal Completion), param1 0, param2 0
*Mar 1 07:45:06.362: > CREATE_CONFERENCE (0x1) , pktLen 56, confId 2, instId 26625, seqNo 27985, Payload (24 bytes): confType 3, agcMode 1, spkrUpdateReportMode 1, maxActSpkr 3
*Mar 1 07:45:06.362: > CREATE_CHANNEL (0x64) , pktLen 100, confId 2, instId 26626, seqNo 27986, Payload (68 bytes): rxCodecType 2, suppressRx 1, rxCNG 2, rxPLC 2, rxVAD 2, rxToneDet 1, rxSpkrPriority 1, rxInactiveTimeOut 7200, rxPacketSize 20, rxRTPPayloadType 0
*Mar 1 07:45:06.366: txCodecType 1, suppressTx 1, txVAD 1, AGC 1, txSSRC 167858296, txPacketSize 20, txRTPPayloadType 0
*Mar 1 07:45:06.366: < CREATE_CONFERENCE_ACK (0x4001) , pktLen 116, confId 2, instId 0, seqNo 27985, Payload (84 bytes): status 0 (Normal Completion), param1 3, param2 0
```

Router# debug mediacard events

Media Card service events debugging is on

```
*Mar 1 07:47:53.926: ms_ac_open_rtp_sockets: loc_ipaddr = 10.1.80.24 loc_mac<003.feac.c842> rem_ip<0.0.0.0> rem_port<0>
*Mar 1 07:47:53.926: ms_ac_get_unique_udp_port: rtcp_socket = 6255F490
*Mar 1 07:47:53.926: ms_ac_get_unique_udp_port: SLOT3 Port<3450> is assigned!
*Mar 1 07:47:53.926: ms_ac_open_local_rtp: rtpinfo 64382A3C, local_port =23930
*Mar 1 07:47:53.926: ms_ac_rtp_enq: Sent msg 101 to DSPFARM
*Mar 1 07:47:53.926: ms_ac_open_remote_rtp: rtpinfo 64382A3C, loc_ipaddr = 10.1.80.24 loc_udp_prt <23930> ,loc_mac<0003.feac.c842>
*Mar 1 07:47:53.926: ms_ac_open_remote_rtp: remote_ipaddr = 10.1.2.15 remote_udp_prt <17932>
*Mar 1 07:47:53.926: ms_ac_nexthop_macaddr idb<630BDFCC> nexthop<10.1.80.1>
*Mar 1 07:47:53.926: ms_ac_nexthop_macaddr ptr<6301F5AC> through<GigabitEthernet1/0> nexthop<10.1.80.1>
*Mar 1 07:47:53.926: ms_ac_after_found_mac <10.1.2.15>'s mac <00d0.002a.7400> found
*Mar 1 07:47:53.926: ms_ac_check_xcode_rem_ip: rtpinfo <64382A3C> other_rtpinfo <0>
*Mar 1 07:47:53.926: ms_ac_rtp_enq: Sent msg 103 to DSPFARM
*Mar 1 07:47:53.942: ms_ac_open_rtp_sockets: loc_ipaddr = 10.1.80.24 loc_mac<003.feac.c842> rem_ip<0.0.0.0> rem_port<0>
*Mar 1 07:47:53.942: ms_ac_get_unique_udp_port: rtcp_socket = 6256C9B4
*Mar 1 07:47:53.942: ms_ac_get_unique_udp_port: SLOT3 Port<1778> is assigned!
*Mar 1 07:47:53.942: ms_ac_open_local_rtp: rtpinfo 6438353C, local_port =22258
*Mar 1 07:47:53.942: ms_ac_rtp_enq: Sent msg 101 to DSPFARM
*Mar 1 07:47:53.942: ac_validate_xcode_params: codeDec<2> codeEnc<1> decDur<20> encDur<20>
*Mar 1 07:47:53.942: ac_open_xcode_channel: codeDec<1> codeEnc<2> decDur<20> encDur<20> VADen<0> prf_id<4>
*Mar 1 07:47:53.942: reserve_xcode_resource: reserve xcode resource:codeDec<1> codeEnc<2>
*Mar 1 07:47:53.942: al
```

Related Commands

Command	Description
show mediacard	Displays information about the media card.

debug sccp config

To enable Skinny Client Control Protocol (SCCP) event debugging, use the **debug sccp config** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

```
debug sccp config {all | errors | events | parser}
```

```
no debug sccp config {all | errors | events | parser}
```

Syntax Description	all	Displays all SCCP auto-config debug trace.
	errors	Displays SCCP auto-config errors.
	events	Displays SCCP auto-config events.
	parser	Displays SCCP auto-config parser.

Defaults Disabled

Command Modes Privileged EXEC

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.
	12.4(3)	This command was integrated into Cisco IOS Release 12.4(3).

Examples The following example shows the **debug sccp config** command used to enable SCCP event debugging and to display SCCP auto-configuration events:

```
Router# debug sccp config events
...
Feb  8 02:17:31.119: mp_auto_cfg_request(req_id=2, prof=995, ccm_group_id=0)
Feb  8 02:17:31.123: mp_auto_cfg_is_up: SCCP auto-config is enabled & registered
...
```

[Table 15](#) describes the significant fields shown in the display.

Table 15 *debug sccp config Field Descriptions*

Field	Description
prof=995	Indicates the profile ID. If generated by media processor auto-configuration, profile IDs are preceded by 99.
SCCP auto-config is enabled & registered	Indicates the registration of sccp with auto-config is complete.

■ debug sccp config

Related Commands	Command	Description
	auto-config	Enables auto-configuration or enters auto-config application configuration mode for the Skinny Client Control Protocol (SCCP) application.
	debug auto-config	Enables debugging for auto-configuration applications.
	show auto-config	Displays the current status of auto-configuration applications.

default (auto-config application)

To configure an auto-config application configuration command to its default value, use the **default** command in auto-config application configuration mode.

default *command*

Syntax Description	<i>command</i>	One of the auto-config application configuration commands. Valid choices are as follows: <ul style="list-style-type: none"> • retries • server • shutdown • timeout
---------------------------	----------------	---

Defaults No default behavior or values

Command Modes Auto-config application configuration

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.

Examples The following example shows the **default** command used to set the number of download retry attempts for an auto-configuration application to its default value.

```
Router(auto-config-app)# default retries
```

Related Commands	Command	Description
	auto-config	Enables auto-configuration or enters auto-config application configuration mode for the SCCP application.
	show auto-config	Displays the current status of auto-config applications.

mediacard

To enter **mediacard** configuration mode and configure a Communications Media Module (CMM) media card, use the **mediacard** command in global configuration mode.

mediacard *slot*

Syntax Description	<i>slot</i>	Specifies the slot number for the media card to be configured. Valid values are from 1 to 4.
---------------------------	-------------	--

Defaults	No default behavior or values
-----------------	-------------------------------

Command Modes	Global configuration mode
----------------------	---------------------------

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.
	12.4(3)	This command was integrated into Cisco IOS Release 12.4(3).

Usage Guidelines	Mediacard configuration mode is used to configure parameters related to the selected media card, such as digital signal processor (DSP) resource pools.
-------------------------	---

Examples	The following example shows how you configure DSP resources on the media card in slot 1:
-----------------	--

```
mediacard 1
```

Related Commands	Command	Description
	debug mediacard	Displays debugging information for Digital Signal Processor Resource Manager (DSPRM).
	show mediacard	Displays information about the selected media card.

resource-pool (mediacard)

To create a Digital Signal Processor (DSP) resource pool on ad-hoc conferencing and transcoding port adapters, use the **resource-pool** command in mediacard configuration mode. To remove the DSP resource pool and release the associated DSP resources, use the **no** form of this command.

resource-pool *identifier* **dsps** *number*

no resource-pool *identifier* **dsps** *number*

Syntax Description	<i>identifier</i>	Identifies the DSP resource to be configured. Valid values consist of alphanumeric characters, plus '_' and '-'.
	<i>number</i>	Specifies the number of DSPs to be allocated for the specified resource pool. Valid values are from 1 to 4.

Defaults No default behavior or values

Command Modes Mediacard configuration

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.
	12.4(3)	This command was integrated into Cisco IOS Release 12.4(3).

Usage Guidelines The DSP resource pool identifier should be unique across the same Communication Media Module (CMM). Removing a resource pool may cause the profile using that resource pool to be disabled if it is the last resource pool in the profile.

Examples The following example shows how to create a DSP resource pool:

```
resource-pool headquarters_location1 dsps 2
```

Related Commands	Command	Description
	debug mediacard	Displays debugging information for Digital Signal Processor Resource Manager (DSPRM).
	show mediacard	Displays information about the selected media card.

retries (auto-config application)

To set the number of download retry attempts for an auto-configuration application, use the **retries** command in auto-config application configuration mode. To reset to the default, use the **no** form of this command.

retries *number*

no retries

Syntax Description	<i>number</i>	Specifies the download retry attempts. Valid range is 1 to 3.
---------------------------	---------------	---

Defaults	The default value is 2.
-----------------	-------------------------

Command Modes	Auto-config application configuration
----------------------	---------------------------------------

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.	

Examples	The following example shows the retries command used to set the number of retries for an auto-configuration application to 3:
-----------------	--

```
Router(auto-config-app)# retries 3
```

Related Commands	Command	Description
	auto-config	Enables auto-configuration or enters auto-config application configuration mode for the SCCP application.
show auto-config	Displays the current status of auto-configuration applications.	

server (auto-config application)

To configure the IP address or name of the TFTP server for an auto-configuration application, use the **server** command in auto-config application configuration mode. To remove the IP address or name, use the **no** form of this command.

```
server ip-address | domain-name [ip-address | domain-name] [ip-address | domain-name]
```

```
no server
```

Syntax Description		
	<i>ip-address</i>	Specifies the IP address of the TFTP server.
	<i>domain-name</i>	Specifies the domain name of the TFTP server.

Defaults No default behavior or values.

Command Modes Auto-config application configuration

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.

Examples The following example shows the **server** command used to configure two TFTP servers for an auto-configuration application:

```
Router(auto-config-app)# server 172.18.240.45 172.18.240.55
```

Related Commands	Command	Description
	auto-config	Enables auto-configuration or enters auto-config application configuration mode for the Skinny Client Control Protocol (SCCP) application.
	show auto-config	Displays the current status of auto-config applications.

show auto-config

To display the current status of auto-configuration applications, use the **show auto-config** command in privileged EXEC mode.

show auto-config [application sccp]

Syntax Description	application sccp	Displays the current status of only the Skinny Client Control Protocol (SCCP) application.
Command Modes	Privileged EXEC	
Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.

Examples

The following is sample output from **show auto-config** command:

```
Router# show auto-config application sccp
 auto-config application: sccp
 auto-config admin state: ENABLED & ACTIVE
 download retries: (3)
 download timeout: no timeout, continuous retry
 server(s): 172.19.240.41 172.19.240.40 172.19.240.42
 Configuration Download statistics:
   Download Attempted           : 2
   Download Successful          : 2
   Download Failed              : 0
   Configuration Attempted     : 2
   Configuration Successful     : 2
   Configuration Failed(parsing): 0
   Configuration Failed(config) : 0
 Configuration Error History:
```

[Table 16](#) describes the significant fields shown in the display.

Table 16 *show auto-config Field Descriptions*

Field	Description
ENABLED	Shows auto-config application: SCCP is enabled.
ACTIVE	Shows the SCCP application has registered to use auto-configuration.
timeout	Shows timeout is set to 0, continuous retry without timeout.

Related Commands	Command	Description
	auto-config	Enables auto-configuration or enters auto-config application configuration mode for the SCCP application.
	debug auto-config	Enables debugging for auto-configuration applications.
	debug sccp config	Enables SCCP event debugging.

show mediacard

To display configuration information about media card conferencing, transcoding, Media Termination Points (MTPs) and Digital Signal Processors (DSPs), use the **show mediacard** command in privileged EXEC mode.

show mediacard *slot* [**conference** | **connections** | **dsp** *number*]

Syntax Description		
	<i>slot</i>	Specifies the slot number of the card to be displayed. Valid values are from 1 to 4.
	conference	(Optional) Displays information on ad-hoc conferences.
	connections	(Optional) Displays information on media card connections.
	dsp <i>number</i>	(Optional) Displays information on the specified DSP resource pool. The <i>number</i> argument ranges in value from 1 to 4.

Defaults No default behavior or values

Command Modes Privileged EXEC

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.
	12.4(3)	This command was integrated into Cisco IOS Release 12.4(3).

Usage Guidelines Use this command to display media card status, statistics, and configuration information.

Examples The following is sample output for the **show mediacard** command:

```
Router# show mediacard 3
Media Card 3: WS-SVC-CMM-ACT
Service: Adhoc/Meetme conference and MTP/Transcoding
State: ENABLE
DSP image version (all DSPs): 1.1(06), build: 1.1(06)
DSP status:
  DSP 1 | DSP 2 | DSP 3 | DSP 4
  -----|-----|-----|-----
  alive | alive | alive | alive
Total 128 DSP channels, 1 active
Resource pools          | DSPs | Used by Active profile
-----|-----|-----
Pool1                   |    2 |          1
Pool2                   |    1 |          1
Pool3                   |    1 |          2
```

```

Router# show mediacard 3 dsp 3
DSP image version (all DSPs): 1.1(06), build: 1.1(06)
Card DSP status Chan status RxPkts TxPkts
  3   3  alive  1   idle    -     -
      2   idle    -     -
      3   idle    -     -
      4   idle    -     -
      5   idle    -     -
      6   idle    -     -
      7   idle    -     -
      8   idle    -     -
      9   idle    -     -
     10   idle    -     -
     11   idle    -     -
     12   idle    -     -
     13   idle    -     -
     14   idle    -     -
     15   idle    -     -
     16   idle    -     -
     17   idle    -     -
     18   idle    -     -
     19   idle    -     -
     20   idle    -     -
     21   idle    -     -
     22   idle    -     -
     23   idle    -     -
     24   idle    -     -
     25   idle    -     -
     26   idle    -     -
     27   idle    -     -
     28   idle    -     -
     29   idle    -     -
     30   idle    -     -
     31   idle    -     -
     32   idle    -     -

Total 32 DSP channels, 0 active

```

```

Router# show mediacard conference
Id Slot/ RxPkts TxPkts RPort SPort Remote-Ip
   DSP/Ch
0  2/4/1 32024 16498  27004 27020  10.7.16.87
0  2/4/2 17368 17192  17582 17583  10.7.16.80
0  2/4/3 21904 16990  26155 26168  10.7.16.94
Total: 3

```

```

Router# show mediacard connections
Id Type Slot/ RxPkts TxPkts RPort SPort Remote-Ip
   DSP/Ch
0  conf 3/4/1 24028 16552 0      0      10.7.16.87
Total: 1

```

```

Router# show mediacard connections
Id Type Slot/ RxPktsTxPktsRPort SPort Remote-Ip
   DSP/Ch
0  mtp  3/1/1 16544 16488 1046  1046  10.1.2.15
0  mtp  3/1/2 19396 19662 1046  1046  10.1.80.50
0  mtp  3/1/3 17562 20122 626   626   10.1.2.15
0  mtp  3/1/4 17488 17328 626   626   10.1.80.5

```

Table 17 describes the significant fields shown in the display.

Table 17 show mediacard Field Descriptions

Field	Description
RxPkts	Number of packets transmitted
TxPkts	Number of packets received
RPort	Receiving port
SPort	Sending port
Remote-IP	IP address of the remote endpoint

Related Commands

Command	Description
debug mediacard	Displays debugging information for Digital Signal Processor Resource Manager (DSPRM).

shutdown (auto-config application)

To disable an auto-configuration application for download, use the **shutdown** command in auto-config application configuration mode. To enable an auto-configuration application for download, use the **no** form of this command.

shutdown

no shutdown

Syntax Description This command has no keywords or arguments.

Defaults Disabled

Command Modes Auto-config application configuration

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.

Examples The following example shows the **shutdown** command used to enable an auto-configuration application for download:

```
Router(auto-config-app)# no shutdown
```

Related Commands	Command	Description
	auto-config	Enables auto-configuration or enters auto-config application configuration mode for the SCCP application.
	show auto-config	Displays the current status of auto-configuration applications.

shutdown (mediacard)

To disable a selected media card, use the **shutdown** command in mediacard configuration mode. To enable a selected media card, use the **no** form of this command.

shutdown

no shutdown

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values

Command Modes Media card configuration

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.
	12.4(3)	This command was integrated into Cisco IOS Release 12.4(3).

Usage Guidelines Use the **no shutdown** command at the end of media card configuration. If there are any active connections when you disable the media card, the Digital Signal Processor Resource Manager (DSPRM) displays a warning message indicating that the DSP resources allocated on other media cards for some of the resource pool in this media card will be removed or that there are active connections available in this resource pool and prompts you for a response. Profiles that use resources on this card must be brought up separately after using this command.

Examples The following example shows how to enable a media card:

```
no shutdown
```

Related Commands	Command	Description
	resource-pool	Creates a DSP resource pool on the selected media card.

timeout (auto-config application)

To configure the download timeout value for an auto-configuration application, use the **timeout** command in auto-config application configuration mode. To reset to the default, use the **no** form of this command.

timeout *time-in-seconds*

no timeout

Syntax Description	<i>time-in-seconds</i>	Specifies the download timeout value in seconds. The range is from 0 to 3600. The default is 180.
---------------------------	------------------------	---

Defaults	The default value is 180 seconds.
-----------------	-----------------------------------

Command Modes	Auto-config application configuration
----------------------	---------------------------------------

Command History	Release	Modification
	12.3(8)XY	This command was introduced on the Communication Media Module.
	12.3(14)T	This command was integrated into Cisco IOS Release 12.3(14)T.

Usage Guidelines	A value of 0 specifies continuous download retry.
-------------------------	---

Examples	The following example shows the timeout command used to specify continuous retry for downloading an auto-configuration application:
-----------------	--

```
Router(auto-config-app)# timeout 0
```

Related Commands	Command	Description
	auto-config	Enables auto-configuration or enters auto-config application configuration mode for the SCCP application.
	show auto-config	Displays the current status of auto-configuration applications.

Glossary

Digital signal processing (DSP)—A DSP segments the voice signal into frames and stores them in voice packets.

DSPRM—DSP Resource Module

G.711—Describes the 64-kbps PCM voice coding technique. In G.711, encoded voice is already in the correct format for digital voice delivery in the PSTN or through PBXs. Described in the ITU-T standard in its G-series recommendations.

MTP—Media Termination Point

Simple Network Management Protocol (SNMP)—Network management protocol used almost exclusively in TCP/IP networks. SNMP provides a means to monitor and control network devices, and to manage configurations, statistics collection, performance, and security.

Survival Remote Site Telephony (SRST)—Cisco IP Phones are configured to query the router as a backup call-processing source. If the central Cisco Call Manager does not acknowledge keep alive packets, the SRST router performs call setup and processing.

Voice over IP (VoIP)—The capability to carry normal telephony-style voice over an IP-based internet with POTS-like functionality, reliability, and voice quality. VoIP enables a router to carry voice traffic (for example, telephone calls and faxes) over an IP network. In VoIP, the DSP segments the voice signal into frames, which then are coupled in groups of two and stored in voice packets. These voice packets are transported using IP in compliance with ITU-T specification H.323.



Note

See [Internetworking Terms and Acronyms](#) and the [Cisco IOS Voice Configuration Library Glossary](#) for terms not included in this glossary.

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