

# Enhanced Transcoding and Conferencing for IOS Voice Gateways in a CallManager Network using DSP Resources Configuration Example

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## Introduction

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## Introduction

This document describes how to configure Enhanced transcoding and conferencing for Cisco IOS?? Voice Gateway Routers in a Cisco Unified CallManager network.

There are two types of Digital Signal Processors (DSPs) that can register with Cisco CallManager??? C549 or C5510. The type of DSPs determine how the DSP resource registers with Cisco CallManager. C5510s register to Cisco CallManager as Cisco IOS Enhanced (Conference Bridge or Transcoder), while the C549s register as Cisco IOS (Conference Bridge or Transcoder) type. In this document, you work with the C5510 DSPs which are part of the next generation PVDM2 DSPs.

## Prerequisites for Conferencing and Transcoding for Voice Gateway Routers

### DSP Resources

The router must be equipped with C5510 DSPs in order to provide DSP resources for conferencing, transcoding, and hardware Media Termination Point (MTP) services and register with CallManager as a Cisco IOS Enhanced Media Resource.

### Codecs

End-user devices must be equipped with one of these codecs:

Codec	Packetization Periods for Transcoding (ms)
G.711 a-law, G.711 u-law	10, 20, or 30
	10, 20, 30, 40, 50, or 60

G.729, G.729A, G.729B, G.729AB	
GSM EFR, GSM FR *	20

\* Supported for NM-HDV2 and NM-HD-1V/2V/2VE only.

## Components Used

The information in this document is based on these software and hardware versions:

- Cisco IOS Software Release 12.4(9)T
- Cisco 3845 Series Router with on-board DSP modules (PVDM2-64)
- Cisco CallManager 4.1(3)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

### Feature History for Enhanced Conferencing and Transcoding for Voice Gateway Routers

Cisco IOS Software Release	Modification
12.3(11)T	Support was added for the PVDM2 on the Cisco 2800 Series and Cisco 3800 Series Voice Gateway Routers.

## Restrictions for Conferencing and Transcoding for Voice Gateway Routers

- DSP resources communicate with Cisco Unified CallManager using Skinny Client Control Protocol (SCCP). Other protocols are not supported.
- DSP resources cannot be enabled for a slot on the Cisco 1700 Series so the **dsp services dspfarm** command is not supported and cannot be configured for a voice card on the Cisco 1700 Series.
- Conferencing is not supported on a Cisco 3640 using the NM-HD-1V, NM-HD-2V, or NM-HD-2VE.
- Hardware MTPs support only G.711 a-law and G.711 u-law. If you configure a profile as a hardware MTP, and you want to change the codec to something other than G.711, you must first remove the hardware MTP by using the **no maximum sessions hardware** command.
- Software MTPs are supported on the router only if the **dsp services dspfarm** command is not enabled on the voice card.
- Only one codec is supported for each MTP profile. In order to support multiple codecs, you must define a separate MTP profile for each codec.
- If an MTP call is received but MTP is not configured, transcoding is used if resources are available.
- Dynamic conference and transcoding resource allocation is not supported.
- Fax is not supported for transcoding.

## Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

# Conferencing and Transcoding for Voice Gateway Routers Information

In order to configure Cisco conferencing and transcoding, you should understand these concepts:

- DSP Farms
- DSP Farm Profiles
- Conferencing
- Transcoding
- MTP
- Conferencing and Transcoding Features on the NM–HDV2 and NM–HD–1V/2V/2VE
- Conferencing and Transcoding Features on the NM–HDV
- Conferencing and Transcoding Features on the Cisco 1751 and Cisco 1760
- Allocation of DSP Resources

## Configure

In this section, you are presented with the information to configure the features described in this document.

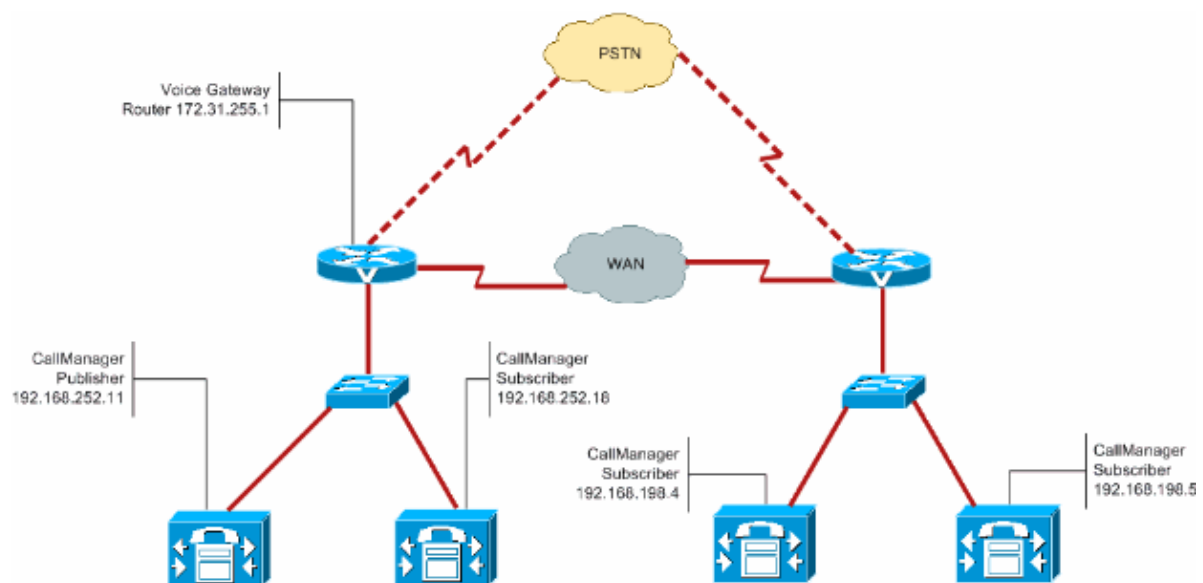
**Note:** Use the Command Lookup Tool (registered customers only) to obtain more information on the commands used in this section.

## Network Diagram

**Note:** This network topology does not suggest that you use this deployment in your environment. In order to determine which deployment model is best for your environment, refer to Cisco Unified Communications Solution Reference Network Design (SRND) Based on Cisco Unified CallManager 4.x.

Cisco CallManager 4.1(3) is deployed in a centralized call processing architecture and provides geographic–redundancy across the corporate Wide Area Network (WAN), with the use of Cisco 3845 Series Voice Gateways. Voice gateways are H.323 to CallManager for call set up signaling.

For this example, DSP resources are only configured on one Cisco 3845 Voice Router (172.31.255.1) and registered to the Cisco CallManager cluster.



## Configure the DSP Resources

This section details how to complete this procedure:

1. Enable and configure Skinny Client Control Protocol (SCCP) on the voice gateway to communicate with Cisco CallManager.
2. Configure DSP resources for transcoding.
3. Create a Cisco CallManager group and associate the DSP farm transcoding profile.
4. Configure DSP resources for conferencing.
5. Create Cisco CallManager group and assign the DSP farm conferencing profile.
6. Modify the default settings for SCCP connection to CallManager (optional).
7. Configure a Media Resource in Cisco CallManager for transcoding.
8. Configure a Media Resource in Cisco CallManager for conferencing.
9. Create and assign a Media Resource Group in Cisco CallManager.
10. Create and assign a Media Resource Group List in Cisco CallManager.
11. Verify the DSP farm configuration.

Complete these steps.

1. Enable and configure Skinny Client Control Protocol (SCCP) on the voice gateway to communicate with Cisco CallManager.

```
tv-g-3845-1

!--- Only the relevant configuration is shown.

tv-g-3845-1>enable
tv-g-3845-1#configure terminal
tv-g-3845-1(config)#sccp ccm 192.168.252.18 identifier 18 priority 1 version 4.1

!--- This sccp ccm command adds CallManager server(s)
!--- to the list of available servers to which the voice gateway can register.

tv-g-3845-1(config)#sccp ccm 192.168.198.5 identifier 5 priority 2 version 4.1
tv-g-3845-1(config)#sccp ccm 192.168.198.4 identifier 4 priority 3 version 4.1
tv-g-3845-1(config)#sccp ccm 192.168.252.11 identifier 11 priority 4 version 4.1
tv-g-3845-1(config)#sccp local loopback 1

!--- Selects the local interface that SCCP applications
!--- use to register with Cisco Unified CallManager.

tv-g-3845-1(config)#sccp

!--- Enables SCCP and brings it up administratively.

tv-g-3845-1(config)#exit
```

2. Configure the DSP farm profile for transcoding.

**Note:** This requires Cisco IOS Software Release 12.3(8)T or later.

```
tv-g-3845-1

tv-g-3845-1>enable
tv-g-3845-1#configure terminal
tv-g-3845-1(config)#voice-card 0
tv-g-3845-1(config-voicecard)#dsp services dspfarm

!--- The dsp services dspfarm command enables DSP farm services for the voice card.
```

```

tvlg-3845-1(config-voicecard)#exit
tvlg-3845-1(config)#dspfarm profile 111 transcode

!--- The dspfarm profile 111 transcode command enters the
!--- DSP farm profile configuration mode
!--- to define a profile for DSP farm services.
!--- For this profile, a transcode profile is created.

tvlg-3845-1(config-dspfarm-profile)#description transcode profile 111
tvlg-3845-1(config-dspfarm-profile)#codec ?
  g711alaw      G.711 A Law 64000 bps
  g711ulaw      G.711 u Law 64000 bps
  g729abr8      G.729ab 8000 bps
  g729ar8       G.729a 8000 bps
  g729br8       G.729b 8000 bps
  g729r8        G.729 8000 bps
  pass-through  Stream Pass Through

!--- Specifies the codecs supported by a DSP farm profile.

tvlg-3845-1(config-dspfarm-profile)#maximum sessions 20

!--- Specifies the maximum number of sessions that are
!--- supported by the profile.
!--- Number is determined by the available registered
!--- DSP resources. The default is 0.
!--- Note: The hardware and software keywords apply
!--- only to MTP profiles.

tvlg-3845-1(config-dspfarm-profile)#associate application sccp

!--- The associate application sccp command associates the SCCP protocol
!--- to the DSP farm profile.

tvlg-3845-1(config-dspfarm-profile)#no shutdown

!--- Enables the profile, allocates
!--- DSP farm resources, and associates the application.

tvlg-3845-1(config-dspfarm-profile)#exit
tvlg-3845-1(config)#gateway

!--- Enters gateway configuration mode.

tvlg-3845-1(config-gateway)#timer receive-rtp 600

!--- Sets the Real-Time Transport
!--- Protocol (RTP) timeout interval to clear hanging connections.
!--- ???seconds???Range is 180 to 1800. The default is 1200.

tvlg-3845-1(config-gateway)#exit

```

3. Create a Cisco CallManager group and associate the DSP farm transcoding profile.

**Note:** This procedure requires Cisco IOS Software Release 12.3(8)T or later.

```

tvlg-3845-1

!--- Perform this procedure to define a
!--- Cisco Unified CallManager
!--- group and to associate the transcoding DSP farm profile with
!--- the Cisco Unified CallManager group.

tvlg-3845-1>enable
tvlg-3845-1#configure terminal

```

```

tvlg-3845-1(config)#sccp ccm group 111

!--- The sccp ccm group 111 command creates a Cisco Unified CallManager group and
!--- enters SCCP Cisco Unified CallManager configuration mode.

tvlg-3845-1(config-sccp-ccm)#associate ccm 18 priority 1
tvlg-3845-1(config-sccp-ccm)#associate ccm 5 priority 2
tvlg-3845-1(config-sccp-ccm)#associate ccm 4 priority 3
tvlg-3845-1(config-sccp-ccm)#associate ccm 11 priority 4

!--- Adds a Cisco Unified CallManager server to the Cisco
!--- Unified CallManager group and establishes its priority within the group.

tvlg-3845-1(config-sccp-ccm)#associate profile 111 register tvgltxcode

!--- Associates a DSP farm profile to the Cisco Unified CallManager group.

!--- The device-name must match the device name configured in Cisco Unified CallManager.
!--- Otherwise, the profile is not registered to Cisco Unified CallManager.

!--- Repeat this step for each DSP farm profile that you want to register with
!--- this Cisco Unified CallManager group.

tvlg-3845-1(config-sccp-ccm)#bind interface loopback 1

!--- Binds an interface to the Cisco Unified CallManager group.

tvlg-3845-1(config-sccp-ccm)#description tvgl transcoding
tvlg-3845-1(config-sccp-ccm)#end

```

#### 4. Configure the DSP farm profile for conferencing.

tvlg-3845-1
<pre> tvlg-3845-1&gt;<b>enable</b> tvlg-3845-1#<b>configure terminal</b> tvlg-3845-1(config)#<b>voice-card 0</b> tvlg-3845-1(config-voicecard)#<b>dsp services dspfarm</b>  !--- The <b>dsp services dspfarm</b> command enables DSP farm services for the voice card.  tvlg-3845-1(config-voicecard)#<b>exit</b> tvlg-3845-1(config)#<b>dspfarm profile 999 conference</b>  !--- The <b>dspfarm profile 999 conference</b> command enters DSP !--- farm profile configuration mode !--- to define a profile for DSP farm services. !--- For this profile, a transcode profile is created.  tvlg-3845-1(config-dspfarm-profile)#<b>description conference profile 999</b> tvlg-3845-1(config-dspfarm-profile)#<b>codec ?</b>   g711alaw      G.711 A Law 64000 bps   g711ulaw      G.711 u Law 64000 bps   g729abr8      G.729ab 8000 bps   g729ar8       G.729a 8000 bps   g729br8       G.729b 8000 bps   g729r8        G.729 8000 bps   pass-through  Stream Pass Through  !--- Specifies the codecs supported by a DSP farm profile.  tvlg-3845-1(config-dspfarm-profile)#<b>maximum sessions 4</b>  !--- Specifies the maximum number of sessions that are supported by the profile. !--- <b>Number</b> is determined by the available registered DSP resources. </pre>

```

!--- The default is 0.
!--- Note: The hardware and software keywords apply only to MTP profiles.

tvg-3845-1(config-dspfarm-profile)#associate application sccp

!--- The associate application sccp command associates
!--- the SCCP protocol to the DSP farm profile.

tvg-3845-1(config-dspfarm-profile)#no shutdown

!--- Enables the profile, allocates
!--- DSP farm resources, and associates the application.

tvg-3845-1(config-dspfarm-profile)#exit
tvg-38450-1(config)#gateway

!--- Enters gateway configuration mode.

tvg-38450-1(config-gateway)#timer receive-rtp 600

!--- Sets the Real-Time Transport
!--- Protocol (RTP) timeout interval to clear hanging connections.
!--- ???seconds???Range is 180 to 1800. The default is 1200.

tvg-38450-1(config-gateway)#exit

```

5. Create Cisco CallManager group and assign the DSP farm conferencing profile.

```

tvg-3845-1

!--- Perform this procedure to define a Cisco Unified CallManager
!--- group and to associate the conferencing DSP farm profile
!--- with the Cisco Unified CallManager group.

tvg-3845-1>enable
tvg-3845-1#configure terminal
tvg-3845-1(config)#sccp ccm group 999

!--- The sccp ccm group 999 command creates a Cisco Unified CallManager group and
!--- enters SCCP Cisco Unified CallManager configuration mode.

tvg-3845-1(config-sccp-ccm)#associate ccm 18 priority 1
tvg-3845-1(config-sccp-ccm)#associate ccm 5 priority 2
tvg-3845-1(config-sccp-ccm)#associate ccm 4 priority 3
tvg-3845-1(config-sccp-ccm)#associate ccm 11 priority 4

!--- Adds a Cisco Unified CallManager server to the Cisco
!--- Unified CallManager group and establishes its priority within the group.

tvg-3845-1(config-sccp-ccm)#associate profile 999 register tvglconf

!--- Associates a DSP farm profile to the Cisco Unified CallManager group.

!--- The device-name must match the device name configured in Cisco Unified CallManager.
!--- Otherwise, the profile is not registered to Cisco Unified CallManager.

!--- Repeat this step for each DSP farm profile that you want to register with
!--- this Cisco Unified CallManager group.

tvg-3845-1(config-sccp-ccm)#bind interface loopback 1

!--- Binds an interface to the Cisco Unified CallManager group.

tvg-3845-1(config-sccp-ccm)#description tvgl conferencing

```

```
tvlg-3845-1(config-sccp-ccm)end
```

6. Modify the default settings for SCCP connection to CallManager (optional).
7. Configure a Media Resource in Cisco CallManager for Transcoding. In order to do this, add a Transcoder and register the transcoding profile that was built in Cisco IOS as a Cisco IOS Enhanced Media Termination Point in Cisco CallManager.
  - a. Add a Transcoder to Cisco CallManager and select the Transcoder Type that is appropriate to your DSP resources. Typically, Transcoder Type **Cisco IOS Enhanced Media Termination Point** depends on the type of DSPs that are registered (for example, C549s versus C5510s).

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration For Cisco IP Telephony Solutions

Cisco IPMA Configuration Wizard  
Cisco CM Attendant Console  
Media Resource  
Service Parameters

Annunciator  
Conference Bridge  
Media Termination Point  
Music On Hold Audio Source  
Music On Hold Server  
**Transcoder**  
Media Resource Group  
Media Resource Group List

**Transcoder Configuration**

[Add a New Transcoder](#)  
[Back to Find/List Transcoders](#)

**Transcoder: New**  
Status: Ready

Transcoder Type: Cisco IOS Enhanced Media Termination Point

Description:

Device Name\*:

Device Pool\*: -- Not Selected -- (View details)

Special Load Information:  (Leave blank to use default)

\* indicates required item

- b. Configure and insert the Transcoder profile in Cisco CallManager to register with the profile that was created in Cisco IOS. The Device Name is the same as the profile name that was created in Cisco IOS.

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration For Cisco IP Telephony Solutions

Cisco SYSTEMS

**Transcoder Configuration**

[Add a New Transcoder](#)  
[Back to Find/List Transcoders](#)

**Transcoder: New**  
Status: Ready

Transcoder Type: Cisco IOS Enhanced Media Termination Point

Description: tvlgtxcode

Device Name\*: tvlgtxcode

Device Pool\*: AUS\_TSWEB\_dpl (View details)

Special Load Information:  (Leave blank to use default)

\* indicates required item

- c. Reset the Transcoder in Cisco CallManager to activate registration.

**Note:** If the Transcoder does not register after a reset, you might need to delete and recreate

the profile in Cisco CallManager. You can also bounce the sccp and dspfarm registration in IOS in order to resolve this issue. Try these commands:

```
tv-3845-1(config)#no dspfarm  
  
tv-3845-1(config)#no sccp  
  
tv-3845-1(config)#dspfarm  
  
tv-3845-1(config)#sccp
```

The screenshot shows the Cisco CallManager Administration interface. The top navigation bar includes System, Route Plan, Service, Feature, Device, User, Application, and Help. The main header is "Cisco CallManager Administration For Cisco IP Telephony Solutions". The page title is "Transcoder Configuration". On the right, there are links: "Add a New Transcoder", "Back to Find/List Transcoders", and "Dependency Records". The main content area displays the configuration for a transcoder named "tv-3845-1". It shows the registration status as "Registered with Cisco CallManager" and the IP address as "172.31.255.1". The status is "Insert completed". Below this are buttons for "Copy", "Update", "Delete", and "Reset". The configuration details include: Transcoder Type: "Cisco IOS Enhanced Media Termination Point"; Description: "tv-3845-1"; Device Name\*: "tv-3845-1"; Device Pool\*: "AUS\_TSWEB\_dpl" (with a "(View details)" link); and Special Load Information: (Leave blank to use default). A note at the bottom states "\* indicates required item".

8. Configure a media resource in Cisco CallManager for Conferencing.

a. Add a conference bridge to Cisco CallManager through **Feature > Media Resource > Conference Bridge**.

The screenshot shows the Cisco CallManager Administration interface. The top navigation bar includes System, Route Plan, Service, Feature, Device, User, Application, and Help. The main header is "Cisco CallManager Administration For Cisco IP Telephony Solutions". The page title is "Find and List Servers". On the right, there is a link: "Add a New Server". The main content area displays "No current search". Below this are search options: "Find Servers Where" with dropdowns for "Name" and "begins with", and a text input field followed by a "Find" button. Below the search options, it says "and show 20 items per page" and "To list all items, click Find without entering any search text." At the bottom, it says "No active query. Please enter your search criteria using the options above." A dropdown menu is open under the "Feature" tab, showing options: "Cisco IPMA Configuration Wizard", "Cisco CM Attendant Console", "Media Resource", and "Service Parameters". The "Media Resource" option is selected, and a sub-menu is open showing: "Annunciator", "Conference Bridge", "Media Termination Point", "Music On Hold Audio Source", "Music On Hold Server", "Transcoder", "Media Resource Group", and "Media Resource Group List".

b. Click **Add a New Conference Bridge**.

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration  
For Cisco IP Telephony Solutions

CISCO SYSTEMS

## Find and List Conference Bridges

[Add a New Conference Bridge](#)

No matches were found for Name begins with ""

Find Conference Bridges where  begins with

and show  items per page

To list all items, click Find without entering any search text.

No matching records

- c. Configure and insert the conference bridge profile in Cisco CallManager to register with the profile that was created in Cisco IOS. The Device Name is the same as the profile name that was created in Cisco IOS.

Typically, the Conference Bridge Type **Cisco IOS Enhanced Conference Bridge** depends on the type of DSPs that are registered (for example, C549s versus C5510s).

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration  
For Cisco IP Telephony Solutions

CISCO SYSTEMS

## Conference Bridge Configuration

[Add a New Conference Bridge](#)  
[Meet-Me Number/Pattern Configuration](#)  
[Cisco CallManager Service Parameters](#)  
[Back to Find/List Conference Bridges](#)

**Conference Bridge: New**  
Status: Ready

Conference Bridge Type

Conference Bridge Name\*

Description

Device Pool\*

Location

\* indicates required item

- d. Reset the conference bridge for the profile to register with Cisco CallManager.

**Note:** If the conference bridge does not register after a reset, you might need to delete and recreate the profile in Cisco CallManager. You can also bounce the sccp and dspfarm registration in IOS in order to resolve this issue. Try these commands:

```
tvgs-3845-1(config)#no dspfarm
```

```
tvgs-3845-1(config)#no sccp  
tvgs-3845-1(config)#dspfarm  
tvgs-3845-1(config)#sccp
```

The screenshot shows the Cisco CallManager Administration web interface. The top navigation bar includes links for System, Route Plan, Service, Feature, Device, User, Application, and Help. The main header displays "Cisco CallManager Administration" and "For Cisco IP Telephony Solutions". The page title is "Conference Bridge Configuration". On the right, there are several links: "Add a New Conference Bridge", "Meet-Me Number/Pattern Configuration", "Cisco CallManager Service Parameters", "Back to Find/List Conference Bridges", and "Dependency Records". The main content area shows the configuration for a conference bridge named "tvglconf". It is registered with Cisco CallManager 172.22.1.150 and has an IP address of 10.89.35.221. The status is "Insert completed". There are buttons for "Copy", "Update", "Delete", and "Reset". The configuration details are as follows:

Conference Bridge Type	Cisco IOS Enhanced Conference Bridge
Conference Bridge Name*	tvglconf
Description	tvglconf
Device Pool*	AUS_TSWEB_dpl
Location	AUS_TSWEB_loc

\* indicates required item

9. Create and assign a Media Resource Group in Cisco CallManager.
10. Create and assign a Media Resource Group List in Cisco CallManager.
11. Verify the DSP resources configuration.

A configuration example for how to set up Media Resource Groups and Media Resource Group Lists in Cisco CallManager is located in the Media Resources Interactive Voice Network Configuration Example.

**Note:** You must determine the number of PVDM2s or network modules that are required to support your conferencing and transcoding services and install the modules on your router. For more information on this requirement, refer to Determining DSP Resource Requirements.

**Note:** This voice gateway router configuration uses a loopback address as a virtual interface for H.323 signaling.

## Verify

This section describes how to verify conferencing, transcoding, and MTP services with the use of these commands:

- **show running-config** ???Use the **show running-config** command to display the configuration of the MTP profile.
- **show sccp ccm group [group-number]** ???Use this command to verify the configuration of the Cisco Unified CallManager group.
- **show dspfarm profile [profile-number]** ???Use this command to verify the configured DSP farm profiles.

- **show dspfarm all** ???Use this command to verify the status of the DSP farm.
- **show sccp** ???Use this command to verify that the DSP farm is registered.
- **show sccp connections** ???Use this command to verify the active SCCP connections.
- **show media resource status** ???Use this command to verify the current media resource status.

The Output Interpreter Tool ( registered customers only) (OIT) supports certain **show** commands. Use the OIT to view an analysis of **show** command output.

- **show running-config**???Use the **show running-config** command to display the configuration of the MTP profile.

```

tvlg-3845-1
tvlg-3845-1#show running-config
!
voice-card 0
no dspfarm
dsp services dspfarm
!
interface Loopback1
description VoIP Loopback Interface
ip address 172.31.255.1 255.255.255.255
ip pim sparse-dense-mode
h323-gateway voip interface
h323-gateway voip bind srcaddr 172.31.255.1
!
sccp local Loopback1
sccp ccm 192.168.252.18 identifier 18 priority 1 version 4.1
sccp ccm 192.168.198.5 identifier 5 priority 2 version 4.1
sccp ccm 192.168.198.4 identifier 4 priority 3 version 4.1
sccp ccm 192.168.252.11 identifier 11 priority 4 version 4.1
sccp
!
sccp ccm group 999
description tvgl conferencing
bind interface Loopback1
associate ccm 18 priority 1
associate ccm 5 priority 2
associate ccm 4 priority 3
associate ccm 11 priority 4
associate profile 999 register tvglconf
!
sccp ccm group 111
description tvgl transcoding
associate ccm 18 priority 1
associate ccm 5 priority 2
associate ccm 4 priority 3
associate ccm 11 priority 4
associate profile 111 register tvgltxcode
!
dspfarm profile 111 transcode
description transcode profile 111
codec g711ulaw
codec g711alaw
codec g729ar8
codec g729abr8
codec gsmfr
codec g729r8
maximum sessions 20
associate application SCCP
!
dspfarm profile 999 conference
description dspfarm profile 999 conferencing
codec g711ulaw

```

```

codec g711alaw
codec g729ar8
codec g729abr8
codec g729r8
codec g729br8
maximum sessions 4
associate application SCCP
!
end

```

- **show sccp ccm group [group-number]???**Use this command to verify the configuration of the Cisco Unified CallManager group.

tv-3845-1
<pre> tv-3845-1#show sccp ccm group CCM Group Identifier: 999 Description: tvgl   Binded Interface: Loopback1, IP Address: 172.31.255.1   Associated CCM Id: 18, Priority in this CCM Group: 1   Associated CCM Id: 5, Priority in this CCM Group: 2   Associated CCM Id: 4, Priority in this CCM Group: 3   Associated CCM Id: 11, Priority in this CCM Group: 4   Associated Profile: 999, Registration Name: tvglconf   Registration Retries: 3, Registration Timeout: 10 sec   Keepalive Retries: 3, Keepalive Timeout: 30 sec   CCM Connect Retries: 3, CCM Connect Interval: 10 sec   Switchover Method: GRACEFUL, Switchback Method: GRACEFUL_GUARD   Switchback Interval: 10 sec, Switchback Timeout: 7200 sec   Signaling DSCP value: cs3, Audio DSCP value: ef  CCM Group Identifier: 111 Description: tvgl transcoding   Binded Interface: NONE, IP Address: NONE   Associated CCM Id: 18, Priority in this CCM Group: 1   Associated CCM Id: 5, Priority in this CCM Group: 2   Associated CCM Id: 4, Priority in this CCM Group: 3   Associated CCM Id: 11, Priority in this CCM Group: 4   Associated Profile: 111, Registration Name: tvgltxcode   Registration Retries: 3, Registration Timeout: 10 sec   Keepalive Retries: 3, Keepalive Timeout: 30 sec   CCM Connect Retries: 3, CCM Connect Interval: 10 sec   Switchover Method: GRACEFUL, Switchback Method: GRACEFUL_GUARD   Switchback Interval: 10 sec, Switchback Timeout: 7200 sec   Signaling DSCP value: cs3, Audio DSCP value: ef </pre>

- **show dspfarm profile [profile-number]???**Use this command to verify the configured DSP farm profiles.

tv-3845-1
<pre> tv-3845-1#show dspfarm profile Dspfarm Profile Configuration  Profile ID = 111, Service = TRANSCODING, Resource ID = 1 Profile Description : transcode profile 111 Profile Admin State : UP Profile Operation State : ACTIVE Application : SCCP Status : ASSOCIATED Resource Provider : FLEX_DSPRM Status : UP Number of Resource Configured : 20 Number of Resource Available : 20 Codec Configuration Codec : g711ulaw, Maximum Packetization Period : 30 Codec : g729r8, Maximum Packetization Period : 60 Dspfarm Profile Configuration </pre>

```

Profile ID = 999, Service = CONFERENCING, Resource ID = 2
Profile Description : dspfarm profile 118 conferencing
Profile Admin State : UP
Profile Operation State : ACTIVE
Application : SCCP Status : ASSOCIATED
Resource Provider : FLEX_DSPRM Status : UP
Number of Resource Configured : 4
Number of Resource Available : 4
Codec Configuration
Codec : g711ulaw, Maximum Packetization Period : 30 , Transcoder: Not Required
Codec : g729r8, Maximum Packetization Period : 60 , Transcoder: Not Required

```

- **show dspfarm all** Use this command to verify the status of the DSP farm.

tvlg-3845-1										
tvgl-3845# <b>show dspfarm all</b>										
Dspfarm Profile Configuration										
Profile ID = 111, Service = TRANSCODING, Resource ID = 1										
Profile Description : transcode profile 111										
Profile Admin State : UP										
Profile Operation State : ACTIVE										
Application : SCCP Status : ASSOCIATED										
Resource Provider : FLEX_DSPRM Status : UP										
Number of Resource Configured : 20										
Number of Resource Available : 20										
Codec Configuration										
Codec : g711ulaw, Maximum Packetization Period : 30										
Codec : g729r8, Maximum Packetization Period : 60										
Dspfarm Profile Configuration										
Profile ID = 999, Service = CONFERENCING, Resource ID = 2										
Profile Description : dspfarm profile 999 conferencing										
Profile Admin State : UP										
Profile Operation State : ACTIVE										
Application : SCCP Status : ASSOCIATED										
Resource Provider : FLEX_DSPRM Status : UP										
Number of Resource Configured : 4										
Number of Resource Available : 4										
Codec Configuration										
Codec : g711ulaw, Maximum Packetization Period : 30 , Transcoder: Not Required										
Codec : g729r8, Maximum Packetization Period : 60 , Transcoder: Not Required										
SLOT	DSP	VERSION	STATUS	CHNL	USE	TYPE	RSC_ID	BRIDGE_ID	PKTS_TXED	PKTS_RXED
0	1	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	1	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	1	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	2	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	2	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	2	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	2	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	2	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	2	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	2	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	2	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	2	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	3	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	3	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	3	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	3	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	3	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	3	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	3	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	3	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	4	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	4	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	4	9.2.2	UP	N/A	FREE	xcode	1	-	-	-

0	4	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	4	9.2.2	UP	N/A	FREE	xcode	1	-	-	-
0	7	1.1.1	UP	N/A	FREE	conf	2	-	-	-
0	7	1.1.1	UP	N/A	FREE	conf	2	-	-	-
0	8	1.1.1	UP	N/A	FREE	conf	2	-	-	-
0	8	1.1.1	UP	N/A	FREE	conf	2	-	-	-

Total number of DSPFARM DSP channel(s) 24

- **show sccp???**Use this command to verify that the DSP farm is registered.

```

tvgl-3845-1
tvgl-3845#show sccp
SCCP Admin State: UP
Gateway IP Address: 172.31.255.1, Port Number: 2000
IP Precedence: 5
User Masked Codec list: None
Call Manager: 192.168.198.4, Port Number: 2000
                Priority: 3, Version: 4.1, Identifier: 4
Call Manager: 192.168.198.5, Port Number: 2000
                Priority: 2, Version: 4.1, Identifier: 5
Call Manager: 192.168.252.11, Port Number: 2000
                Priority: 4, Version: 4.1, Identifier: 11
Call Manager: 192.168.252.18, Port Number: 2000
                Priority: 1, Version: 4.1, Identifier: 18

Conferencing Oper State: ACTIVE - Cause Code: NONE
Active Call Manager: 192.168.252.18, Port Number: 2000
TCP Link Status: CONNECTED, Profile Identifier: 999
Reported Max Streams: 32, Reported Max OOS Streams: 0
Supported Codec: g711ulaw, Maximum Packetization Period: 30
Supported Codec: g729r8, Maximum Packetization Period: 60
Supported Codec: rfc2833 dtmf, Maximum Packetization Period: 30
Supported Codec: rfc2833 pass-thru, Maximum Packetization Period: 30
Supported Codec: inband-dtmf to rfc2833 conversion,
Maximum Packetization Period: 30

Transcoding Oper State: ACTIVE - Cause Code: NONE
Active Call Manager: 192.168.252.18, Port Number: 2000
TCP Link Status: CONNECTED, Profile Identifier: 111
Reported Max Streams: 40, Reported Max OOS Streams: 0
Supported Codec: g711ulaw, Maximum Packetization Period: 30
Supported Codec: g729r8, Maximum Packetization Period: 60
Supported Codec: rfc2833 dtmf, Maximum Packetization Period: 30
Supported Codec: rfc2833 pass-thru, Maximum Packetization Period: 30
Supported Codec: inband-dtmf to rfc2833 conversion,
Maximum Packetization Period: 30

```

- **show sccp connections???**Use this command to verify the active SCCP connections.

```

tvgl-3845-1
tvgl-3845#show sccp connections

Total number of active session(s) 0, and connection(s) 0

```

- **show media resource status???**Use this command to verify the current media resource status.

```

tvgl-3845-1
tvgl-3845#show media resource status
Resource Providers:

Resource Provider ID :: FLEX_DSPRM Status :: REGISTERED
Service Profiles

```

```
MTP ::  
TRANSCODING :: 111  
CONFERENCING :: 999  
Applications :  
Application ID : SCCP, Status : REGISTERED
```

## Troubleshoot

Refer to [Configuring Enhanced Conferencing and Transcoding for Voice Gateway Routers](#) for more troubleshooting information.

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## Related Information

- [Configuring Enhanced Conferencing and Transcoding for Voice Gateway Routers](#)
  - [Technical Support & Documentation – Cisco Systems](#)
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