Support for Software Media Termination Point

The Support for Software Media Termination Point (MTP) feature bridges the media streams between two connections allowing Cisco Unified Communications Manager (Cisco UCM) to relay calls that are routed through SIP or H.323 endpoints via Skinny Call Control Protocol (SCCP) commands. These commands allow Cisco UCM to establish an MTP for call signaling.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Information About Support for Software Media Termination Point

This feature extends the software MTP support to the Cisco Unified Border Element (Enterprise). Software MTP is an essential component of large-scale deployments of Cisco UCM. This feature enables new capabilities so that the Cisco UBE can function as an Enterprise Edge Cisco Session Border Controller for large-scale deployments that are moving to SIP trunking.

How to Configure Support for Software Media Termination Point

Prerequisites

- For the software MTP to function properly, codec and packetization must be configured the same way on both in call legs and out call legs.

Cisco Unified Border Element (Enterprise)

- Cisco IOS XE Release 2.6 or a later release must be installed and running on your Cisco ASR 1000 Series Router.

Restrictions

- RSVP Agent is not supported in software MTP.

- Hardware MTP for repacketization is not supported.

- Call Threshold is not supported for standalone software MTP.

- Per-call debugging is not supported.

- Secure transcoding is not supported on CUCM with Cisco 4000 Series routers.

Configuring Support for Software Media Termination Point

To enable and configure the Support for Software Media Termination Point feature, perform the following task.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **sccp local** *interface-type interface-number* [**port** *port-number*]
4. **sccp ccm** {*ipv4-address* | *ipv6-address* | *dns*} **identifier** *identifier-number* [**port** *port-number*] **version** *version-number*
5. **sccp**
6. **sccp ccm group** *group-number*
7. **associate ccm** *identifier-number* **priority** *number*
8. **associate profile** *profile-identifier* **register** *device-name*
9. **dspfarm profile** *profile-identifier* {**conference** | **mtp** | **transcode**} [**security**]
10. **maximum sessions** {**hardware** | **software**} *number*
11. **associate application sccp**
12. **no shutdown**

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**sccp local** *interface-type interface-number* [**port** *port-number*] **Example:** `Router(config)# sccp local gigabitethernet0/0/0`	Selects the local interface that SCCP applications (transcoding and conferencing) use to register with Cisco UCM. • *interface type* --Can be an interface address or a virtual-interface address such as Ethernet. • *interface number* --Interface number that the SCCP application uses to register with Cisco UCM. • (Optional) **port** *port-number*--Port number used by the selected interface. Range is 1025 to 65535. Default is 2000.
Step 4	**sccp ccm** {*ipv4-address* | *ipv6-address* | *dns*} **identifier** *identifier-number* [**port** *port-number*] **version** *version-number* **Example:** `Router(config)# sccp ccm 10.1.1.1 identifier 1 version 7.0+`	Adds a Cisco UCM server to the list of available servers and sets the following parameters: • *ipv4-address* --IP version 4 address of the Cisco UCM server. • *ipv6-address* --IP version 6 address of the Cisco UCM server. • *dns* --DNS name. • **identifier** --Specifies the number that identifies the Cisco UCM server. Range is 1 to 65535. • **port** *port-number* (Optional)--Specifies the TCP port number. Range is 1025 to 65535. Default is 2000. • **version** *version-number* --Cisco UCM version. Valid versions are 3.0, 3.1, 3.2, 3.3, 4.0, 4.1, 5.0.1, 6.0, and 7.0+. There is no default value.
Step 5	**sccp** **Example:** `Router(config)# sccp`	Enables the Skinny Client Control Protocol (SCCP) and its related applications (transcoding and conferencing).

	Command or Action	Purpose
Step 6	**sccp ccm group** *group-number* **Example:** `Router(config)# sccp ccm group 10`	Creates a Cisco UCM group and enters SCCP Cisco UCM configuration mode. • *group-number* --Identifies the Cisco UCM group. Range is 1 to 50.
Step 7	**associate ccm** *identifier-number* **priority** *number* **Example:** `Router(config-sccp-ccm)# associate ccm 10 priority 3`	Associates a Cisco UCM with a Cisco UCM group and establishes its priority within the group: • *identifier-number* --Identifies the Cisco UCM. Range is 1 to 65535. There is no default value. • **priority** *number* --Priority of the Cisco UCM within the Cisco UCM group. Range is 1 to 4. There is no default value. The highest priority is 1.
Step 8	**associate profile** *profile-identifier* **register** *device-name* **Example:** `Router(config-sccp-ccm)# associate profile 1 register MTP0011`	Associates a DSP farm profile with a Cisco UCM group: • *profile-identifier* --Identifies the DSP farm profile. Range is 1 to 65535. There is no default value. • **register** *device-name* --Device name in Cisco UCM. A maximum of 15 characters can be entered for the device name.
Step 9	**dspfarm profile** *profile-identifier* {**conference** | **mtp** | **transcode**} [**security**] **Example:** `Router(config-sccp-ccm)# dspfarm profile 1 mtp`	Enters DSP farm profile configuration mode and defines a profile for DSP farm services: • *profile-identifier* --Number that uniquely identifies a profile. Range is 1 to 65535. There is no default. • **conference** --Enables a profile for conferencing. • **mtp** --Enables a profile for MTP. • **transcode** --Enables a profile for transcoding. • **security** (Optional)-- Enables a profile for secure DSP farm services.
Step 10	**maximum sessions** {**hardware** | **software**} *number* **Example:** `Router(config-dspfarm-profile)# maximum sessions software 10`	Specifies the maximum number of sessions that are supported by the profile. • **hardware** --Number of sessions that MTP hardware resources can support. • **software** --Number of sessions that MTP software resources can support. • *number* --Number of sessions that are supported by the profile. Range is 0 to x. Default is 0. The x value is determined at run time depending on the number of resources available with the resource provider.

	Command or Action	Purpose

Step 11	**associate application sccp**
	
	Example:
	
	`Router(config-dspfarm-profile)# associate`
	`application sccp`
		Associates SCCP to the DSP farm profile.

Step 12	**no shutdown** **Example:** `Router(config-dspfarm-profile)# no shutdown`	Changes the status of the interface to the UP state.

Examples

The following example shows a sample configuration for the Support for Software Media Termination Point feature:

```
sccp local GigabitEthernet0/0/1
sccp ccm 10.13.40.148 identifier 1 version 6.0
sccp
!
sccp ccm group 1
 bind interface GigabitEthernet0/0/1
 associate ccm 1 priority 1
 associate profile 6 register RR_RLS6
!
 dspfarm profile 6 mtp
 codec g711ulaw
 maximum sessions software 100
 associate application SCCP
!
!
gateway
media-inactivity-criteria all
timer receive-rtp 400
```

Troubleshooting Tips

To verify and troubleshoot this feature, use the following **show** commands:

• To verify information about SCCP, use the **show sccp** command:

```
Router# show sccp

SCCP Admin State: UP
Gateway IP Address: 10.13.40.157, Port Number: 2000
IP Precedence: 5
User Masked Codec list: None
Call Manager: 10.13.40.148, Port Number: 2000
              Priority: N/A, Version: 6.0, Identifier: 1
              Trustpoint: N/A
```

• To verify information about the DSPfarm profile, use the **show dspfarm profile** command:

```
Router# show dspfarm profile 6

Dspfarm Profile Configuration
 Profile ID = 6, Service = MTP, Resource ID = 1
 Profile Description :
 Profile Service Mode : Non Secure
 Profile Admin State : UP
 Profile Operation State : ACTIVE
 Application : SCCP    Status : ASSOCIATED
 Resource Provider : NONE    Status : NONE
 Number of Resource Configured : 100
 Number of Resource Available : 100
 Hardware Configured Resources : 0
 Hardware Available Resources : 0
 Software Resources : 100
 Codec Configuration
 Codec : g711ulaw, Maximum Packetization Period : 30
```

- To display statistics for the SCCP connections, use the **show sccp connections** command:

```
Router# show sccp connections

sess_id     conn_id     stype mode     codec   ripaddr        rport sport
16808048    16789079     mtp   sendrecv g711u 10.13.40.20     17510 7242
16808048    16789078     mtp   sendrecv g711u 10.13.40.157     6900 18050
```

- To display information about RTP connections, use the **show rtpspi call** command:

```
Router# show rtpspi call
RTP Service Provider info:
No. CallId dstCallId Mode       LocalRTP RmtRTP LocalIP      RemoteIP     SRTP
 22     19        Snd-Rcv  7242     17510  0x90D080F  0x90D0814   0
 19     22        Snd-Rcv  18050    6900   0x90D080F  0x90D080F   0
```

- To display information about VoIP RTP connections, use the **show voip rtp connections** command:

```
Router# show voip rtp connections
VoIP RTP Port Usage Information
Max Ports Available: 30000, Ports Reserved: 100, Ports in Use: 102
Port range not configured, Min: 5500, Max: 65499
VoIP RTP active connections :
No. CallId    dstCallId  LocalRTP  RmtRTP  LocalIP        RemoteIP
1    114       117         19822    24556  10.13.40.157    10.13.40.157
2    115       116         24556    19822  10.13.40.157    10.13.40.157
3    116       115         19176    52625  10.13.40.157    10.13.40.20
4    117       114         16526    52624  10.13.40.157    10.13.40.20
```

- Additional, more specific, **show** commands that can be used include the following:

  - **show sccp connection callid**
  - **show sccp connection connid**
  - **show sccp connection sessionid**
  - **show rtpspi call callid**
  - **show rtpspi stat callid**
  - **show voip rtp connection callid**
  - **show voip rtp connection type**

> • To isolate specific problems, use the **debug sccp** command:
>
> > • **debug sccp** [**all** | **config** | **errors** | **events** | **keepalive** | **messages** | **packets** | **parser** | **tls**]

Feature Information for Support for Software Media Termination Point

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for Support for Software Media Termination Point

Feature Name	Releases	Feature Information
Support for Software Media Termination Point	Cisco IOS XE Release 2.6 S	Software Media Termination Point (MTP) provides the capability for Cisco Unified Communications Manager (Cisco UCM) to interact with a voice gateway via Skinny Client Control Protocol (SCCP) commands. These commands allow the Cisco UCM to establish an MTP for call signaling.