

CUCM Auto Configuration for SCCP Gateways

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Introduction

This document describes how to use Skinny Client Control Protocol (SCCP) auto configuration on Cisco Interworking Operating System (IOS) gateways with Cisco Unified Communications Manager (CUCM).

Contributed by Luis Ramirez, Cisco TAC Engineer.

Prerequisites

Requirements

Ensure these requirements are met before you attempt this configuration:

- Full connectivity between the gateway and CUCM Server
- IOS version compatible with CUCM Server version
- Add SCCP gateway and the endpoints in CUCM Server

Components Used

The information in this document is based on certain software and hardware versions, refer to the compatibility matrix.

Caution: 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, ensure that you understand the potential impact of any command.

Compatibility

To determine compatibility between CUCM and IOS, refer to [Cisco Collaboration Systems Release Summary Matrix for IP Telephony](#).

Configure

Summary Steps

- Step 1. enable
- Step 2. configure terminal
- Step 3. ccm-manager config server *[CUCM IP address]*
- Step 4. ccm-manager sccp local *[Interface]*
- Step 5. sccp local *[Interface]*
- Step 6. ccm-manager sccp

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. ccm-manager config server <i>[CUCM IP address]</i> Example: Router(config)# c cm-manager config server 192.168.1.154	Sets address of configuration server. • <i>CUCM IP Address</i> —Specifies the IP address or logical name of the Trivial File Transfer Protocol (TFTP) server from which the Extensible Markup Language (XML) configuration files are downloaded from.
Step 4. ccm-manager sccp local <i>[Interface]</i> Example: Router(config)# c cm-manager sccp local FastEthernet 0/0	Select the local interface that the Skinny Client Control Protocol (SCCP) application uses to register with Cisco CallManager. • <i>For the gateway to know which interface MAC address will be used to build the XML file name to request to CUCM.</i>

- Step 5.** `sccp local` [Interface]
 Example:
 Router(config)#
`sccp local`
`FastEthernet 0/0`
- Select the local interface that the Skinny Client Control Protocol (SCCP) application uses to register with Cisco CallManager.
 •The interface that will be used to reach CUCM for registration.
- Step 6.** `ccm-manager`
`sccp`
 Example:
 Router(config)#
`ccm-manager`
`sccp`
- To enable Cisco CallManager autoconfiguration of the Cisco IOS gateway.
 • Use this command to trigger TFTP download of the eXtensible Markup Language (XML) configuration file. Issuing this command immediately triggers the download, and also enables the Skinny Client Control Protocol (SCCP) and SCCP Telephony Control Application (STCAPP), applications that enable Cisco CallManager control of gateway-connected telephony endpoints.

Example

CUCM adds the Domain Name System (DNS) Servers configured on CUCM to the Voice Gateway.

```
ip name-server 192.168.1.156
ip name-server 192.168.1.1
```

CUCM adds the active Call Manager Servers with the same priority configured under **Cisco Unified Communications Manager Group**, the **sccp ccm group** and enables **sccp**.

```
sccp ccm 192.168.1.154 identifier 2 version 4.1
sccp ccm 192.168.1.167 identifier 1 version 4.1
sccp
sccp ccm group 1
  associate ccm 1 priority 1
  associate ccm 2 priority 2
```

CUCM creates the **dial-peers** for the configured ports.

```
dial-peer voice 999000 pots
  service stcapp
  port 0/0
```

```
dial-peer voice 999001 pots
  service stcapp
  port 0/1
```

CUCM adds this configuration to the existing **voice-ports**.

```
voice-port 0/0
  timeouts initial 60
  timeouts interdigit 60
  timeouts ringing infinity
```

```
voice-port 0/1
  timeouts initial 60
  timeouts interdigit 60
  timeouts ringing infinity
```

CUCM configures the **stcapp ccm-group**, enables **stcapp**, configures **stcapp feature access-code** and **stcapp speed-dials**.

```
stcapp ccm-group 1
stcapp
stcapp feature access-code
stcapp feature speed-dial
```

Note: Ensure there is no **sccp ccm-group** with tag number 1 or **stcapp ccm-group** with tag number 1 previously configured on the router.

Relevant sections of XML Configuration File

```
<product>VG204</product>  <-  Device Type
<callManagerGroup>

<name>Luis-SUB-PUB-DP</name>  <- Call Manager Group Configured on CUCM

<members>
<member  priority="0">  <- First Priority Device
<callManager>
<name>CUCM9-1SUB</name>  <- CUCM Server with First Priority
<ports>
<ethernetPhonePort>2000</ethernetPhonePort>  <- SCCP Port
</ports>

</member>
<member  priority="1">  <- Second Priority Device
<callManager>
<name>CUCM9-1</name>
<description>CUCM9-1</description>  <- CUCM Server with Second Priority
<ports>
<ethernetPhonePort>2000</ethernetPhonePort>  <- SCCP Port

<product>ANALOG</product>  <- Product Type Analog

<product>4FXS-SCCP</product>  <- 4 FXS with SCCP

<deviceProtocol>SCCP</deviceProtocol>  <- Device Will Run SCCP
```

Troubleshoot

This section provides steps to troubleshoot SCCP auto-registration issues.

Step 1. The command **show ccm-manager config-download** shows the auto-configuration download status.

Check the MAC address used, interface used, TFTP configuration attempts (fails and succeeds), Configuration Error History, etc.

```
Router#show ccm-manager confing-download
```

```
SCCP auto-configuration status
=====
Registered with Call Manager: Yes
Local interface: FastEthernet0/0 (001f.cac3.de10)
Current version-id: 1397830563-94fb712b-0c8f-48fa-ac91-a5edfcc9611b
Current config applied at: 04:16:01 UTC Jun 29 2002
Gateway downloads succeeded: 2
Gateway download attempts: 2
Last gateway download attempt: 04:20:43 UTC Jun 29 2002
Last successful gateway download: 04:20:43 UTC Jun 29 2002
Current TFTP server: 192.168.1.154
Gateway resets: 0
Gateway restarts: 0
Managed endpoints: 2
Endpoint downloads succeeded: 2
```

Endpoint download attempts: 2

Last endpoint download attempt: 04:16:01 UTC Jun 29 2002
Last successful endpoint download: 04:16:01 UTC Jun 29 2002
Endpoint resets: 0
Endpoint restarts: 0

Configuration Error History:

Step 2. Enable debug ccm-manager config-download all in order to see the configuration and download process on the Voice Gateway.

TFTP Address where the GW sends the configuration request.

Router#**show ccm-manager confing-download**

```
SCCP auto-configuration status
=====
Registered with Call Manager: Yes
Local interface: FastEthernet0/0 (001f.cac3.de10)
Current version-id: 1397830563-94fb712b-0c8f-48fa-ac91-a5edfcc9611b
Current config applied at: 04:16:01 UTC Jun 29 2002
Gateway downloads succeeded: 2
Gateway download attempts: 2
Last gateway download attempt: 04:20:43 UTC Jun 29 2002
Last successful gateway download: 04:20:43 UTC Jun 29 2002
Current TFTP server: 192.168.1.154
Gateway resets: 0
Gateway restarts: 0
Managed endpoints: 2
Endpoint downloads succeeded: 2
Endpoint download attempts: 2
Last endpoint download attempt: 04:16:01 UTC Jun 29 2002
Last successful endpoint download: 04:16:01 UTC Jun 29 2002
Endpoint resets: 0
Endpoint restarts: 0
```

Configuration Error History:

DNS Servers configured by CUCM.

Router#**show ccm-manager confing-download**

```
SCCP auto-configuration status
=====
Registered with Call Manager: Yes
Local interface: FastEthernet0/0 (001f.cac3.de10)
Current version-id: 1397830563-94fb712b-0c8f-48fa-ac91-a5edfcc9611b
Current config applied at: 04:16:01 UTC Jun 29 2002
Gateway downloads succeeded: 2
Gateway download attempts: 2
Last gateway download attempt: 04:20:43 UTC Jun 29 2002
Last successful gateway download: 04:20:43 UTC Jun 29 2002
Current TFTP server: 192.168.1.154
Gateway resets: 0
Gateway restarts: 0
Managed endpoints: 2
Endpoint downloads succeeded: 2
Endpoint download attempts: 2
Last endpoint download attempt: 04:16:01 UTC Jun 29 2002
Last successful endpoint download: 04:16:01 UTC Jun 29 2002
Endpoint resets: 0
Endpoint restarts: 0
```

Configuration Error History:

XML file request.

```
Router#show ccm-manager confing-download
```

```
SCCP auto-configuration status
```

```
=====
Registered with Call Manager: Yes
Local interface: FastEthernet0/0 (001f.cac3.de10)
Current version-id: 1397830563-94fb712b-0c8f-48fa-ac91-a5edfcc9611b
Current config applied at: 04:16:01 UTC Jun 29 2002
Gateway downloads succeeded: 2
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Current TFTP server: 192.168.1.154
Gateway resets: 0
Gateway restarts: 0
Managed endpoints: 2
Endpoint downloads succeeded: 2
Endpoint download attempts: 2
Last endpoint download attempt: 04:16:01 UTC Jun 29 2002
Last successful endpoint download: 04:16:01 UTC Jun 29 2002
Endpoint resets: 0
Endpoint restarts: 0
```

```
Configuration Error History:
```

```
XML download attempt.
```

```
Router#show ccm-manager confing-download
```

```
SCCP auto-configuration status
```

```
=====
Registered with Call Manager: Yes
Local interface: FastEthernet0/0 (001f.cac3.de10)
Current version-id: 1397830563-94fb712b-0c8f-48fa-ac91-a5edfcc9611b
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Gateway resets: 0
Gateway restarts: 0
Managed endpoints: 2
Endpoint downloads succeeded: 2
Endpoint download attempts: 2
Last endpoint download attempt: 04:16:01 UTC Jun 29 2002
Last successful endpoint download: 04:16:01 UTC Jun 29 2002
Endpoint resets: 0
Endpoint restarts: 0
```

```
Configuration Error History:
```

```
Configuration of the dial-peers.
```

```
Router#show ccm-manager confing-download
```

```
SCCP auto-configuration status
```

```
=====
Registered with Call Manager: Yes
Local interface: FastEthernet0/0 (001f.cac3.de10)
Current version-id: 1397830563-94fb712b-0c8f-48fa-ac91-a5edfcc9611b
Current config applied at: 04:16:01 UTC Jun 29 2002
```

Gateway downloads succeeded: 2

Gateway download attempts: 2

Last gateway download attempt: 04:20:43 UTC Jun 29 2002

Last successful gateway download: 04:20:43 UTC Jun 29 2002

Current TFTP server: 192.168.1.154

Gateway resets: 0

Gateway restarts: 0

Managed endpoints: 2

Endpoint downloads succeeded: 2

Endpoint download attempts: 2

Last endpoint download attempt: 04:16:01 UTC Jun 29 2002

Last successful endpoint download: 04:16:01 UTC Jun 29 2002

Endpoint resets: 0

Endpoint restarts: 0

Configuration Error History:

CUCM Servers are added, priority is configured and SCCP is enabled.

Router#**show ccm-manager confing-download**

SCCP auto-configuration status

=====

Registered with Call Manager: Yes

Local interface: FastEthernet0/0 (001f.cac3.de10)

Current version-id: 1397830563-94fb712b-0c8f-48fa-ac91-a5edfcc9611b

Current config applied at: 04:16:01 UTC Jun 29 2002

Gateway downloads succeeded: 2

Gateway download attempts: 2

Last gateway download attempt: 04:20:43 UTC Jun 29 2002

Last successful gateway download: 04:20:43 UTC Jun 29 2002

Current TFTP server: 192.168.1.154

Gateway resets: 0

Gateway restarts: 0

Managed endpoints: 2

Endpoint downloads succeeded: 2

Endpoint download attempts: 2

Last endpoint download attempt: 04:16:01 UTC Jun 29 2002

Last successful endpoint download: 04:16:01 UTC Jun 29 2002

Endpoint resets: 0

Endpoint restarts: 0

Configuration Error History:

CUCM enables stcapp.

Router#**show ccm-manager confing-download**

SCCP auto-configuration status

=====

Registered with Call Manager: Yes

Local interface: FastEthernet0/0 (001f.cac3.de10)

Current version-id: 1397830563-94fb712b-0c8f-48fa-ac91-a5edfcc9611b

Current config applied at: 04:16:01 UTC Jun 29 2002

Gateway downloads succeeded: 2

Gateway download attempts: 2

Last gateway download attempt: 04:20:43 UTC Jun 29 2002

Last successful gateway download: 04:20:43 UTC Jun 29 2002

Current TFTP server: 192.168.1.154

Gateway resets: 0

Gateway restarts: 0

Managed endpoints: 2

Endpoint downloads succeeded: 2

Endpoint download attempts: 2

Last endpoint download attempt: 04:16:01 UTC Jun 29 2002

Last successful endpoint download: 04:16:01 UTC Jun 29 2002

Endpoint resets: 0

Endpoint restarts: 0

Configuration Error History: