



CHAPTER 5

Cisco Unified Videoconferencing 3545 MCU Services

This section introduces services, describes how to work with them, and includes the following topics:

- [About Services, page 5-1](#)
- [Working with Services on the 3545 MCU, page 5-2](#)
- [Configuring Advanced Management and Security for the 3545 MCU, page 5-12](#)

About Services

A service can be regarded as a conference template. A service is the mechanism that defines the qualities and capabilities of a conference. A service is identified by its prefix. The service prefix number is incorporated into the conference ID to specify the service for the conference. A description of the service indicates the main attributes of the service or the target use for the service.

The MCU comes with several predefined services: one service for the SCCP protocol, one service for Cisco Unified MeetingPlace, and the remainder for audio and video conferencing. The predefined services are factory tuned to be suitable in most cases for audio and video calls. We recommend starting with these services and modifying them as necessary to suit your needs.

When using an SCCP service the following limitations apply:

- No support for presentation view (Duo Video and H.239)
- No support for T.120 data collaboration
- No support for H.235 encryption
- Maximum resolution supported is CIF
- Maximum call rate supported is 768 Kbps
- The G.722.1 and G.723 audio codecs are not available
- No support for conference PINs
- No support for dial out

Working with Services on the 3545 MCU

This section describes how to create new services and how to configure your own services settings.

- [Creating a New Service, page 5-2](#)
- [Deleting a Service, page 5-3](#)
- [Creating a New SCCP Service, page 5-3](#)
- [Customizing Services, page 5-4](#)

Creating a New Service

You create a new service from the Services tab. The new service will have default settings which are suitable for most conferences and usually no further configuration is needed.

Procedure

Step 1 In the Administrator interface, on the sidebar, click MCU (if not already selected).

Step 2 Click the **Services** tab.

Step 3 Click **Add**.

The Automatic Service Definition dialog box appears.

Step 4 In the Service prefix field, enter a prefix for the service.



Note The service prefix is used as part of the dialing plan of your enterprise. Ensure that the prefix does not conflict with other prefixes used in your network.

Step 5 In the Service description field, enter a description of the service in free text.

Step 6 Select one of the following options from the Service type field:

- **Audio Only**—Forces the conference to be audio-only.
- **Desktop Video**—Supports transcoding at bandwidth rates of up to 384 Kbps.
- **HD/SD Continuous Presence**—Supports transcoding at bandwidth rates of up to 2 Mbps. Supports high definition continuous presence. Supports image size of up to 720p. Default when adding a new service.
- **HD Switched Video**—Supports switched high definition video at rates of up to 2 Mbps.

Step 7 Click **Upload**.

Deleting a Service

You delete a service from the Services tab.

Procedure

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- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
 - Step 2** Click the **Services** tab.
 - Step 3** Click **Delete**.
 - Step 4** Click **Yes** in the message that appears.
- The service is removed from the list of services.
-

Creating a New SCCP Service

You create a new SCCP service from the Services tab. The new service will have default settings which are suitable for most conferences and usually no further configuration is needed.



Note Data collaboration and encryption configuration options are not available for SCCP services.

Procedure

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- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
 - Step 2** Click the **Services** tab.
 - Step 3** Click **Add**.
The Automatic Service Definition dialog box appears.
 - Step 4** In the Service prefix field, enter a prefix for the service.
 - Step 5** Check **SCCP service**.
 - Step 6** In the Service description field, enter a description of the service in free text.
 - Step 7** Click **Upload**.
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Customizing Services

You customize a service by first creating a new default service and then configuring your own settings in the Automatic Service Definition dialog box.

- [Configuring the Maximum Call Rate, page 5-4](#)
- [Configuring the Maximum Layout, page 5-5](#)
- [Configuring Advanced Video Settings, page 5-5](#)
- [Configuring Switched High Definition Advanced Video Settings, page 5-7](#)
- [Configuring Advanced Audio Settings, page 5-9](#)
- [Configuring Data Collaboration Support, page 5-10](#)
- [Configuring Presentation View, page 5-10](#)
- [Configuring Encryption Support, page 5-11](#)
- [Configuring PIN Settings, page 5-12](#)
- [Configuring Service Dial-out Policies, page 5-13](#)
- [Configuring Service Indication Settings, page 5-14](#)
- [Configuring Port Reservations and Limits, page 5-14](#)
- [Configuring Support for Far End Camera Control, page 5-15](#)

Configuring the Maximum Call Rate

You can configure the maximum call rate (bit rate) for audio and video. This is the maximum bit rate available for this service. This value represents the total bit rate of the voice, video and data streams combined, up to a maximum of 2 Mbps per call.

Procedure

-
- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
 - Step 2** Click the **Services** tab.
 - Step 3** Click **Add**.
The Automatic Service Definition dialog box appears.
 - Step 4** In the Max call rate field, select the maximum call rate for the voice, video and data streams combined.
 - Step 5** Click **Upload**.



Note

A minimum call rate is defined automatically for each service; this minimum call rate can be changed by an advanced administrative command.

In the case of the high definition service, if a user joins a conference at a call rate that is below the defined minimum for the service, the MCU will consider the call a standard definition call.

The maximum call rate is adjusted dynamically to the lowest maximum call rate of all the participants in a conference, as long as that rate is not below the minimum call rate.

Configuring the Maximum Layout

The Max Layout field indicates the video layout displaying the maximum number of participants to which the conference view expands.

The choice of layouts for the service depends on the type of processing mode. The default layout is 1+7 participants.

Procedure

- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click the **Services** tab. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
- Step 3** In the Max Layout field, a picture of the current maximum layout appears. Click **Change** to choose a new layout.



Note The Change button is not active if HD Switched Video is the service type.

- Step 4** In the Support image size up to field, select the maximum incoming picture format supported in conferences using this service.



Note The Support image size up to field is not displayed if Audio Only or HD Switched Video is the service type.

For the HD/SD Continuous Presence service type, the maximum image size value must be 720p in order to support high definition. If 720p is not selected, high definition is not supported.

For SCCP services, only the CIF and QIF options are available.

- Step 5** Click **OK**.
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Configuring Advanced Video Settings


In the Advanced Video Settings dialog box you can configure advanced settings for standard definition and for high definition video.

- [Configuring Standard Definition Advanced Video Settings, page 5-6](#)
- [Configuring Switched High Definition Advanced Video Settings, page 5-7](#)

Configuring Standard Definition Advanced Video Settings

In the Advanced Video Settings dialog box you can configure the video codec, video image size, participant layout options, theme and additional layouts for a particular service.

Procedure

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- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click the **Services** tab.
- Step 3** Click **Add**.
The Automatic Service Definition dialog box appears.
- Step 4** Click **Advanced Video Settings**.
The Advanced Video Settings dialog box appears.
- Step 5** The Video Codecs section displays the choice of codecs that you prefer. The codecs are listed in declining order of preference with the most preferred codec listed first. Setting the codec priorities notifies the MCU and remote endpoints of your preferred video codecs. This is useful when more than one codec is supported by both sides. To select or change the codec priorities, follow these steps:
- To add a codec to the Available field, click it in the Selected field and then click **Add**. To remove a codec from the Available field, click it and then click **Remove**.
 - To move a codec up the priority list, click it and then click **Up**. To move a codec down the priority list, click it and then click **Down**.
- Step 6** In the Main (Participant) Layout section select the layout options you wish to define for this service.
- Step 7** To display a welcome screen to user when that user connects to a conference, select Display welcome screen. For information on modifying the welcome screen, see the [“Configuring Welcome Screen Settings” section on page 5-8](#).
- Step 8** To configure automatic switching, select Enable auto switch and enter the interval in seconds. Auto switching allows participant images in the video layout periodically to change and display other conference participants according to the interval set.
- Step 9** Select Dynamically change layout as participants join or leave to dynamically enlarge or reduce the displayed number of subframes.
- Step 10** To configure removal of the self image, select Enable ‘No Self See’.
-  **Note** The no self-see display is not available for high definition participants, even if the no self-see option is enabled.
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- Step 11** Select an option from the Display participants names field to show a participant’s name at the bottom of each sub-frame.
- Step 12** Select Slightly reduce image size for optimal TV display to change the display from PC screen mode to TV screen mode.
- Step 13** From the Themes to use field, select a theme. Basic is the default.
- Step 14** (Optional) In the Additional Layouts section, select Enable custom layouts to define custom layouts to maintain backward compatibility with previous product versions.
- Step 15** (Optional) Click **Settings** to define the layout options in the Custom Layout Settings dialog box.



Note If you select Support presentation view (H.239), one of the customized layouts must be Presentation layout.

Related Topics

- [Configuring Welcome Screen Settings, page 5-8](#)
- [Configuring 3G Layout Settings, page 5-8](#)
- [Configuring Presentation View, page 5-10](#)

Configuring Switched High Definition Advanced Video Settings

In the Advanced Video Settings dialog box you can configure the video codec, video image size, participant layout options, theme and additional layouts for a particular service.

Procedure

- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click the **Services** tab.
- Step 3** Select **High Definition Switched Video** in the Service type field.
- Step 4** Click **Add**.
- The Automatic Service Definition dialog box appears.
- Step 5** Click **Advanced Video Settings**.
- The High Definition Service dialog box appears.
- The maximum call rate set in the Max call rate field of the Automatic Service Definition dialog box is displayed.
- Step 6** Set a value in the Allow call rate drop down to option.
- This option enables you to configure the minimum bandwidth to which the MCU lowers a conference to enable additional endpoints to join. This form of “downspeeding” contributes to a higher percentage of call completion on the network. Endpoints are prevented from joining a conference at a bandwidth rate below the value set in this option.
- After downspeeding occurs, the MCU automatically raises the conference bandwidth rate when the endpoints participating at the lowest bandwidth rate leave the conference. For example, in a conference of endpoints communicating at 768 Kbps and a value of 512 Kbps configured in the Allow call rate drop to option, the MCU lowers the conference to 512 Kbps when an endpoint attempts to join the conference at 512 Kbps. If that endpoint later disconnects from the conference, leaving two endpoints capable of communicating at 768 Kbps, the MCU automatically increases the bandwidth of the conference back to 768 Kbps.
- Step 7** Select a codec from the Codec field.



Note H.264 must be a selected codec when the maximum layout definition is 720p.

- Step 8** To configure removal of the self image, select **Enable 'No Self See'**.
- Step 9** Click **OK**.
-

Configuring Welcome Screen Settings

In the Main (participant) layout section of the Advanced Video Settings dialog box you can modify the appearance of the welcome screen.

Procedure

- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click the **Services** tab. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
- Step 3** Click **Advanced Video Settings**.
An Advanced Video Settings dialog box appears.
- Step 4** Select **Display welcome screen** and click **Settings**.
- Step 5** In the Welcome screen settings window, select a text color, background color, enter a welcome text, and enter the length of time you want the welcome screen to appear.



Note The Welcome screen automatically includes the conference description. If no conference description is available, the conference ID appears on the Welcome screen.

There is different language support for welcome screen text.

- Step 6** Set the length of time for which the welcome screen will display in the Display duration field.
- Step 7** Click **OK**.
-

Configuring 3G Layout Settings

In the Additional Layouts section of the Advanced Video Settings dialog box you can configure the layout options for 3G videophone users.

Procedure

- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click **Services**. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
- Step 3** Click **Advanced Video Settings**.
An Advanced Video Settings dialog box appears.

- Step 4** In the Additional Layouts section, select Enable 3G videophone layout to limit the layout for 3G videophone users.
- Step 5** Click **Settings** to select the layout in the 3G Layout Settings dialog box.
- Step 6** Click **OK** to return to the Automatic Service Definition dialog box.
-

Configuring Advanced Audio Settings

Transcoding between audio protocols enables the Cisco Unified Videoconferencing 3545 MCU to support communication between endpoints with different audio codecs. You configure service audio transcoding in the Audio Settings dialog box.

For a service, you can configure conference audio codec support and transcoding priorities. The MCU supports the following audio codecs:

- G.711 A/μ law—Toll quality at 64 Kbps (A-Law/mu-Law).
- G.722—High-quality audio at 64 Kbps.
- G.722.1—High quality audio at 24 Kbps or 32 Kbps using a digital sampling rate ranging from 50 Hz up to 7 kHz.
- G.723.1—Voice quality audio at 5.3 Kbps or 6.4 Kbps.
- G.728—Near toll quality audio at 16 Kbps.
- G.729—Audio at 8 Kbps.
- AAC-LC

Procedure

- Step 1** In the Administrator interface, on the sidebar, click MCU (if not already selected).
- Step 2** Click **Services**. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
- Step 3** Click **Advanced Audio Settings** to modify audio settings.
The Audio Settings dialog box appears.
- Step 4** The Audio codec settings section displays the choice of codecs that you prefer for audio transcoding. The codecs are listed in declining order of preference with the most preferred codec listed first. Setting these priorities notifies the MCU and remote endpoints of your preferred audio codecs. This is useful when more than one codec is supported by both sides. To change these priorities, follow these steps:
- To add a codec to the Available field, click it in the Selected field and then click **Add**. To remove a codec from the Available field, click it and then click **Remove**.
 - To move a codec up the priority list, click it and then click **Up**. To move a codec down the priority list, click it and then click **Down**.
- Step 5** In the Audio packet size field, enter the minimum audio packet size.
- Step 6** In the Number of speakers to mix concurrently field, enter the maximum number of speakers in a conference who can be heard at the same time. The value you enter is the number of loudest speakers for whom the audio stream is mixed and sent to all conference participants. For example, if you enter 4, the MCU mixes the audio stream of the four loudest speakers in the conference.

- Step 7** In the Speaking duration to become 'Active Speaker' field, enter the interval (in milliseconds) before the voice-activated video-switching mechanism displays a new active speaker in the video image. The default setting is 3000 milliseconds.
- Step 8** Select **Automatically mute participants who join the conference** to have the MCU initially mute all participants joining the conference. Once the conference begins, the conference Moderator can unmute selected participants. This is useful for lectures.
- Step 9** If you performed step 8, you can select Do not mute first conference participant to have the MCU mute all conference participants except the participant that joined the conference first.
- Step 10** Click OK.
-

Configuring Data Collaboration Support

In the Data Collaboration section of the Automatic Services Definition dialog box you can configure the service to support T.120 data collaboration when the MCU works with a T.120 server.



Note

Data collaboration configuration options are not available for SCCP services.

Procedure

- Step 1** In the Administrator interface, on the sidebar, click MCU (if not already selected).
- Step 2** Click the **Services** tab. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
- Step 3** Select Support T.120 data conferencing.
- Step 4** If you performed step 3, you can select Allow access to data conferencing from MCU conference control.
- Step 5** Click **Upload**.
-

Configuring Presentation View

In the Data Collaboration section of the Automatic Services Definition dialog box you can configure the service to support presentation view (H.239).

Procedure

- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click the **Services** tab. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
- Step 3** Check **Support presentation view (H.239)** and click **Settings**.
The Presentation View Settings dialog box appears.
- Step 4** Choose **H.263** or **H.264** from the Presentation Video Codec field.

- Step 5** In the Presentation Image Size field, choose the required image size. The default for H.263 is XGA. The default for H.264 is CIF.
- Step 6** In the Presentation Frame Rate field, choose the required frame rate. The default for H.263 is 5 fps. The default for H.264 is 30 fps.
- Step 7** Click **OK**.
-

Configuring Encryption Support

The Cisco Unified Videoconferencing 3545 MCU supports encrypted calls over IP networks. You can configure the service to be encrypted and the type of encryption required.



Note

Encryption configuration options are not available for SCCP services.

About H.235 Encryption for H.323 Calls

The encryption conforms to the H.235 standard and supports the following encryption algorithms:

- DES: with an encryption key of 56 bits
- AES: with an encryption key of 128 bits

Encryption on the MCU can operate in one of the following modes:

- Disabled—No encryption. The supported capability for this mode is Priority 1: no encryption.
- Best effort—This mode implements a “best effort” encryption algorithm. If an endpoint supports encryption, it connects in an encrypted way. If not, it connects without encryption. The supported capabilities for this mode are:
 - Priority 1: AES 128
 - Priority 2: DES 56
 - Priority 3: No encryption
- Encryption required—This mode only connects encrypted calls. Encryption is either AES 128 or DES 56. Non-encrypted calls are not allowed to connect. The supported capabilities for this mode are:
 - Priority 1: AES 128
 - Priority 2: DES 56
- Strong encryption required—This mode only allows AES 128 encrypted calls. Endpoints that do not support AES 128 are not allowed to connect. The supported capability for this mode is Priority 1: AES 128.

The following channels support encryption:

- Audio channel
- Video channel
- Far End Camera Control (FECC)

**Note**

All channels (audio, video, FECC, incoming, and outgoing) on the same call must have the same encryption levels. If the encryption on all channels cannot be achieved, the call disconnects.

Procedure

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- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click the **Services** tab. Select the service you wish to configure and click Add.
The Automatic Service Definition dialog box appears.
- Step 3** In the Management and Security section, select **Support encryption** to enable encryption.
- Step 4** From the Encryption mode field, select the type of encryption:
- Best effort
 - Encryption required
 - Strong encryption required
- Step 5** Click **Upload**.
-

Configuring Advanced Management and Security for the 3545 MCU

In the Advanced Management and Security interface, you can configure policies for PIN settings, auto-reconnect and auto-redial, audio indications and invite authorizations, port reservations and limits, and Far End Camera Control (FECC).

- [Configuring PIN Settings, page 5-12](#)
- [Configuring Service Dial-out Policies, page 5-13](#)
- [Configuring Service Indication Settings, page 5-14](#)
- [Configuring Port Reservations and Limits, page 5-14](#)
- [Configuring Support for Far End Camera Control, page 5-15](#)

Configuring PIN Settings

In the PIN Settings tab you can define a policy for the use of PINs for accessing a conference.

Procedure

-
- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click **Services**. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
- Step 3** Click Advanced Management and Security.

The Management and Security interface appears.

- Step 4** Click **PIN Settings**.
- Step 5** Select Force conference PIN protection if you want user to enter a PIN when creating or entering a conference using this service.
- Step 6** Select **Do not to ask for conference PIN** when dialing-out to invitees if you want only dial-in participants to enter the conference PIN.
- Step 7** Click OK.
-

Configuring Service Dial-out Policies

In the Dial-out tab of the Management and Security interface, for a service, you can define policies for invitation rights and auto reconnect and auto redial.

Procedure

- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click **Services**. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
- Step 3** Click **Advanced Management and Security**.
The Management and Security interface appears.
- Step 4** Click **Dial-out**.
- Step 5** In the Invitation rights section, select one of the options to define whether anyone can invite or only the Moderator can invite participants to the conference:
- Select **Anyone can invite...** if you want any user to be able to invite participants into the conference.
 - Select **Only the moderator can invite...** if you only want users with Moderator-level access to invite participants into the conference.
- Step 6** In the Re-dial and reconnect section, to define redial and reconnect policies follow these steps:
- Select **Automatically redial invited participants...** for the MCU to redial endpoints that fail to respond to conference invites.
 - In the Number of redial attempts field, enter the number of redial attempts.
 - In the Delay between retries (seconds) field, enter a number representing the number of seconds between each redial attempt.
 - Select **Automatically reconnect participants...** for the MCU to automatically call disconnected terminals to attempt a reconnection. The MCU attempts reconnection three times.
- Step 7** Click **OK**.
-

Configuring Service Indication Settings

In the Indications tab of the Management and Security interface, for a service, you can configure audio indications played to conference participants.

Procedure

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- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
 - Step 2** Click **Services**. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
 - Step 3** Click **Advanced Management and Security**.
The Management and Security interface appears.
 - Step 4** Click **Indications**.
 - Step 5** Select **First participant entry** if you want a message played to the first participant entering a conference, informing the participant that they are the first one to enter.
 - Step 6** Select **Participant entry** if you want an audio indication played when any additional participant enters a conference.
 - Step 7** Select **Participant exit** if you want an audio indication played when any participant exits a conference.
 - Step 8** Select **Conference termination** if you want an audio indication played when a conference ends.
 - Step 9** Click **OK**.
-

Configuring Port Reservations and Limits

In the Port Reservation & Limits tab of the Management and Security interface, for a service, you can configure the number of ports to reserve when a conference starts.

Procedure

-
- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
 - Step 2** Click **Services**. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
 - Step 3** Click **Advanced Management and Security**.
The Management and Security interface appears.
 - Step 4** On the Port Reservation & Limits tab, make sure the **High Definition is mandatory** check box is unchecked (it is unchecked by default). If it is checked, the number of ports guaranteed is a set value (16) that is displayed in the Number of ports guaranteed (reserved) when a conference starts check box.



Note The High Definition is mandatory check box only appears when a HD/SD Continuous Presence service type is selected and the picture resolution is configured to 720p.

- Step 5** Select Number of ports guaranteed (reserved) when a conference starts. Enter the number of ports to reserve. The minimum value allowed is one port.



Note Enter a number no larger than the maximum number of ports the platform can support.

- Step 6** Select **Allow conference to grow over guaranteed value** if you want to allow the conference to grow dynamically beyond the number of ports you have defined in the Number of ports guaranteed (reserved) when a conference starts check box.
- Step 7** Click **OK**.
-

Configuring Support for Far End Camera Control

In the FECC tab of the Management and Security interface, for a service, you can configure Far End Camera Control (FECC) data for managing the camera of endpoints at other locations.

Procedure

- Step 1** In the Administrator interface, on the sidebar, click **MCU** (if not already selected).
- Step 2** Click **Services**. Select the service you wish to configure and click **Add**.
The Automatic Service Definition dialog box appears.
- Step 3** Click **Advanced Management and Security**.
The Management and Security interface appears.
- Step 4** Click **FECC**.
- Step 5** Select the check box to enable FECC support.
- Step 6** Click **OK**.
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