Configure Autoregistration

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Autoregistration Overview

Autoregistration allows Unified Communications Manager to automatically assign directory numbers to new phones when you plug those phones in to your network.

Autoregistration is enabled on secure mode now. This enhancement provides greater security for your system because you can secure your cluster while provisioning new phones. It also simplifies the registration process because you don't have to disable cluster security to register new phones.

If you create a device pool that allows only 911 (emergency) and 0 (operator) calls, you can use that to prevent unauthorized endpoints from connecting to your network when autoregistration is enabled. New endpoints can register to this pool, but their access is limited. Unauthorized access by rogue devices that continuously boot in and attempt to register to your network is prevented. You can move a phone that has auto-registered to a new location and assign it to a different device pool without affecting its directory number.

The system doesn't know whether the new phones that are auto-registering are running SIP or SCCP, so you must specify this when you enable autoregistration. Devices that support both SIP and SCCP (such as Cisco IP Phones 7911, 7940, 7941, 7960, 7961) auto-register with the protocol that is specified in the enterprise parameter called Auto Registration Phone Protocol.

Devices that support only a single protocol will auto-register with that protocol. The Auto Registration Phone Protocol setting is ignored. For example, any Cisco IP Phones that support SCCP only will autoregister with SCCP even if the Auto Registration Phone Protocol parameter is set to SIP.

We recommend that you use autoregistration to add fewer than 100 phones to your network. To add more than 100 phones, use the Bulk Administration Tool (BAT). For more information, see *Cisco Unified Communications Manager Bulk Administration Guide* at http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html.

Configure Autoregistration Task Flow

Enabling autoregistration carries a security risk. Enable autoregistration only for brief periods while you add new endpoints to the network.

Procedure

	Command or Action	Purpose
Step 1	Configure a Partition for Autoregistration, on page 2	Configure a route partition to use specifically for autoregistration to limit auto-registered phones to internal calls only.
Step 2	Configure a Calling Search Space for Autoregistration, on page 3	Configure a calling search space to use specifically for autoregistration to limit auto-registered phones to internal calls only.
Step 3	Configure a Device Pool for Autoregistration, on page 4	Create a device pool that uses the calling search space that is configured for autoregistration.
Step 4	Set the Device Protocol Type for Autoregistration, on page 5	Use this procedure to set the protocol to SCCP or SIP to match the type of phones you are auto-registering.
Step 5	Enable Autoregistration, on page 5	Enable autoregistration on the node to use for autoregistration and set the **Auto-registration Cisco Unified Communications Manager Group** parameter to enable autoregistration for the Cisco Unified Communications Manager group that is to be used for autoregistration.
Step 6	Disable Autoregistration, on page 7	Disable autoregistration for the node as soon as you are finished registering new devices.
Step 7	Reuse Autoregistration Numbers, on page 8	Optional. Autoregistration numbers for devices that have been disabled can be reused. When you reset the range of autoregistration directory numbers, you force the system to search again from the starting number. Available directory numbers are reused.

Configure a Partition for Autoregistration

Configure a route partition to use specifically for autoregistration to limit auto-registered phones to internal calls only.

Procedure

Step 1 From Cisco Unified CM Administration, choose **Call Routing** > **Class of Control** > **Partition**.

Step 2 Click **Add New** to create a new partition.

Step 3 In the **Partition Name, Description** field, enter a name for the partition that is unique to the route plan.

Partition names can contain alphanumeric characters, as well as spaces, hyphens (-), and underscore characters (_). See the online help for guidelines about partition names.

Step 4 Enter a comma (,) after the partition name and enter a description of the partition on the same line.

The description can contain up to 50 characters in any language, but it cannot include double quotes ("), percentage sign (%), ampersand (&), backslash (\), angle brackets (<>), or square brackets ([ ]).

If you do not enter a description, Cisco Unified Communications Manager automatically enters the partition name in this field.

Step 5 To create multiple partitions, use one line for each partition entry.

Step 6 From the **Time Schedule** drop-down list, choose a time schedule to associate with this partition.

The time schedule specifies when the partition is available to receive incoming calls. If you choose **None**, the partition remains active at all times.

Step 7 Select one of the following radio buttons to configure the **Time Zone**:

- **Originating Device**—When you select this radio button, the system compares the time zone of the calling device to the **Time Schedule** to determine whether the partition is available is available to receive an incoming call.
- **Specific Time Zone**—After you select this radio button, choose a time zone from the drop-down list. The system compares the chosen time zone to the **Time Schedule** to determine whether the partition is available is available to receive an incoming call.

Step 8 Click **Save**.

What to do next

Configure a Calling Search Space for Autoregistration, on page 3

Configure a Calling Search Space for Autoregistration

Configure a calling search space to use specifically for autoregistration to limit auto-registered phones to internal calls only.

Before you begin

Configure a Partition for Autoregistration, on page 2

Procedure

Step 1 From Cisco Unified CM Administration, choose **Call Routing** > **Class of Control** > **Calling Search Space**.

Step 2 Click **Add New**.

Step 3 In the **Name** field, enter a name.

Ensure that each calling search space name is unique to the system. The name can include up to 50 alphanumeric characters and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_).

Step 4 In the **Description** field, enter a description.

The description can include up to 50 characters in any language, but it cannot include double-quotes ("), percentage sign (%), ampersand (&), back-slash (\), or angle brackets (<>).

Step 5 From the **Available Partitions** drop-down list, perform one of the following steps:

- For a single partition, select that partition.
- For multiple partitions, hold down the **Control (CTRL)** key, then select the appropriate partitions.

Step 6 Select the down arrow between the boxes to move the partitions to the **Selected Partitions** field.

Step 7 (Optional) Change the priority of selected partitions by using the arrow keys to the right of the **Selected Partitions** box.

Step 8 Click **Save**.

What to do next

Configure a Device Pool for Autoregistration, on page 4

Related Topics

Class of Service

Configure a Device Pool for Autoregistration

You can use the Default device pool for autoregistration or configure separate device pools for SIP and SCCP devices to use for autoregistration.

To configure the Default device pool for autoregistration, assign the Default Cisco Unified Communications Manager Group and the autoregistration calling search space (CSS) to the Default device pool. If you choose to configure a separate default device pool for SIP and SCCP devices, use the default device pool values.

Before you begin

Configure a Calling Search Space for Autoregistration, on page 3

Procedure

Step 1 From Cisco Unified Communications Manager Administration, choose **System** > **Device Pool**.

Step 2 To modify the Default device pool for autoregistration, perform the following actions:

a) Click **Find**, then select **Default** from the list of device pools.

b) In the **Device Pool Configuration** window, select the CSS to be used for autoregistration in the **Calling Search Space for Auto-registration** field, then click **Save**.

Step 3 To create a new device pool for autoregistration, perform the following actions:

a) Click **Add New**.

b) In the **Device Pool Configuration** window, enter a unique name for the device pool.

You can enter up to 50 characters, which include alphanumeric characters, periods (.), hyphens (-), underscores (_), and blank spaces.

c) Set the following fields to match the Default device pool. See the online help for field descriptions.

- In **Cisco Unified Communications Manager Group**, select **Default**.
- In **Date/Time Group**, select **CMLocal**

- In **Region**, select **Default**.

d) Select the CSS to be used for autoregistration in the **Calling Search Space for Auto-registration** field, then click **Save**.

What to do next

Set the Device Protocol Type for Autoregistration, on page 5

Set the Device Protocol Type for Autoregistration

If you have SIP and SCCP devices to auto-register, you must first set the Auto Registration Phone Protocol parameter to SCCP and install all the devices that are running SCCP. Then change the Auto Registration Phone Protocol parameter to SIP and auto-register all the devices that are running SIP.

Before you begin

Configure a Device Pool for Autoregistration, on page 4

Procedure

Step 1 In Cisco Unified Communications Manager Administration, select **System** > **Enterprise Parameters**.

Step 2 In the **Enterprise Parameters Configuration** window, select either **SCCP** or **SIP** in the **Auto Registration Phone Protocol** drop-down list, then click **Save**.

What to do next

Enable Autoregistration, on page 5

Enable Autoregistration

When you enable autoregistration, you must specify a range of directory numbers that get assigned to the new endpoints as they connect to the network. As each new endpoint connects, the next available directory number is assigned. After all the available autoregistration directory numbers are used up, no more endpoints can auto-register.

New endpoints auto-register with the first Unified Communications Manager node in the group that has the **Auto-Registration Cisco Unified Communications Manager Group** setting enabled. That node then automatically assigns each auto-registered endpoint to a default device pool according to the device type.

Before you begin

Set the Device Protocol Type for Autoregistration, on page 5

- Create a device pool, calling search space, and route partition that restricts the access of devices that are auto-registering to allow only internal calls.

- Ensure that directory numbers are available in the autoregistration range.
- Ensure that there are enough license points available to register the new phones.
- Check that the correct phone image names for SIP and SCCP appear on the **Device Defaults Configuration** window. Although most of the common device configuration files should be available on the TFTP server, make sure that the configuration files for your devices are there.
- Ensure that the Cisco TFTP server is up and running and that the DHCP option for TFTP specifies the correct server.

Procedure

Step 1 From Cisco Unified Communications Manager Administration, select **System** > **Cisco Unified CM**, then click **Find** in the **Find and List Cisco Unified Communications Managers** window.

Step 2 Select the Cisco Unified Communications Manager in the cluster to use for autoregistration.

appears.

Step 3 In the **Cisco Unified CM Configuration** widow, configure the autoregistration parameters for the node in the **Auto-registration Information** section, then click **Save**. For more information on the fields and their configuration options, see the system Online Help.

a) Select the universal device template to use for autoregistration from the drop-down list.

If no universal device template is created for autoregistration, you can select **Default Universal Device Template**. Make sure that the selected template specifies the device pool that is to be used for autoregistration from **User Management** > **User/Phone Add** > **Universal Device Template**.

b) Select the universal line template to use for autoregistration from the drop-down list.

If no universal line template is created for autoregistration, you can select **Default Universal Line Template**. Make sure that the selected template specifies the calling search space and the route partition that are to be used for autoregistration from **User Management** > **User/Phone Add** > **Universal Line Template**.

c) Enter the starting and ending directory numbers in to the **Starting Directory Number** and **Ending Directory Number** fields.

Setting the starting and ending directory numbers to the same value disables autoregistration.

d) Uncheck **Auto-registration Disabled on this Cisco Unified Communications Manager** to enable autoregistration for this node.

Always enable or disable autoregistration on only the selected Unified Communications Manager node. If you switch the autoregistration function to another node in the cluster, you must reconfigure the Unified Communications Manager nodes, the Default Unified Communications Manager group, and the default device pools that you used.

Step 4 Select **System** > **Cisco Unified CM Group**, then click **Find** in the **Find and List Cisco Unified Communications Manager Groups** window.

Step 5 Select the Unified Communications Manager group to enable for autoregistration.

In most cases, the name of this group is **Default**. You can choose a different Cisco Unified Communications Manager group. The group must have at least one node selected.

Step 6 In the **Cisco Unified CM Group Configuration** window for that group, select **Auto-registration Cisco Unified Communications Manager Group** to enable autoregistration for the group, then click **Save**.

Tip
Ensure that the **Selected Cisco Unified Communications Managers** list contains the node that you configured for autoregistration. Use the arrows to move the node to appear in the list. The Unified Communications Manager nodes get selected in the order in which they are listed. **Save** your changes.

Step 7 Install the devices that you want to auto-register.

Note You can proceed to reconfigure the auto-registered phones and assign them to their permanent device pools. The directory number that is assigned to the phone does not change when you change the phone location.

Note To register phones of a different type, change the device protocol type and install those devices before disabling autoregistration.

Disable Autoregistration

Disable autoregistration for the node as soon as you are finished registering new devices.

Before you begin

Enable Autoregistration, on page 5

Procedure

Step 1 In Cisco Unified Communications Manager Administration, select **System** > **Cisco Unified CM**, then click **Find** in the **Find and List Cisco Unified CM** window.

Step 2 Select the **Cisco Unified Communications Manager** from the list of nodes.

Step 3 In the **Cisco Unified CM Configuration** widow for the selected node, check the **Auto-registration Disabled on this Cisco Unified Communications Manager** check box to disable autoregistration for this node, then click **Save**.

Tip
Setting the same value in the **Starting Directory Number** and **Ending Directory Number** fields also disables autoregistration.

What to do next

Optional. If you manually changed the directory number of an auto-registered device, or if you delete that device from the database, you can reuse the directory number. For details, see Reuse Autoregistration Numbers, on page 8.

Reuse Autoregistration Numbers

When you connect a new device to the network, the system assigns the next available autoregistration directory number to that device. If you manually change the directory number of an auto-registered device, or if you delete that device from the database, the autoregistration directory number of that device can be reused.

When a device attempts to auto-register, the system searches the range of autoregistration numbers that you specified and tries to find the next available directory number to assign to the device. It begins the search with the next directory number in sequence after the last one that was assigned. If it reaches the ending directory number in the range, the system continues to search from the starting directory number in the range.

You can reset the range of autoregistration directory numbers and force the system to search from the starting number in the range.

Procedure

Step 1 In Cisco Unified Communications Manager Administration, select **System** > **Cisco Unified Communications Manager**

Step 2 Select the Cisco Unified Communications Manager to reset for autoregistration.

Step 3 Write down the current settings in the **Starting Directory Number** and **Ending Directory Number** fields.

Step 4 Click **Auto-registration Disabled on this Cisco Unified Communications Manager**, then click **Save**.

New phones cannot auto-register while autoregistration is disabled.

Step 5 Set the **Starting Directory Number** and **Ending Directory Number** fields to their previous values, then click **Save**.

Tip
You could set the fields to new values.