



Configure Cisco Unified Communications Manager

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Configure Cisco Unified Communications Manager Overview

This chapter describes procedures for configuring Cisco Unified Communications Manager (Unified CM) for Cisco Emergency Responder (Emergency Responder).

See the Release Notes for Unified CM versions that are compatible with Cisco Emergency Responder.

The procedures describe what you must configure in Unified CM so that Emergency Responder can work in your telephone network.

They also describe a sample Unified CM setup. The names that are chosen (for example, partition and calling search space names) are not required.

Sections with examples represent an example setup, with sample values included for reference only. Your particular configuration depends on the needs of your network and your naming strategy.

For these examples, you work with the following calling search spaces and partitions:

- PhoneCSS - Includes the Phones partition.
- E911CSS - Includes the E911 and Phones partitions.

The examples are based on a single Unified CM cluster. If you have more than one cluster, you must repeat the configuration in each cluster, except for the emergency location identification number (ELIN) translation patterns. The ELIN translation patterns are only defined in the Unified CM cluster to which the gateway sends incoming calls from the public safety answering point (PSAP).

Set Up Phone Route Plans

Before configuring Emergency Responder, you must ensure that the phones that might be used to make emergency calls (typically all phones) are added and registered with Unified CM. See the documentation and online help included with Unified CM if you need assistance.

The following sections provide an example setup for your network before adding Emergency Responder.

Create Phone Partition

If you have not already created a partition for the phones, do so now.

Procedure

- Step 1** Select **Call Routing > Class of Control > Partition** in Cisco Unified Communications Manager.
The Find and List Partitions page appears.
- Step 2** Click **Add a New Partition**.
The Partition Configuration page appears.
- Step 3** Enter a descriptive name, such as **Phones**, in the **Partition Name and Description** field. You can optionally include a description.
- Step 4** Click **Insert** to add the new partition.

Related Topics

- [Configure Cisco Unified Communications Manager](#), on page 1
- [Create Phone Calling Search Space](#), on page 2
- [Assign Partition and Calling Search Space to Phones](#), on page 3

Create Phone Calling Search Space

If you do not already have a calling search space defined for the phones, follow this procedure to create one.

Procedure

- Step 1** Select **Call Routing > Class of Control > Calling Search Space** in Cisco Unified Communications Manager.
The Find and List Calling Search Spaces page appears.
- Step 2** Click **Add a New Calling Search Space**.
The Calling Search Space Configuration page appears.
- Step 3** Enter a descriptive name, such as **PhoneCSS**, in the **Calling Search Space Name** field.
- Step 4** Select the **Phones** partition in the Available Partitions list box, and click the arrow buttons between the two list boxes to add it to the Selected Partitions list box.

Step 5 Click **Insert** to add the new calling search space.

Related Topics

[Create Phone Partition](#), on page 2

[Configure Cisco Unified Communications Manager](#), on page 1

[Assign Partition and Calling Search Space to Phones](#), on page 3

Assign Partition and Calling Search Space to Phones

You can use the Bulk Administration Tool to change the partition and calling search space on telephones in much less time than it takes to make the changes to each phone individually. This procedure describes the phone-by-phone procedure.

After you have created the Phones partition ([Create Phone Partition, on page 2](#)) and PhonesCSS calling search space ([Create Phone Calling Search Space, on page 2](#)), configure the phones to use them.

Procedure

- Step 1** Select **Device > Phone**.
Unified CM displays the Find and List Phones page.
- Step 2** Select **Device name is not empty** in the search fields and click **Find**.
Unified CM lists all of the phones in the bottom frame.
- Step 3** Click the phone with the configuration that you want to change.
Unified CM displays the Phone Configuration page.
- Step 4** Change the calling search space to **PhoneCSS** and click **Update**.
- Step 5** Click the line number that you want to configure in the left-hand column.
Unified CM displays the Directory Number Configuration page.
- Step 6** Change the partition to **Phones**, and the calling search space to **PhoneCSS**.
- Step 7** Click **Insert** to save your changes.

Related Topics

[Create Phone Partition](#), on page 2

[Configure Cisco Unified Communications Manager](#), on page 1

[Create Phone Calling Search Space](#), on page 2

Set Up Cisco Unified Communications Manager for Emergency Responder

To handle emergency calls, you must configure the emergency call numbers (such as 911) so that Cisco Emergency Responder (Emergency Responder) intercepts them. Emergency Responder can then route the

calls to the correct public safety answering point (PSAP) and transform the call as required to route the call and to enable the PSAP operator to call back the emergency caller if the initial call is disconnected.

The following topics describe how to define the Cisco Unified Communications Manager (Unified CM) elements required for Emergency Responder.

Create Emergency Responder Partition

You must create the Emergency Responder partition E911. This partition contains the numbers used by the PSAP to call into the network and to certain other CTI route points.

Procedure

- Step 1** Select **Call Routing > Class of Control > Partition** in Cisco Unified Communications Manager.
The Find and List Partitions page appears.
- Step 2** Click **Add a New Partition**.
The Partition Configuration page appears.
- Step 3** Enter a descriptive name, such as **E911**, in the **Partition Name** field.
- Step 4** Click **Insert** to add the new partition.
-

Related Topics

- [Create Emergency Responder Calling Search Space](#), on page 4
- [Configure Cisco Unified Communications Manager](#), on page 1
- [Set Up Phone Route Plans](#), on page 2
- [Create Emergency Call Route Points](#), on page 5
- [ELIN Numbers Emergency Calls and PSAP Callbacks](#), on page 12
- [Create Route Patterns for Inter-Cisco Emergency Responder Group Communications](#), on page 19

Create Emergency Responder Calling Search Space

To create the Emergency Responder calling search space, follow these steps:

Procedure

- Step 1** Select **Call Routing > Class of Control > Calling Search Space** in Cisco Unified Communications Manager.
The Find and List Calling Search Spaces page appears.
- Step 2** Click **Add a New Calling Search Space**.
The Calling Search Space Configuration page appears.
- Step 3** Enter a descriptive name, such as **E911CSS**, in the **Calling Search Space Name** field.

Step 4 In the Available Partitions list box, select the **E911** partition and then select the **Phones** partition in that order. Click the arrow buttons between the two list boxes to add them to the Selected Partitions list box. Arrange the partitions so that E911 is at the top of the list.

If you are using any other partitions, add them to this list after the E911 partition.

Note You must list the E911 partition before the Phones partition for the following reason: When the user configures the translation pattern 911 or 9.911 (see [Create Translation Patterns for 9.911, on page 14](#)), the 911 Route Point is in the E911 partition; phones cannot look into the E911 Partition. The 911 Translation Pattern is in the phones partition and gets the E911CSS. When the E911 partition is listed first, it matches the 911 Route Point and the call goes to the Emergency Responder server as intended. If you make the error of listing the Phones partition first, the Translation Pattern keeps searching, resulting in a fast busy signal.

Step 5 Click **Insert** to add the new calling search space.

Related Topics

- [Create Emergency Responder Partition](#), on page 4
- [Configure Cisco Unified Communications Manager](#), on page 1
- [Set Up Phone Route Plans](#), on page 2
- [Create Emergency Call Route Points](#), on page 5
- [ELIN Numbers Emergency Calls and PSAP Callbacks](#), on page 12
- [Create Alternate Emergency Call Numbers](#), on page 18
- [Set Up Calling Search Space for Gateway and PSAP Connection](#), on page 19

Create Emergency Call Route Points

You must configure CTI route points in Unified CM for these numbers:

- The emergency call number for your locale, such as 911.



Note If you use 9 as the access code, see [Create Translation Patterns for 9.911, on page 14](#) to configure Emergency Responder.

- The number that your standby Emergency Responder server should listen to, such as 912.
- The number that incoming calls from the public safety answering point (PSAP) use.
- Emergency Responder modifies these calls based on your ELIN configuration to route the call to the person who initiated the emergency call, if the PSAP gets disconnected and needs to call the calling party. See [ELIN Numbers Emergency Calls and PSAP Callbacks, on page 12](#) for information about the rest of the ELIN configuration.

Before you begin

This procedure assumes you are using 911 as the main emergency call number. If a different number is used in your locale, substitute it for 911 and make similar substitutions for other numbers based on 911 such as 912. For example, if the emergency call number in your locale is 112, use 112, and perhaps 113, 114.

When you install Emergency Responder, you are required to enter the emergency call number. In this procedure, configure the same number you specify during installation.



Note CTI route points for the 911, 912, and 913 emergency numbers must be unique. You should not have more than one CTI route point addressed to the emergency numbers used earlier.

The following table describes the emergency call route points.

Table 1: Emergency Call Route Points

Route Point Setting	Route Points		
	Primary Number (911)	Backup Number (912)	ELIN (913)
Device Name	RP911	RP912	RPELIN913
Description	The emergency call number for the area. Emergency Responder handles all calls to this number.	Route point for the Emergency Responder standby server. If the primary server is unable to handle a call, the standby server receives the call through this route point.	<p>The destination of all incoming calls from the PSAP. Emergency Responder transfers these calls to the emergency caller. The Route pattern is a prefix (913) plus a Fully Qualified Number.</p> <p>Fully Qualified Number could be North American Numbering Plan or E.164 with Country Code. In case the ELIN is received as E.164 number with a leading plus sign (+), use a Translation Pattern to remove the leading plus sign.</p> <p>Note In case the ELIN is received as E.164 number with a leading plus sign (+), use a Translation Pattern to remove the leading plus sign.</p>
Directory Number	911	912	913XXXXXXXXXX
Partition	Phones	E911	E911
Calling Search Space	E911CSS	E911CSS	E911CSS

Route Point Setting	Route Points		
	Primary Number (911)	Backup Number (912)	ELIN (913)
Forward Busy	Destination: 912 CSS: E911CSS	Destination: <ul style="list-style-type: none"> Route pattern for default ERL. or <ul style="list-style-type: none"> Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS
Forward No Answer	Destination: 912 CSS: E911CSS	Destination: <ul style="list-style-type: none"> Route pattern for default ERL. or <ul style="list-style-type: none"> Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS
Forward On Failure	Destination: 912 CSS: E911CSS	Destination: <ul style="list-style-type: none"> Route pattern for default ERL. or <ul style="list-style-type: none"> Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS
Voice Mail Mask	Do not configure a Voice Mail Mask for this route point.	Do not configure a Voice Mail Mask for this route point.	Do not configure a Voice Mail Mask for this route point.



Note Configuring call-forwarding numbers for the standby server ensures that calls are either routed to the PSAP servicing the default ERL, or onsite security, if the standby server cannot handle the call. If you do not install a standby server, use these settings for the primary server. Configuring call-forwarding numbers for the ELIN route point ensures that PSAP callbacks go to onsite security if Emergency Responder cannot handle the call.

Procedure

Step 1 In Unified CM, select **Device > CTI Route Point**.

The Find and List CTI Route Points page appears.

Step 2 Click **Add a new CTI Route Point**.

The CTI Route Point Configuration page appears.

Step 3 Fill in the CTI route point properties:

- Enter a unique name, such as **RP911**, in the **Device Name** field to identify this as the emergency call number. The Emergency call route points table above shows suggested names, but you can use any name you choose.
- Select the appropriate device pool from the **Device Pool** menu.
- Select the calling search space for the route point, as listed in the Emergency call route points table above.

Step 4 Click **Insert** to add the new CTI route point.

Unified CM adds the route point and asks if you want to configure line 1. Click **OK** to configure line 1.

Unified CM opens the Directory Number configuration page.

Step 5 Enter the configuration for the line you are creating using the information in the Emergency call route points table above.

Step 6 Click **Insert**.

Unified CM adds the line to the device. Repeat this procedure until all devices described in the Emergency call route points table above are configured.

For additional assistance, see documentation and online help included with Unified CM.

Related Topics

[Create Emergency Responder Partition](#), on page 4

[Create Emergency Responder Calling Search Space](#), on page 4

[ELIN Numbers Emergency Calls and PSAP Callbacks](#), on page 12

[Create Route Patterns for Inter-Cisco Emergency Responder Group Communications](#), on page 19

[Create Alternate Emergency Call Numbers](#), on page 18

[Create Emergency Responder Cisco Unified Communications Manager User](#), on page 22

[Set Up Group Telephony Settings for Server](#)

[Installation on a New System](#)

Create Required CTI Ports

Emergency Responder uses CTI ports to call onsite alert (security) personnel when someone makes an emergency call. You should have enough CTI ports so that each person assigned to an ERL can receive a call. The number of ports that you configure is the number of simultaneous calls Emergency Responder can make to these personnel. It does not relate to the number of emergency calls Emergency Responder can handle or forward to the PSAP. There is no configurable limitation to the number of simultaneous emergency calls that Emergency Responder can handle.

Before you begin

Emergency Responder requires that the CTI port extension numbers be in succession, so you must find a block of unused extensions. For example, if you want to create four CTI ports starting at 3001, then 3001, 3002, 3003, and 3004 must all be available.

Procedure

- Step 1** Select **Device > Phone**.
Cisco Unified Communications Manager opens the Find and List Phones page.
- Step 2** Click **Add a New Phone**.
Cisco Unified Communications Manager opens the Add a New Phone page.
- Step 3** Select **CTI Port** for **Phone Type** and click **Next**.
Cisco Unified Communications Manager opens the Phone Configuration page.
- Step 4** Configure the CTI Port, entering this information:
- **Device Name**- Enter something meaningful to you, for example, CTI3001.
 - **Device Pool**- Select an appropriate device pool. This device pool must use the G.711 region.
 - **Calling Search Space**- Select **PhoneCSS**.
- Step 5** Click **Insert**.
Cisco Unified Communications Manager creates the CTI port and asks if you want to configure line 1. Click **OK**. Cisco Unified Communications Manager opens the Directory Number Configuration page.
- Step 6** Configure line 1 for the CTI port, entering this information:
- **Partition**- Select **Phones**.
 - **Calling Search Space**- Select **PhoneCSS**.
- Note** Configure only one line for each CTI port. Onsite security alert prompts may not get from one or more of these lines when the online alert notification is initiated through these ports.
- Step 7** Click **Insert**.
Cisco Unified Communications Manager adds the line to the device. Repeat the procedure to create each CTI route port that you require.
- Note** All subsequent CTI ports you create must be consecutive from the first CTI port DN.
CTI port DN in Cisco Emergency Responder does not support E.164 dial pattern.

Related Topics

- [Create Emergency Responder Partition](#), on page 4
- [Create Emergency Responder Calling Search Space](#), on page 4
- [Create Emergency Responder Cisco Unified Communications Manager User](#), on page 22
- [Identify Cisco Unified Communications Manager Clusters](#)

[ERL Creation](#)

Create a Cisco Unified Communications Manager Group for Cisco Emergency Responder

A Cisco Unified Communications Manager (Unified CM) Group is a list of up to three Unified CMs that are assigned to a device pool to assist with call processing. The first Unified CM in the list acts as the primary Unified CM for the Group and the other members act as secondary and tertiary or backup Unified CMs. By creating a Unified CM Group, you can balance the call process load across multiple Unified CMs and ensure a level of redundancy for your network.

Because each device pool has one Unified CM Group assigned to it, a Unified CM Group improves your load distribution across a device pool. When a device registers, it attempts to connect to the primary Unified CM in the Unified CM Group. If the primary Unified CM is not available, the device tries to connect with the secondary Unified CM. If the secondary Unified CM is not available, the device tries to connect to the tertiary Unified CM.

You must create a Unified CM Group for Emergency Responder.



Note The primary Cisco Unified CM in the Group assigned to the device pool for Cisco ER must also be the primary CTI Manager for Cisco Emergency Responder. The Group must also contain the secondary CTI manager for Cisco ER.

Procedure

- Step 1** Select **System > Unified CM Group**.
The Find and List Unified CM Groups page opens.
- Step 2** Click **Add New**.
The Unified CM Group Configuration page opens.
- Step 3** Enter the following information in the appropriate field:
- **Name** – Enter a CM Group name that is meaningful to you; for example, Cisco Emergency Responder CM Group.
 - **Auto-registration Cisco Unified Communications Manager Group** - Do not check this box for the Unified CM Group for Emergency Responder.
 - **Cisco Unified Communications Managers** – Add the primary and secondary CTI Manager for Emergency Responder to the list of Selected Cisco Unified Communications Managers by selecting each from the Available Cisco Unified Communications Managers and clicking the **Down Arrow**.
- Step 4** Click **Save**.
-

Error and System Messages

Unified CM generates several alarms to assist you in troubleshooting Emergency Responder problems. You should set up notification of Emergency Responder events so that an email notification alerts you to such important events.

The following table shows the relevant alarms.

Table 2: Relevant Unified CM Alarms

Relevant Alarms	Alarm Level	Explanation	Recommended Action
CtiProviderOpened	Informational	Application opened the provider successfully.	This alarm is for informational purposes only; no action is required.
CtiProviderClosed	Informational	Application closed the provider.	Verify that Cisco Emergency Responder is up and running, verify network connectivity between application server and Unified CM, and verify the CPU utilization is in the safe range for the application server and Unified CM.
ApplicationConnectionDropped	Warning	TCP or TLS connection between CTIManager and Application is disconnected.	Verify that Cisco Emergency Responder is up and running, verify network connectivity between the application server and Unified CM, and verify the CPU utilization is in the safe range for the application server and Unified CM.
CtiIncompatibleProtocolVersion	Warning	The Cisco Emergency Responder version or its Unified Communications Manager setting is not compatible with this version of CTIManager.	Verify that the correct version of the Cisco Emergency Responder is being used and its Unified CM version setting is correct. See Change Cisco Unified Communications Manager Version to view and update the Unified CM version.

By default, only Error events are posted to the event log. You should modify the event level to post warnings and set up a customer alert if the Emergency Responder user closes its applications or ports.

To do this, navigate to the Serviceability Web Page by selecting **Alarm > Configuration > Server > Service Group (CM Services) > Service (Cisco CTI Manager)**. Change the Alarm Event Level to Error to have all of the last three alarms in the above table posted to SysLog.

These alarms are systemwide alarms and not specific to Emergency Responder. So any CTI application that triggers a warning message will post to the event log and not only Emergency Responder. You should set up notification of Unified CM events relevant to Emergency Responder so that if the provider goes out of service, an email or other notification event will alert you.

ELIN Numbers Emergency Calls and PSAP Callbacks

Emergency calls are routed based on the calling party number, not the called party number. If an emergency call is disconnected for some reason (for example, the caller hangs up), the PSAP needs to be able to call back the emergency caller using the calling party number. The PSAP might also want to call back to obtain updated information after ending an emergency call normally.

Emergency Responder converts a caller extension to an emergency location identification number (ELIN), and this number is used to route the call and to enable PSAP callbacks. Emergency Responder reuses the same set of numbers, and keeps track of the internal extension of the phone from which the call was made for up to three hours. When there is no active association of an ELIN to an internal phone extension, Emergency Responder routes calls to that ELIN to on-site security.

To set up the ELIN numbers, you must first obtain direct inward dial (DID) numbers from your service provider. Because you must pay for each number, you might want to limit the number of DIDs you obtain to two or three per ERL. The DIDs must be unique for each ERL.

Emergency Responder reuses the ELIN numbers assigned to an ERL if necessary. For example, if you configure two numbers for an ERL, and three emergency calls are made within a three-hour period, the first emergency caller's ELIN mapping is replaced by the third caller's extension. If the PSAP tries to call the first caller, the PSAP reaches the third caller. This information will help as you determine the number of DIDs you need for each ERL.

See [ERL Creation](#) for information about how to configure the ERLs with these numbers.

Create Route Patterns for ERLs

Emergency Responder uses route patterns to route emergency calls to the local public safety answering point (PSAP). In the route pattern, you are associating a pattern with a gateway that connects to the PSAP. The gateway you choose depends on the emergency response location (ERL) to which you assign the route pattern.

You must create one route pattern for every ERL in your network. These are the direct inward dial (DID) numbers you obtain from your service provider for the purpose of allowing the PSAP to call into your network.

Before you begin

Each ERL requires unique route patterns for the ELINs. Work with the ERL administrator to get an idea of how many route patterns are needed, and the locale of the ERLs so that you can select an appropriate gateway. The ERL administrator must enter the route patterns you create into the ERL definition. See [ERL Creation](#) for information about ERLs.

Procedure

Step 1 Select **Call Routing > Route/Hunt > Route Pattern** in Cisco Unified Communications Manager.

Unified CM opens the Find and List Route Patterns page.

Step 2 Click **Add a New Route Pattern**.

Unified CM opens the Route Pattern Configuration page.

Step 3 Enter the information for the route pattern:

- **Route Pattern** - A pattern that you can transform to the emergency call number, typically a number, a dot, and the emergency call number. For example, 10.911, 11.911, and so forth. The pattern can only contain numbers and dots.
- **Partition** - Select **E911**.
- **Numbering Plan** - Select the numbering plan for your area.
- **Gateway/Route List** - Select the gateway to use for connecting to the local PSAP.
- **Route Option** - Select **Route this pattern**.
- **Use Calling Party's External Phone Number Mask** - Select this option.
- **Discard Digits** - Select **PreDot** if you use the suggested pattern, such as 10.911. If using a different technique, select the appropriate setting and enter a **Called Party Transform Mask** if necessary (to dial the emergency number).

Step 4 Click **Insert**.

Unified CM saves the route pattern. To add additional route patterns, return to [Step 2, on page 13](#).

Tip Consider developing a detailed naming strategy for the route patterns because you might end up with a large number of them. For example, you could use a pattern such as xyzzaaab.911, where x is a Emergency Responder cluster identifier; y is a Emergency Responder group identifier; zz is the PSAP identifier; aaa is the ERL identifier; and b is the ELIN identifier (within the ERL).

Related Topics

- [Create Translation Patterns for ELINs, on page 13](#)
- [Create Emergency Responder Partition, on page 4](#)
- [Configure Cisco Unified Communications Manager, on page 1](#)
- [ERLs](#)
- [ERL Creation](#)

Create Translation Patterns for ELINs

Create translation patterns that cover the direct inward dial (DID) numbers you are using for ELIN numbers. The PSAP uses these ELINs to call into your network. Emergency Responder needs to intercept these calls so it can route the call to the correct emergency caller. The translation pattern is required so that a number prefixed to the ELIN becomes the route point you configured for PSAP callbacks, as explained in the [Create Emergency Call Route Points, on page 5](#).

Before you begin

Ensure that you have a list of all the DIDs you are using for ELINs.

Procedure

- Step 1** Select **Call Routing > Translation Pattern** in Cisco Unified Communications Manager. Unified CM opens the Find and List Translation Patterns page.
- Step 2** Click **Add a New Translation Pattern**. Unified CM opens the Translation Pattern Configuration page.
- Step 3** Create the translation pattern:
- **Translation Pattern** - The DID you are using as an ELIN. If you can, use X variables to create a pattern that covers more than one DID (for example, 5555551XXX). If you cannot create a pattern, define translation patterns for each DID separately.
 - **Partition** - Select **E911**.
 - **Numbering Plan**- Select the numbering plan for your area.
 - **Calling Search Space** - Select **E911CSS**.
 - **Route Option** - Select **Route this pattern**.
 - **Called Party Transformations, Prefix Digits (Outgoing Calls)**—Enter the digits to prefix to the number. Enter the digits you used when creating the PSAP callback route point.
- Step 4** Click **Insert**. Unified CM saves the translation pattern. To add additional translation patterns, return to [Step 2, on page 14](#).

Related Topics

- [Create Route Patterns for ERLs](#), on page 12
- [Configure Cisco Unified Communications Manager](#), on page 1
- [ERLs](#)
- [ERL Creation](#)

Create Translation Patterns for 9.911

In systems where the external access code is 9, a CTI Route Point of 911 or 9.911 may interfere with the timing of secondary dialtone for users when they are attempting to dial external destinations. The creation of a translation pattern for 911 and 9.911 eliminates the secondary dialtone timing.

Create translation patterns so that when users dial the local system external access code of 9 plus 911, the calls are directed to the single 911 pattern previously created in the [Create Emergency Call Route Points, on page 5](#).

Before you begin

This procedure applies to systems where the external access code is 9. If the external access code is something other than 9, this procedure may not apply.

To complete this procedure, you must have already added the partitions and the calling search space for the CiscoEmergencyResponder installation.

The following table provides translation patterns for external access code of 9.

Table 3: Translation Patterns for External Access Code of 9

Translation Pattern	911	9.911
Partition	Phones	Phones
Calling Search Space	E911CSS	E911CSS
Route Option	Route this pattern	Route this pattern
Provide outside dial tone	Check this box	Check this box
Called Party Transformations, Discard Digits (Outgoing Calls)	None	PreDot

Procedure

Step 1 Select **Call Routing > Translation Pattern** in Cisco Unified Communications Manager. Unified CM opens the Find and List Translation Patterns page.

Step 2 Click **Add a New Translation Pattern**. Unified CM opens the Translation Pattern Configuration page.

Step 3 Create the translation pattern:

- **Translation Pattern** - 911.
- **Partition** - Phones.
- **Numbering Plan** - Select the numbering plan for your area.
- **Calling Search Space** - Select **E911CSS**.
- **Route Option** - Select **Route this pattern**.
- **Provide Outside Dial Tone** - Make sure that this box is checked.
- **Called Party Transformations, Discard Digits** - Select <none>.

Step 4 Click **Insert**. Unified CM saves the translation pattern.

Step 5 Repeat [Step 2, on page 14](#) to [Step 4, on page 14](#) with the following changes:

- **Translation Pattern**—9.911
- **Called Party Transformations, Discard Digits (Outgoing Calls)**—PreDot

After you have configured the 9.911 translation patterns, you must create the route points. [Table 3: Translation Patterns for External Access Code of 9, on page 15](#) provides emergency call route points for 9.911.

Note These route points are similar to the route points that you created in the [Create Emergency Call Route Points, on page 5](#). In this case, you enter E911 for the partition instead of Phones.

Table 4: Emergency Call Route Points for 9.911

Route Point Setting	Route Points		
	Primary Number (911)	Backup Number (912)	ELIN (913)
Device Name	RP911	RP912	RPELIN913
Description	The emergency call number for the area. Emergency Responder handles all calls to this number.	Route point for the Emergency Responder standby server. If the primary server is unable to handle a call, the standby server receives the call through this route point.	The destination of all incoming calls from the PSAP. Emergency Responder transfers these calls to the emergency caller. Route pattern is prefix (913) plus 10 Xs. Number of Xs should be the same as the standard phone number used in your locale based on your numbering plan. The number can only consist of numbers and Xs.
Directory Number	911	912	913XXXXXXXXXX
Partition	E911	E911	E911
Calling Search Space	E911CSS	E911CSS	E911CSS
Forward Busy	Destination: 912 CSS: E911CSS	Destination: • Route pattern for default ERL. or • Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS
Forward No Answer	Destination: 912 CSS: E911CSS	Destination: • Route pattern for default ERL. or • Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS

Route Point Setting	Route Points		
	Primary Number (911)	Backup Number (912)	ELIN (913)
Forward On Failure	Destination: 912 CSS: E911CSS	Destination: <ul style="list-style-type: none"> • Route pattern for default ERL. or • Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS

Note Configuring call-forwarding numbers for the standby server ensures that calls are either routed to the PSAP servicing the default ERL or to onsite security, if the standby server cannot handle the call. If you do not install a standby server, use these settings for the primary server. Configuring call-forwarding numbers for the ELIN route point ensures that PSAP callbacks go to onsite security if Emergency Responder cannot handle the call.

Related Topics

[Create Route Patterns for ERLs](#), on page 12

[Configure Cisco Unified Communications Manager](#), on page 1

[ERLs](#)

Create Route Points for 9.911

Procedure

-
- Step 1** In Unified CM, select **Device > CTI Route Point**.
The Find and List CTI Route Points page appears.
- Step 2** Click **Add a new CTI Route Point**.
The CTI Route Point Configuration page appears.
- Step 3** Fill in the CTI route point properties:
- Enter a unique name, such as **RP911**, in the **Device Name** field to identify this as the emergency call number. [Table 3: Translation Patterns for External Access Code of 9, on page 15](#) shows suggested names, but you can use any name you choose.
 - Select the appropriate device pool from the **Device Pool** menu.
 - Select the calling search space for the route point, as listed in [Table 3: Translation Patterns for External Access Code of 9, on page 15](#).
- Step 4** Click **Insert** to add the new CTI route point.
- Unified CM adds the route point and asks if you want to configure line 1. Click **OK** to configure line 1.
 - Unified CM opens the Directory Number configuration page.

Step 5 Enter the configuration for the line that you are creating using the information in [Table 3: Translation Patterns for External Access Code of 9, on page 15](#).

Step 6 Click **Insert**.

Unified CM adds the line to the device. Repeat this procedure until all devices described in [Table 3: Translation Patterns for External Access Code of 9, on page 15](#) are configured.

For additional assistance, see the documentation and online help included with Unified CM.

Related Topics

[Create Route Patterns for ERLs, on page 12](#)

[Configure Cisco Unified Communications Manager, on page 1 ERLs](#)

Create Alternate Emergency Call Numbers

If your users are used to dialing 9 (or another number) to get an outside line, they might try to dial the emergency number by first dialing the outside line access number. For example, if the emergency number is 911, they might try to dial 9911. If you want to accommodate these possibilities, configure translation patterns for the numbers you think are likely to be used. This procedure shows how to set up 9911 as an alternate emergency call number.

Procedure

Step 1 Select **Call Routing > Translation Pattern**.

Unified CM opens the Find and List Translation Patterns page.

Step 2 Click **Add a New Translation Pattern**.

Unified CM opens the Translation Pattern Configuration page.

Step 3 Create the translation pattern:

- **Translation Pattern** - The number you want to support as an emergency number. In this example, 9.911.
- **Partition** - Select **Phones**.
- **Numbering Plan** - Select the numbering plan for your area.
- **Calling Search Space** - Select **E911CSS**.
- **Route Option** - Select **Route this pattern**.
- **Provide Outside Dial Tone** - Select this.
- **Called Party Transformations, Discard Digits (Outgoing Calls)** - Select **PreDot**.

Step 4 Click **Insert**.

Unified CM saves the translation pattern. To add additional translation patterns, return to [Step 2, on page 14](#).

Related Topics

[Configure Cisco Unified Communications Manager, on page 1](#)

[Create Phone Partition, on page 2](#)

[Create Phone Calling Search Space](#), on page 2

Set Up Calling Search Space for Gateway and PSAP Connection

You must set up a gateway to use a CAMA or PRI connection to the emergency network or PSTN so that emergency calls can be routed to the local PSAP. See the documentation for your gateway for information about setting up the gateway, and the Unified CM documentation for configuring the gateway. After you set up the gateway, you can follow this procedure to set up the calling search space for the gateway.

Procedure

- Step 1** Select **Device > Gateway**.
Unified CM opens the Find and List Gateways page.
- Step 2** Click **Find** without entering search criteria to list all of the gateways, or enter the search criteria required to list the gateway you want to configure and click **Find**.
Unified CM lists the gateways that match your criteria.
- Step 3** Click the gateway you want to configure.
Unified CM opens the Gateway Configuration page.
- Step 4** Select **E911CSS** for **Calling Search Space**.
- Step 5** Click **Update**.
Unified CM saves your changes.
-

Related Topics

- [Create Emergency Responder Calling Search Space](#), on page 4
- [CAMA and PRI Trunks](#)
- [Emergency Responder Deployment](#)
- [Emergency Responder and Your Network](#)

Create Route Patterns for Inter-Cisco Emergency Responder Group Communications

If you have more than one Emergency Responder group in an Emergency Responder cluster, you must configure route patterns to enable each Emergency Responder group to route emergency calls to another Emergency Responder group if a caller's phone homes to a Unified CM cluster outside the current location of the phone. See [Cisco Emergency Responder Clusters](#) for a detailed explanation of how Emergency Responder groups communicate within a Emergency Responder cluster.

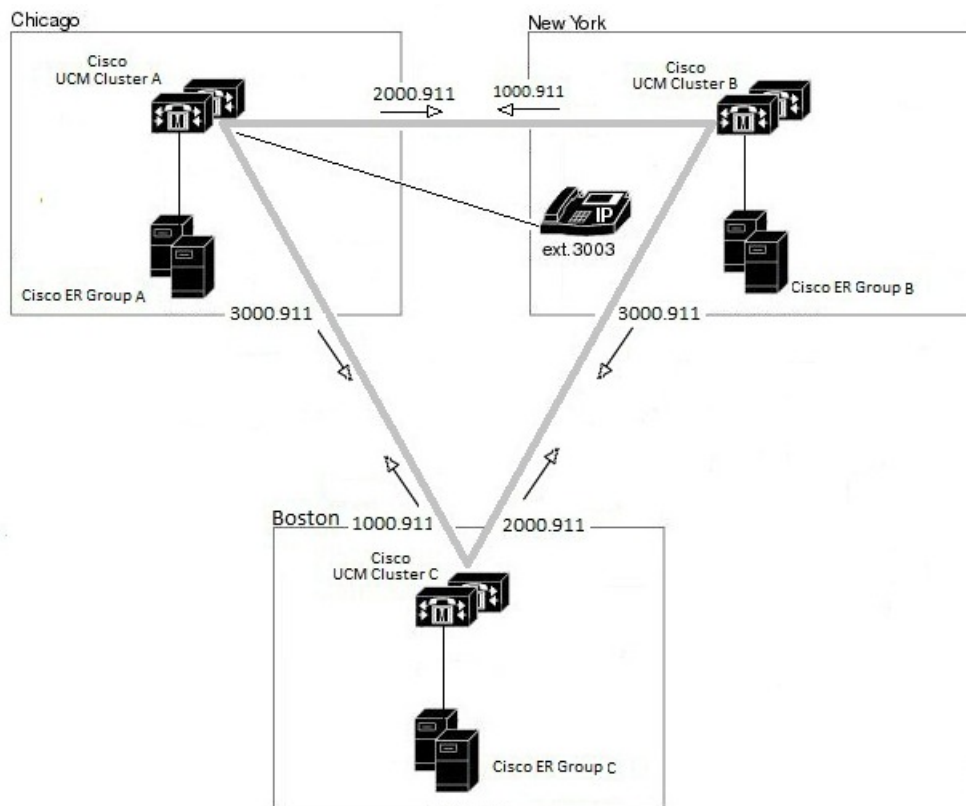
This procedure explains how to create the route pattern for one Emergency Responder group. The Inter-Cisco ER Group Route Pattern defined on a Emergency Responder Group is a route pattern for incoming Emergency Calls. Consider the network setup in the following figure.

For inter-group communications to work:

- You must define inter-cluster trunks in each Unified CM cluster to enable communications between the Unified CM clusters. See the Unified CM documentation for information about creating these types of gateways.
- Define the route pattern on the Unified CM
 - Define route pattern 2000.911 and 3000.911 in CUCM cluster A.
 - Define Route Pattern 1000.911 and 3000.911 in CUCM cluster B.
 - Define Route Pattern 1000.911 and 2000.911 in CUCM cluster C.
- Define Inter-Emergency Responder Group Route Pattern
 - In Emergency Responder Group A, define 1000.911 as the Inter-Emergency Responder Group Route Pattern.
 - In Emergency Responder Group B, define 2000.911 as the Inter-Emergency Responder Group Route Pattern.
 - In Emergency Responder Group C, define 3000.911 as the Inter Emergency Responder Group Route Pattern.

These definitions allow a call in an ERL managed by Emergency Responder Group B to be routed to Emergency Responder Group B even though the phone homes to Unified CM cluster A, which is serviced by Emergency Responder Group A.

Figure 1: Understanding Inter-Cisco Emergency Responder Group Route Patterns



Related Topics

- [Create Emergency Responder Partition](#), on page 4
- [Set Up Group Telephony Settings for Server Installation on a New System](#)

Create Route Patterns on Unified CM

Before you begin

The dial plans must be unique between all Unified CM clusters supported by a Emergency Responder cluster. For example, in the network shown in [Create Route Patterns for Inter-Cisco Emergency Responder Group Communications](#), on page 19, the extension 3003 can only be defined in Unified CM cluster CUCM-A.

Procedure

-
- Step 1** Go to Cisco Unified CM Administration. Select **Call Routing > Route/Hunt > Route Pattern**. Unified CM opens the Find and List Route Patterns page.
- Step 2** Click **Add New**. Unified CM opens the Route Pattern Configuration page.
- Step 3** Enter the information for the route pattern:
- **Route Pattern**— A pattern that you can transform to the emergency call number, typically a number, a decimal point, and the emergency call number. For example, 1000.911 or 2000.911. The pattern can only consist of numbers and decimal points.
 - **Partition** — Select **E911**.
 - **Numbering Plan** — Select the numbering plan for your area.
 - **Gateway/Route List** — Select the inter-cluster trunk gateway to use for connecting to the Unified CM cluster supported by the Emergency Responder group whose inter-Emergency Responder group route pattern you are defining.
 - **Route Option** — Select **Route this pattern**.
 - **Called Party Transformations: Discard Digits** — Select **PreDot** if you use the suggested pattern, such as 1000.911. If using a different technique, select the appropriate setting and enter a **Called Party Transform Mask**, if necessary to dial the emergency number.
- Step 4** Click **Save**. Unified CM saves the route pattern. To add additional route patterns, return to [Step 2](#), on page 13.
-



Note Ensure that you define the route pattern in all other Unified CM clusters serviced by Emergency Responder groups other than the Emergency Responder group whose Inter-Emergency Responder group route pattern you are defining.



Note For emergency calls to work across Emergency Responder Server Groups in a Emergency Responder cluster with Unified CM 8.5 or later, the Calling Party Selection option should be set to Originator in the **Device > Trunk Configuration** page in Unified CM Administration website.

Create an Inter-Emergency Responder Group Route Pattern



Note Ensure you define the Inter-Emergency Responder Route pattern in all other Cisco Emergency Responder groups.

Procedure

- Step 1** Go to Cisco Emergency Responder Administration. Select **System > Telephony Settings**.
 - Step 2** Add the Inter-Emergency Responder Route pattern.
 - Step 3** Update Settings.
-

Create Emergency Responder Cisco Unified Communications Manager User

You must add Emergency Responder as a Unified CM user. The settings you enter here are used when you configure the Unified CM settings for Emergency Responder.

Procedure

- Step 1** In Unified CM, select **User Management > Application User**. Click the **Add New** button.
Unified CM displays the Application User Configuration page.
- Step 2** Complete the following required fields:
 - **UserID**—Use a descriptive name such as “Emergency_Responder_User.”
 - **Password**—Enter a password for this user.
 - **Confirm Password**—Reenter the password for this user.
- Step 3** In the **Device Information** section, select the desired route points and CTI ports and then click the down arrow to add the selected devices to the user control list. The list of devices appears in the Controlled Devices area.
- Step 4** Select the following devices:
 - Note** You may need to use Find Phones or Find Route Points to select the desired devices.

- All CTI ports created for Cisco Emergency Responder use. For more information, see “Creating the Required CTI Ports” section.
- The primary emergency call number, for example, 911.
- The backup emergency call number, for example, 912.
- The route point used for ELINs, for example, 913XXXXXXXXXX.

- Step 5** Click **Save**.
- Step 6** In the Unified CM menu at the top, click **User Management > User Group**.
The user group search page appears.
- Step 7** At search criterion, enter standard and click **Find**.
The list of user groups starting with the name standard appears.
- Step 8** Click the **Standard CTI Allow Calling Number Modification** user group link to display the User Group configuration page.
- Step 9** Click **Add Application Users to Group**.
The Find and List Application Users popup window appears.
- Step 10** Enter the User ID and click **Find**.
The list of Applications users appears.
- Step 11** Check the check box next to the user ID and click **Add Selected**.
Unified CM adds the selected user to the Standard CTI Allow Calling Number Modification user group.
- Step 12** Choose **User Management > User Group**.
The user group search page appears.
- Step 13** Enter **standard** as the search criterion and click **Find**.
The list of user groups starting with the name Standard appears.
- Step 14** Click the **Standard CTI Enabled** group.
Repeat steps 9 through 11 to add the user to the Standard CTI Enabled group.

Related Topics

- [Create Emergency Call Route Points](#), on page 5
- [Create Required CTI Ports](#), on page 8

