



CHAPTER 4

Configuring Cisco Unified Communications Manager Versions 5.0 and Later for Cisco Emergency Responder 8.0

This chapter describes procedures for configuring Cisco Unified Communications Manager (Cisco Unified CM) 5.0, 5.1, 6.0, 6.1, 7.0, 7.1 and 8.0 for Cisco Emergency Responder (Cisco ER) 8.0. If you are running Cisco Unified CM 4.1, 4.2 or 4.3, follow the procedures in [Chapter 3, “Configuring Cisco Unified Communication Manager 4.1, 4.2 and 4.3 for Cisco Emergency Responder 8.0.”](#)

These topics describe the items you must configure in Cisco Unified CM 5.0, 5.1, 6.0, and 6.1 so that Cisco ER can work in your telephone network. These topics describe a sample Cisco Unified CM setup—the names chosen (for example, partition and calling search space names) are not required.

- [Setting Up Phone Route Plans, page 4-1](#)
- [Setting Up Cisco Emergency Responder to Handle Emergency Calls, page 4-4](#)
- [Creating a Cisco Emergency Responder Cisco Unified Communications Manager User, page 4-18](#)
- [Configuring JTAPI Security, page 4-20](#)

Understanding the Cisco Unified CM Examples

These sections 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 will be working 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 Cisco 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 Cisco Unified CM cluster to which the gateway will send incoming calls from the public safety answering point (PSAP).

Setting Up Phone Route Plans

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

These sections provide an example setup for your network *before* adding Cisco ER:

- [Creating a Phone Partition, page 4-2](#)
- [Creating a Phone Calling Search Space, page 4-2](#)
- [Assigning the Partition and Calling Search Space to Phones, page 4-3](#)

Creating a Phone Partition

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

To create a phone partition, follow these steps:

Procedure

-
- Step 1** In Cisco Unified CM , select **Call Routing > Class of Control > Partition**.
The Find and List Partitions page appears.
- Step 2** Click **Add New**.
The Partition Configuration page appears.
- Step 3** In the **Name** field, enter a descriptive name, such as **Phones**. You can include a description (optional).
- Step 4** Click **Save** to add the new partition.
-

Related Topics

- [Understanding the Cisco Unified CM Examples, page 4-1](#)
- [Creating a Phone Calling Search Space, page 4-2](#)
- [Assigning the Partition and Calling Search Space to Phones, page 4-3](#)

Creating a Phone Calling Search Space

If you do not already have a calling search space defined for the phones, define one now.

To define a calling search space for the phones, follow these steps:

Procedure

-
- Step 1** In Cisco Unified CM , select **Call Routing > Class of Control > Calling Search Space**.
The Find and List Calling Search Spaces page appears.
- Step 2** Click **Add New**.
The Calling Search Space Configuration page appears.
- Step 3** In the **Calling Search Space Name** field, enter a descriptive name, such as **PhoneCSS**.
- Step 4** In the Route Partitions for this Calling Search Space list box, select the **Phones** partition and click the arrow buttons between the two list boxes to add it to the Selected Partitions list box.
- Step 5** Click **Save** to add the new calling search space.
-

Related Topics

- [Understanding the Cisco Unified CM Examples, page 4-1](#)
- [Creating a Phone Partition, page 4-2](#)
- [Assigning the Partition and Calling Search Space to Phones, page 4-3](#)

Assigning the Partition and Calling Search Space to Phones

After you have created the Phones partition ([Creating a Phone Partition, page 4-2](#)) and PhoneCSS calling search space ([Creating a Phone Calling Search Space, page 4-2](#)), configure the phones to use them.

Before You Begin

You can use the Bulk Administration Tool (BAT) 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.

To assign the partition and calling search space to phones, follow these steps:

Procedure

-
- | | |
|---------------|--|
| Step 1 | Select Device>Phone .
Cisco Unified CM displays the Find and List Phones page. |
| Step 2 | In the search fields, select Device Name and click Find .
Cisco Unified CM lists all of the phones in the bottom frame. |
| Step 3 | Click the phone whose configuration you want to change.
Cisco 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 you want to configure in the left-hand column.
Cisco 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 Save to save your changes. |
-

Related Topics

- [Understanding the Cisco Unified CM Examples, page 4-1](#)
- [Creating a Phone Partition, page 4-2](#)
- [Creating a Phone Calling Search Space, page 4-2](#)

Setting Up Cisco Emergency Responder to Handle Emergency Calls

To handle emergency calls, you must configure the emergency call numbers (such as 911) so that Cisco ER intercepts them. Cisco ER 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.

These topics describe how to define the Cisco Unified CM elements required for Cisco ER:

- [Creating a Cisco Emergency Responder Partition E911, page 4-4](#)
- [Creating a Cisco Emergency Responder Calling Search Space, page 4-5](#)
- [Creating the Emergency Call Route Points, page 4-5](#)
- [Creating the Required CTI Ports, page 4-8](#)
- [Setting Up the ELIN Numbers to Route Emergency Calls and Enable PSAP Callbacks, page 4-9](#)
- [Creating Alternate Emergency Call Numbers, page 4-15](#)
- [Configuring the Calling Search Space for the Gateways Used to Connect to the PSAP, page 4-16](#)
- [Creating Route Patterns for Inter-Cisco Emergency Responder-Group Communications, page 4-17](#)

Creating a Cisco Emergency Responder Partition E911

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

To create the Cisco ER partition E911, follow these steps:

Procedure

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

Related Topics

- [Understanding the Cisco Unified CM Examples, page 4-1](#)
- [Creating a Cisco Emergency Responder Calling Search Space, page 4-5](#)
- [Setting Up Phone Route Plans, page 4-1](#)
- [Creating the Emergency Call Route Points, page 4-5](#)
- [Setting Up the ELIN Numbers to Route Emergency Calls and Enable PSAP Callbacks, page 4-9](#)
- [Creating Route Patterns for Inter-Cisco Emergency Responder-Group Communications, page 4-17](#)

Creating a Cisco Emergency Responder Calling Search Space

You must create a Cisco ER calling search space.

To create a Cisco ER calling search space, follow these steps:

Procedure

-
- Step 1** Select **Call Routing > Calling Search Space** from Cisco Unified CM.
The Find and List Calling Search Spaces page appears.
- Step 2** Click **Add New**.
The Calling Search Space Configuration page appears.
- Step 3** In the **Calling Search Space Information Name** field, enter a descriptive name, such as **E911CSS**.
- 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 the [“Creating the Translation Patterns for 9.911” section on page 4-12](#)), the 911 Route Point will be 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 Cisco ER 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 **Save** to add the new calling search space.
-

Related Topics

- [Understanding the Cisco Unified CM Examples, page 4-1](#)
- [Creating a Cisco Emergency Responder Partition E911, page 4-4](#)
- [Setting Up Phone Route Plans, page 4-1](#)
- [Creating the Emergency Call Route Points, page 4-5](#)
- [Setting Up the ELIN Numbers to Route Emergency Calls and Enable PSAP Callbacks, page 4-9](#)
- [Creating Alternate Emergency Call Numbers, page 4-15](#)
- [Configuring the Calling Search Space for the Gateways Used to Connect to the PSAP, page 4-16](#)

Creating the Emergency Call Route Points

You must configure CTI route points in Cisco Unified CM for:

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



Note If you use 9 as the access code, see the [“Creating the Translation Patterns for 9.911”](#) section on page 4-12 to configure Cisco ER.

- The number that your standby Cisco ER server should listen to, such as 912.
- The number that incoming calls from the public safety answering point (PSAP) will use. Cisco ER 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 the [“Setting Up the ELIN Numbers to Route Emergency Calls and Enable PSAP Callbacks”](#) section on page 4-9 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 Cisco ER, you are required to enter the emergency call number. In this procedure, configure the same number you specify during installation.

[Table 4-1](#) describes the emergency route point settings.

Table 4-1 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. Cisco ER handles all calls to this number.	Route point for the Cisco ER 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. Cisco ER 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	Phones	E911	E911
Calling Search Space	E911CSS	E911CSS	E911CSS
Forward Busy	Destination: 912 CSS: E911CSS	Destination: One of: ¹ <ul style="list-style-type: none"> • Route pattern for default ERL. • Onsite security number. CSS: E911CSS	Destination: Onsite security number. ² CSS: E911CSS

Table 4-1 Emergency Call Route Points (continued)

Route Point Setting	Route Points		
	Primary Number (911)	Backup Number (912)	ELIN (913)
Forward No Answer	Destination: 912 CSS: E911CSS	Destination: One of: <ul style="list-style-type: none"> Route pattern for default ERL. Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS
Forward On Failure	Destination: 912 CSS: E911CSS	Destination: One of: <ul style="list-style-type: none"> Route pattern for default ERL. Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS
Forward No Coverage	Destination: 912 CSS: E911CSS	Destination: One of: <ul style="list-style-type: none"> Route pattern for default ERL. Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS
Forward Unregistered	Destination: 912 CSS: E911CSS	Destination: One of: <ul style="list-style-type: none"> Route pattern for default ERL. Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS

1. 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.
2. Configuring call-forwarding numbers for the ELIN route point ensures that PSAP callbacks go to onsite security if Cisco ER cannot handle the call.

To create the route points described in [Table 4-1](#), follow these steps:

Procedure

-
- Step 1** In Cisco Unified CM, select **Device > CTI Route Point**.
The Find and List CTI Route Points page appears.
 - Step 2** Click **Add New**.
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 4-1](#) 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 4-1](#).
 - Step 4** Click **Save** to add the new CTI route point.

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

Cisco Unified CM opens the Directory Number configuration page.

Step 5 Enter the configuration for the line you are creating using the information in [Table 4-1](#).

Step 6 Click **Save**.

Cisco Unified CM adds the line to the device. Repeat this procedure until all devices described in [Table 4-1](#) are configured.

For additional assistance, refer to the documentation and online help included with Cisco Unified CM.

Related Topics

- [Creating a Cisco Emergency Responder Partition E911, page 4-4](#)
- [Creating a Cisco Emergency Responder Calling Search Space, page 4-5](#)
- [Setting Up the ELIN Numbers to Route Emergency Calls and Enable PSAP Callbacks, page 4-9](#)
- [Creating Route Patterns for Inter-Cisco Emergency Responder-Group Communications, page 4-17](#)
- [Creating Alternate Emergency Call Numbers, page 4-15](#)
- [Creating a Cisco Emergency Responder Cisco Unified Communications Manager User, page 4-18](#)
- [Configuring Group Telephony Settings For the Cisco Emergency Responder Server, page 5-21](#)
- [Installing Cisco Emergency Responder 8.0 on a New System, page 2-3](#)

Creating the Required CTI Ports

Cisco ER 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 you configure is the number of simultaneous calls Cisco ER can make to these personnel. It does not relate to the number of emergency calls Cisco ER can handle or forward to the PSAP—there is no configurable limitation to the number of simultaneous emergency calls that Cisco ER can handle.

Before You Begin

Cisco ER 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.

To create the required CTI ports, follow these steps:

Procedure

Step 1 Select **Device>Phone**.

Cisco Unified CM opens the Find and List Phones page.

Step 2 Click **Add New**.

Cisco Unified CM opens the Add a New Phone page.

Step 3 Select **CTI Port** for **Phone Type** and click **Next**.

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 **Save**.

Cisco Unified CM creates the CTI port and asks if you want to configure line 1. Click **OK**. Cisco Unified CM opens the Directory Number Configuration page.

Step 6 Configure line 1 for the CTI port, entering this information:

- **Directory Number**—Enter an unused extension number for the port, such as 3001.
- **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 **Save**.

Cisco Unified CM 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.

Related Topics

- [Creating a Cisco Emergency Responder Partition E911, page 4-4](#)
- [Creating a Cisco Emergency Responder Calling Search Space, page 4-5](#)
- [Creating a Cisco Emergency Responder Cisco Unified Communications Manager User, page 4-18](#)
- [Identifying the Cisco Unified Communications Manager Clusters, page 5-25](#)
- [Creating ERLs, page 5-31](#)

Setting Up the ELIN Numbers to Route Emergency Calls and Enable 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.

Cisco Emergency Responder (Cisco ER) converts a caller's extension to an emergency location identification number (ELIN), and this number is used to route the call and to enable PSAP callbacks. Cisco ER 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.

Cisco ER will reuse 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 window, the first emergency caller's ELIN mapping is replaced by the third caller's extension. Thus, if the PSAP tries to call the first caller, the PSAP will reach the third caller. Keep this in mind as you determine the number of DIDs you will obtain for each ERL.

These topics describe how to set up the route patterns and translation patterns required to set up the ELIN numbers:

- [Creating the Route Patterns for ELINs, page 4-10](#)
- [Creating the Translation Patterns for ELINs, page 4-11](#)

See the “[Creating ERLs](#)” section on page 5-31 for information on how to configure the ERLs with these numbers.

Creating the Route Patterns for ELINs

Cisco ER 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 will connect to the PSAP. The gateway you choose depends on the emergency response location (ERL) to which you will assign the route pattern.

You must create one route pattern for every ELIN 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 the “[Creating ERLs](#)” section on page 5-31 for information about ERLs.

To create the route patterns for ELINs, follow these steps:

Procedure

-
- Step 1** Select **Call Routing > Route/Hunt > Route Pattern**.
- Cisco Unified CM opens the Find and List Route Patterns page.
- Step 2** Click **Add New**.
- Cisco 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.
- **Calling Party Transform Mask**—Enter the direct inward dial (DID) number you obtained to allow the PSAP in this locale to dial into your network. This is the ELIN number the ERL administrator enters for this route pattern when creating the ERL.
- **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 **Save**.

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



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 Cisco ER cluster identifier; *y* is a Cisco ER group identifier; *zz* is the PSAP identifier; *aaa* is the ERL identifier; *b* is the ELIN identifier (within the ERL).

Related Topics

- [Creating the Translation Patterns for ELINs, page 4-11](#)
- [Creating a Cisco Emergency Responder Partition E911, page 4-4](#)
- [Understanding the Cisco Unified CM Examples, page 4-1](#)
- [Understanding ERLs, page 5-28](#)
- [Creating ERLs, page 5-31](#)

Creating the 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. Cisco ER needs to intercept these calls so it can route the call to the correct emergency caller. The translation pattern is required so that the number is prefixed to the ELIN so that it becomes the route point you configured for PSAP callbacks, as explained in the “[Creating the Emergency Call Route Points](#)” section on page 4-5.

Before You Begin

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

To create the transition patterns for ELINs, follow these steps:

Procedure

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

Cisco Unified CM opens the Find and List Translation Patterns page.

Step 2 Click **Add New**.

Cisco 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**.
- **Use Calling Party's External Phone Number Mask**—Select this.
- **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 **Save**.

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

Related Topics

- [Creating the Route Patterns for ELINs, page 4-10](#)
- [Understanding the Cisco Unified CM Examples, page 4-1](#)
- [Understanding ERLs, page 5-28](#)
- [Creating ERLs, page 5-31](#)

Creating the 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 will eliminate the secondary dialtone timing.

You must create translation patterns so that when users dial the local system external access code of 9 plus 911, the calls will be directed to the single 911 pattern previously created in the [“Creating the Emergency Call Route Points”](#) section on page 4-5.

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 Cisco ER installation.

[Table 4-2](#) describes the translation patterns for systems where the external access code is 9.

Table 4-2 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

Table 4-2 Translation Patterns for External Access Code of 9

Translation Pattern	911	9.911
Provide outside dial tone	Check this box	Check this box
Called Party Transformations, Discard Digits (Outgoing Calls)	None	PreDot

To create the translation patterns described in [Table 4-2](#), follow these steps:

Procedure

-
- Step 1** Select **Call Routing > Translation Pattern**.
Cisco Unified CM opens the Find and List Translation Patterns page.
- Step 2** Click **Add New**.
Cisco 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 this box is checked.
 - **Called Party Transformations, Discard Digits**—Select *<none>*.
- Step 4** Click **Save**.
Cisco Unified CM saves the translation pattern.
- Step 5** Repeat [Step 2](#) to [Step 4](#) 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 4-3](#) describes the route points for systems where the external access code is 9.



Note

These route points are similar to the route points that you created in the [“Creating the Emergency Call Route Points”](#) section on page 4-5. In this case, you enter E911 for the partition instead of RP911.

Table 4-3 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. Cisco ER handles all calls to this number.	Route point for the Cisco ER 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. Cisco ER 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: One of: ¹ <ul style="list-style-type: none"> Route pattern for default ERL. Onsite security number. CSS: E911CSS	Destination: Onsite security number. ² CSS: E911CSS
Forward No Answer	Destination: 912 CSS: E911CSS	Destination: One of: <ul style="list-style-type: none"> Route pattern for default ERL. Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS
Forward On Failure	Destination: 912 CSS: E911CSS	Destination: One of: <ul style="list-style-type: none"> Route pattern for default ERL. Onsite security number. CSS: E911CSS	Destination: Onsite security number. CSS: E911CSS

1. 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.

2. Configuring call-forwarding numbers for the ELIN route point ensures that PSAP callbacks go to onsite security if Cisco ER cannot handle the call.

To create the route points described in [Table 4-3](#), follow these steps:

Procedure

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

The Find and List CTI Route Points page appears.

- Step 2** Click **Add New**.
- 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 4-3](#) 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 4-3](#).
- Step 4** Click **Insert** to add the new CTI route point.
- Cisco Unified CM adds the route point and asks if you want to configure line 1. Click **OK** to configure line 1.
- Cisco Unified CM opens the Directory Number configuration page.
- Step 5** Enter the configuration for the line you are creating using the information in [Table 4-3](#).
- Step 6** Click **Save**.
- Cisco Unified CM adds the line to the device. Repeat this procedure until all devices described in [Table 4-3](#) are configured.
- For additional assistance, refer to the documentation and online help included with Cisco Unified CM.
-

Related Topics

- [Creating the Route Patterns for ELINs, page 4-10](#)
- [Understanding the Cisco Unified CM Examples, page 4-1](#)
- [Understanding ERLs, page 5-28](#)

Creating 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.

To set up 9911 as an alternate emergency call number, follow these steps:

Procedure

- Step 1** Select **Call Routing > Translation Pattern**.
- Cisco Unified CM opens the Find and List Translation Patterns page.
- Step 2** Click **Add New**.
- Cisco 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.
- **Use Calling Party's External Phone Number Mask**—Select this.
- **Called Party Transformations, Discard Digits (Outgoing Calls)**—Select **PreDot**.

Step 4 Click **Save**.

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

Related Topics

- [Understanding the Cisco Unified CM Examples, page 4-1](#)
- [Creating a Phone Partition, page 4-2](#)
- [Creating a Phone Calling Search Space, page 4-2](#)

Configuring the Calling Search Space for the Gateways Used to Connect to the PSAP

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 on setting up the gateway, and the Cisco Unified CM documentation for configuring the gateway.

To set up the calling search space for the gateway, follow these steps:

Procedure

Step 1 Select **Device>Gateway**.

Cisco 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**.

Cisco Unified CM lists the gateways that match your criteria.

Step 3 Click the gateway you want to configure.

Cisco Unified CM opens the Gateway Configuration page.

Step 4 Select **E911CSS** for **Calling Search Space**.

Step 5 Click **Save**.

Cisco Unified CM saves your changes.

Related Topics

- [Creating a Cisco Emergency Responder Calling Search Space, page 4-5](#)
- [Obtain CAMA or PRI Trunks to the PSTN, page 1-18](#)

- [Deploying Cisco Emergency Responder, page 1-21](#)
- [How Cisco Emergency Responder Fits Into Your Network, page 1-7](#)

Creating Route Patterns for Inter-Cisco Emergency Responder-Group Communications

If you have more than one Cisco ER group in a Cisco ER cluster, you must configure route patterns to enable each Cisco ER group to route emergency calls to another Cisco ER group if a caller's phone homes to a Cisco Unified CM cluster outside the current location of the phone. See the “[Understanding Cisco Emergency Responder Clusters and Groups](#)” section on page 1-12 for a detailed explanation of how Cisco ER groups communicate within a Cisco ER cluster.

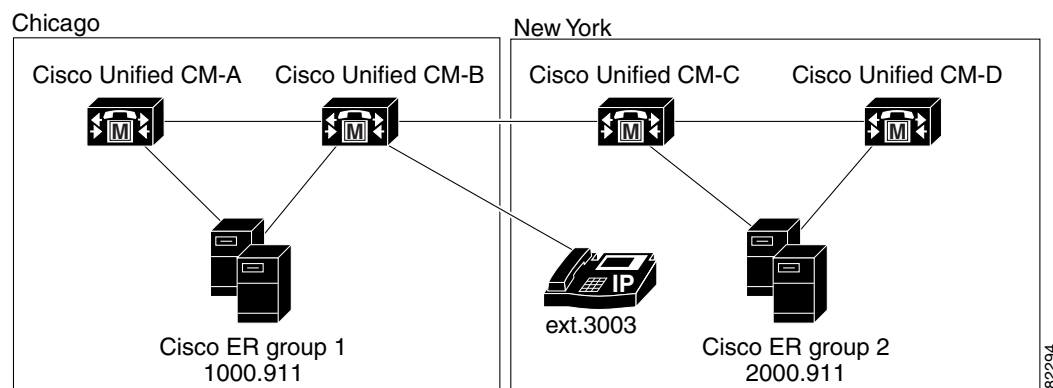
This procedure explains how to create the route pattern for one Cisco ER group. You must create this pattern in the Cisco Unified CM clusters that are *not* supported by the Cisco ER group. Consider the network setup in [Figure 4-1](#).

For inter-group communications to work:

- You must define inter-cluster trunks in each Cisco Unified CM cluster to enable communications between the Cisco Unified CM clusters. See the Cisco Unified CM documentation for information on creating these types of gateways.
- You must define the route pattern 1000.911 in Cisco Unified CM clusters CCM-C and CCM-D.
- You must define the route pattern 2000.911 in Cisco Unified CM clusters CCM-A and CCM-B.
- In Cisco ER group 1, define 1000.911 as the Inter Cisco ER Group Route Pattern.
- In Cisco ER group 2, define 2000.911 as the Inter Cisco ER Group Route Pattern.

These definitions allow a call in an ERL managed by Cisco ER group 2 to be routed to Cisco ER group 2 even though the phone homes to Cisco Unified CM cluster CCM-B, which is serviced by Cisco ER group 1.

Figure 4-1 Understanding Inter Cisco Emergency Responder Group Route Patterns



Before You Begin

The dial plans must be unique between all Cisco Unified CM clusters supported by a Cisco ER cluster. For example, in the network shown in [Figure 4-1](#), the extension 3003 can only be defined in Cisco Unified CM cluster CCM-B.

To create the route pattern for one Cisco ER group, follow these steps:

Procedure

-
- Step 1** Select **Call Routing>Route/Hunt>Route Pattern**.
Cisco Unified CM opens the Find and List Route Patterns page.
- Step 2** Click **Add New**.
Cisco 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, 1000.911 or 2000.911. The pattern can only consist of numbers and dots.
 - **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 Cisco Unified CM cluster supported by the Cisco ER group whose inter Cisco ER 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**.
Cisco Unified CM saves the route pattern. To add additional route patterns, return to [Step 2](#).
- Step 5** Ensure you define the route pattern in all other Cisco Unified CM clusters serviced by Cisco ER groups other than the Cisco ER group whose inter Cisco ER group route pattern you are defining.
-



Note

For emergency calls to work across CER ServerGroups in a CER cluster with CUCM 8.0, the "Calling Party Selection" option should be set to "Originator" in the "Device> Trunk Configuration" page in CUCM Administration website.

Related Topics


- [Creating a Cisco Emergency Responder Partition E911, page 4-4](#)
- [Configuring Group Telephony Settings For the Cisco Emergency Responder Server, page 5-21](#)
- [Installing Cisco Emergency Responder 8.0 on a New System, page 2-3](#)

Creating a Cisco Emergency Responder Cisco Unified Communications Manager User

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

To add Cisco ER as a Cisco Unified CM user, follow these steps:

Procedure

-
- Step 1** In Cisco Unified CM, select **User Management > Application User**. Click the **Add New** button. Cisco Unified CM displays the Application User Configuration page.
- Step 2** Complete the following required fields:
- **User ID**—Use a descriptive name such as “CER_User.”
 - **Password**—Enter a password for this user.
 - **Confirm Password**—Re-enter the password for this user.
- Step 3** In the **Device Information** section, select the desired route point(s) and CTI port(s) and then click the down arrow to add the selected devices to the user’s 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.
-
- a. All CTI ports created for Cisco Emergency Responder’s use. For more information, see the [“Creating the Required CTI Ports”](#) section on page 4-8.
 - b. The primary emergency call number, for example, 911. Also, select this number as the user’s primary extension.
 - c. The backup emergency call number, for example, 912.
 - d. The route point used for ELINs, for example, 913XXXXXXXXXX.
- Step 5** Click **Save**.
- Step 6** In the Cisco 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 pop-up window appears.
- Step 10** Enter the User ID created in [Step 2](#) as the search criterion and click **Find**. The list of Applications users appears.
- Step 11** Click the checkbox next to the user ID and click **Add Selected**. Cisco Unified CM adds the selected user to the **Standard CTI Allow Calling Number Modification** user group.
- Step 12** Click **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 on the **Standard CTI Enabled** group.

Step 15 Repeat steps 9 through 11 to add the user to the Standard CTI Enabled group.

Related Topics

- [Creating the Emergency Call Route Points, page 4-5](#)
- [Creating the Required CTI Ports, page 4-8](#)

Configuring JTAPI Security

Cisco ER 7.0 allows you to enable secure JTAPI communications between Cisco ER cluster servers and the Cisco Unified Communications Manager CTI Manager.

To configure secure JTAPI communications, follow these steps:

Procedure

- Step 1** Verify that the Cisco Unified Communications Manager cluster is in secure mode by doing the following:
- In Cisco Unified Communications Manager, go to **System > Enterprise Parameters**.
 - Under Security Parameters, verify that Cluster Mode Security is set to **1**.



Note The Cluster Mode Security value is configured using the Cisco Unified Communications Manager CTL client. For more information on setting this value, see the *Cisco Unified Communications Manager Security Guide*.

- Step 2** Add the Cisco ER application user to the Standard CTI Secure Connection group.
- Step 3** Create two CAPF profiles for the Cisco ER application users—one for the Publisher and one for the Subscriber—by doing the following:
- In Cisco Unified Communications Manager, go to **User Management > Application User CAPF Profile**.
 - Add the new CAPF profile, making sure that the Certificate Operation Required field is in the Install/Upgrade mode.
For detailed information on adding a CAPF profile, see the *Cisco Unified Communications Manager Security Guide*.
- Step 4** If you are using Cisco Unified CM 6.0 or 6.1, follow these steps:
- Choose **User Management > Application User**. The Find and List Application User CAPF Profiles page appears.
 - Perform a search for the application user and select the application user from the results list. The Application User Configuration page appears.
 - Click on the **Edit Credential** button. The Credential Configuration page appears.
 - Ensure that the “User Must Change at Next Login” box under Credential Information is not checked. If it is checked, uncheck it.

- Step 5** You must also enable JTAPI security in Cisco ER 2.0. See the [“Identifying the Cisco Unified Communications Manager Clusters”](#) section on page 5-25 for details.
-

Related Topics

- [Creating a Cisco Emergency Responder Cisco Unified Communications Manager User](#), page 4-18
- [Identifying the Cisco Unified Communications Manager Clusters](#), page 5-25

