Emergency Call Handler

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Emergency Call Handler Overview

Emergency Call Handler helps you to manage emergency calls in your telephony network while following local ordinances and regulations.

When an emergency call is made the following is required:

- The emergency call must be routed to the local Public-Safety Answering Point (PSAP) based on the location of the caller.
- The caller's location information must be displayed at the emergency operator terminal. The location information can be obtained from an Automatic Location Information (ALI) database.

The caller's location is determined by the Emergency Location Identification Number (ELIN). An ELIN is a Direct Inward Dial (DID) number that the PSAP can dial to reconnect to the emergency caller if the emergency call is cut off or if the PSAP needs to talk to the caller again. The emergency call is routed to the PSAP based on the location information that is associated with this number.

For multiline phone systems, such as an office system, the ELIN can be associated with more than one telephone by grouping the phones in an ELIN group. An ELIN group in Emergency Call Handler identifies a location. The ELINs under this ELIN group must be mapped to the location in the ALI database.

Each location should have as many ELINs created as needed to support simultaneous emergency calls. For example, to support five simultaneous calls, five ELINs would be needed in an ELIN group.

Note Emergency Call Handler supports a maximum of 100 ELINs per cluster.

Make sure that the mapping of ELIN to the original called party is active until the ELIN is used for the next emergency call from the same location. If the ELIN mapping is not used, the DN will be active for a maximum period of 3 hours only.

The following types of phone are supported to use ELIN groups:

- SIP and SCCP IP phones
- CTI ports
- MGCP and SCCP analog phones
- H.323 phones

Emergency Call Handler Prerequisites

Example

Before deploying Emergency Call Handler in your network, we recommend that you test the ALI submission process. With your service provider's help, test that the PSAP can successfully call back into your network using the ALI data.

Reserve the ELIN number from your local PSAP. Ordinances and regulations can differ across different locations and across different companies, so research your security and legal needs before deploying this feature.

Emergency Call Handler Task Flow

Before you begin

- Review Emergency Call Handler Prerequisites, on page 2

Procedure

	Command or Action	Purpose
Step 1	Enable Emergency Call Handler, on page 3	Enable the Emergency Call Handler feature on Cisco Unified Communications Manager. Emergency Call Handler provides essential emergency call features and supports a limited number of locations with phone location assignment by static configuration. If you require advanced emergency call features, such as a greater amount of specific locations or dynamic location assignment, consider Cisco Emergency Responder.
Step 2	Configure Emergency Location Groups, on page 4	Configure an Emergency Location (ELIN) Group for a particular site or location.
Step 3	Add a Device Pool to an Emergency Location Group, on page 5	Configure device pools to use an Emergency Location (ELIN) Group.

	Command or Action	Purpose
Step 4	(Optional) Add Device to an Emergency Location Group, on page 5	Configure a particular device to use a particular Emergency Location (ELIN) Group. If you want to use the device pool ELIN Group that is associated for this device, you can ignore this section. **Note** Configurations that are made at the device level will overwrite any configurations that were made at the device pool level.
Step 5	Enable Route Patterns and Translation Patterns, on page 6	Enable the Emergency Location (ELIN) service for a route pattern or a translation pattern. **Caution** No Calling Party Transformation masks are set at the Gateway or Trunk, because these may transform the ELIN that is set by Emergency Call Handler. **Note** It is mandatory that you enable either route patterns or translation patterns, but it is possible to enable both.
Step 6	(Optional) Use the following procedures to perform bulk administration tasks on ELIN group information and phones: • Import Emergency Location Group Information, on page 7 • Export Emergency Location Group Information, on page 7 • Update Phones with a new Emergency Location Group, on page 8	This section provides information about the Bulk Administration tasks you can use to update ELIN group information and to add phones to new ELIN groups. For Bulk Administration, see the *Cisco Unified Communications Manager Bulk Administration Guide, Release 11.0(1)*.

Enable Emergency Call Handler

Enable the Emergency Call Handler feature on Cisco Unified Communications Manager. Emergency Call Handler provides essential emergency call features and supports a limited number of locations with phone location assignment by static configuration. If you require advanced emergency call features, such as a greater amount of specific locations or dynamic location assignment, consider Cisco Emergency Responder.

Note Do not enable this feature if you are already using an external emergency calling solution such as Cisco Emergency Responder.

If you decide to enable this feature, make sure you disable the external one.

Procedure

Step 1 From Cisco Unified CM Administration, choose **Call Routing** > **Emergency Call Handler** > **Emergency Location Configuration**.

Step 2 From the Emergency Location Configuration window:

- To enable the Emergency Call Handler feature, check the **Enable Emergency Location (ELIN) Support** check box. The setting default is Disabled. When enabled, the settings related to this feature appear in the Related Settings pane. You must configure these settings for the feature to work. Refer to the tasks below for further details on how to configure these related settings.
- To disable the Emergency Call Handler feature, uncheck the **Enable Emergency Location (ELIN) Support** check box.

  Note
  If you disable this feature, all related settings that are configured will be removed. See the Related Settings Pane for all configured settings.

  Note
  If you want to disable the feature and you have more than 500 devices associated with ELIN Groups, then you must manually delete the associations until there are fewer than 500 associations before you can disable the feature.

Step 3 Click **Save**.

Configure Emergency Location Groups

Configure an Emergency Location (ELIN) Group for a particular site or location.

Before you begin

Enable Emergency Call Handler, on page 3

Procedure

Step 1 From Cisco Unified CM Administration, choose **Call Routing** > **Emergency Call Handler** > **Emergency Location (ELIN) Group**.

Step 2 In the **Emergency Location (ELIN) Group Configuration** window, enter a name for the group in the **Name** field.

Step 3 In the **Number** field, enter the pool of DID numbers that are registered in the Public Safety Answering Point (PSAP).

Step 4 Click **Save**.

Add a Device Pool to an Emergency Location Group

Configure device pools to use an Emergency Location (ELIN) Group.

Before you begin

Configure Emergency Location Groups, on page 4

Procedure

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

Step 2 In the **Find and List Device Pools** window, if you are adding an existing device pool, click **Find** and choose the device pool from the list. If you are adding a new device pool click **Add New**.

Step 3 In the **Device Pool Configuration** window, choose the ELIN group to which you want to add the device pool from the **Emergency Location (ELIN) Group** drop-down list. If you are adding a new device pool, fill out any other required fields.

Step 4 Click **Save**.

Add Device to an Emergency Location Group

Configure a particular device to use a particular Emergency Location (ELIN) Group. If you want to use the device pool ELIN Group that is associated for this device, you can ignore this section.

Note Configurations that are made at the device level will overwrite any configurations that were made at the device pool level.

Note The devices that you add to the ELIN Group, should be added to the ELIN Group that represents the particular location at which those devices are located.

Before you begin

Add a Device Pool to an Emergency Location Group, on page 5

Procedure

Step 1 From Cisco Unified CM Administration, choose **Device** > **Phone**.

Note
If you are using a type of phone that is not an IP phone, go to the relevant configuration page for that type of phone.

Step 2 In the **Find and List Phones** window, if you are adding an existing device, click **Find** and choose the device you want to configure from the list. If you are adding a new device, click **Add New**.

Step 3 If you are adding a new phone, choose the type of phone you want to add from the **Phone Type** drop-down list and click **Next**.

Step 4 In the **Phone Configuration** window, choose the ELIN group to which you want to add the device from the **Emergency Location (ELIN) Group** drop-down list. If you are adding a new device, fill out any other required fields.

Step 5 Click **Save**.

Enable Route Patterns and Translation Patterns

Enable the Emergency Location (ELIN) service for a route pattern or a translation pattern.

Note It is mandatory that you enable either route patterns or translation patterns, but it is possible to enable both.

Before you begin

Add Device to an Emergency Location Group, on page 5

Procedure

Step 1 From Cisco Unified CM Administration, choose one of the following:

- To enable a route pattern, choose **Call Routing** > **Route/Hunt** > **Route Pattern**.
- To enable a translation pattern, choose **Call Routing** > **Translation Pattern**.

Step 2 In the **Find and List Route Patterns** or **Find and List Translation Patterns** window, click **Find** and choose a route pattern or translation pattern from the list.

Step 3 In the **Route Pattern Configuration** or **Translation Pattern** Configuration window, check the **Is an Emergency Services Number** check box.

Note
Check this check box only if you are using Emergency Call Handler and not another external emergency calling solution such as Cisco Emergency Responder.

Step 4 Click **Save**.

Bulk Administration of Emergency Location Groups and Phones

- Bulk Administration of Emergency Location Groups and Phones Task Flow, on page 7

Bulk Administration of Emergency Location Groups and Phones Task Flow

This section provides information about the Bulk Administration tasks you can use to update ELIN group information and to add phones to new ELIN groups. For more information about Bulk Administration, see the *Cisco Unified Communications Manager Bulk Administration Guide, Release 11.0(1)*.

Note Before you perform these procedures, make sure that you have enable the Emergency Call Handler feature. See Enable Emergency Call Handler, on page 3.

Procedure

	Command or Action	Purpose
Step 1	Import Emergency Location Group Information, on page 7	Import Emergency Location (ELIN) Group information using the Bulk Administration Tool.
Step 2	Export Emergency Location Group Information, on page 7	Export Emergency Location (ELIN) Group information using the Bulk Administration Tool.
Step 3	Update Phones with a new Emergency Location Group, on page 8	Find and list multiple phones and configure them with a new Emergency Location (ELIN) Group.

Import Emergency Location Group Information

Import Emergency Location (ELIN) Group information using the Bulk Administration Tool.

Procedure

Step 1 From Cisco Unified CM Administration, choose **Bulk Administration** > **Import/Export** > **Import**.

Step 2 From the **File Name** drop-down list, choose the name of the .tar file you want to import, and click **Next**.

Step 3 The **Import Configuration** section lists all the components of the .tar file. Check the ELIN Group-related check boxes for the options that you want to import.

Step 4 Choose to run the job immediately or later by clicking the corresponding radio button.

Step 5 To create a job for importing the selected data, click **Submit**. A message in the Status section notifies you know that the job was submitted successfully.

Step 6 Use the Job Scheduler option in the Bulk Administration main menu to schedule or activate this job.

Export Emergency Location Group Information

Export Emergency Location (ELIN) Group information using the Bulk Administration Tool.

Before you begin

Import Emergency Location Group Information, on page 7

Procedure

Step 1 From Cisco Unified CM Administration, choose **Bulk Administration** > **Import/Export** > **Export**.

Step 2 In the **Export Data** window, in the **Job Information** pane, enter the .tar file name, without the extension, in the **Tar File Name** field. BPS uses this filename to export the configuration details.

Note
All files that are exported at the same time get bundled together (.tar) and can be downloaded from the server.

Step 3 To export ELIN Group information, check the **Elin Group** check box on the **Select items to Export** pane.

Step 4 (Optional) Perform these steps:

- To export device pools with ELIN Groups configured, check the **Device Pools** check box.
- To export phones with ELIN Groups configured, check the **Phone** check box.

Step 5 In the **Job Descripton** field, enter the description that you want to override for the job. Export Configuration is the default description.

Step 6 You can choose to run the job immediately or later by clicking the corresponding radio button.

Step 7 To create a job for exporting the selected data, click **Submit**. A message in the **Status** pane notifies you that the job was submitted successfully.

Step 8 Use the Job Scheduler option in the Bulk Administration main menu to schedule or activate this job.

Update Phones with a new Emergency Location Group

Find and list multiple phones and configure them with a new Emergency Location (ELIN) Group.

Before you begin

Export Emergency Location Group Information, on page 7

Procedure

Step 1 From Cisco Unified CM Administration, choose **Bulk Administration** > **Phones** > **Update Phone** > **Query**.

Step 2 In the **Find and List Phones To Update** window, set the parameters for your search and click **Find**.

Note
To update all phones, click **Find** and do not specify a query.

Step 3 The **Find and List Phones To Update** window displays the details of the phones that you chose. Click **Next**.

Step 4 In the **Update Phones** window, check the **Emergency Location (ELIN) Group** check box, and choose a new ELIN Group from the drop-down list.

Step 5 Click **Submit**.

Interactions

Feature	Interaction
Do Not Disturb Call Reject	Calls made by PSAP CallBack will overwrite a Do Not Disturb (DND) configuration of a destination device. If DND Call Reject is enabled, when the emergency number is dialed using the translation pattern, an ELIN will be associated for this outbound emergency call. If the call is disconnected and the ELIN is called back using PSAP CallBack, the call is routed to the phone irrespective of the phone's DND settings.
Call Forward All	Calls made by PSAP CallBack will overwrite Call Forward All (CFA) settings of the destination device. If a phone has CFA enabled and if the emergency number using the translation pattern is dialed, an ELIN will be associated for this outbound emergency call. If the call is disconnected and the ELIN is called back using PSAP CallBack, the call is routed to the phone irrespective of the phone's CFA settings.
Single Number Reach	PSAP CallBack will ignore the Single Number Reach (SNR) configuration. When a phone has SNR enabled with the Remote Destination pointing to a mobile number. If the emergency number is dialed using the translation pattern, an ELIN will be associated for this outbound emergency call. If the call is disconnected, and the ELIN number is called back using PSAP CallBack, the call is routed to the phone and not to the remote destination.

Feature	Interaction
Extension Mobility	PSAP CallBack call will consider Extension Mobility (EM) status. If you log in with EM profile credentials and dial the emergency number using the translation pattern, an ELIN will be associated for this outbound emergency call. If the call is disconnected and the ELIN where the user is still logged in is called back using PSAP CallBack, the call is routed to the device which initiated the call. **Note** This is the device on which the user is still logged in.
	PSAP CallBack will fail if a user logs out of EM before a PSAP CallBack is performed. When a user logs in with EM profile credentials, and the emergency number is dialed using the translation pattern, an ELIN will be associated for this outbound emergency call. If the call is disconnected and is called back using PSAP CallBack, if the user has since logged out, the call will not route to the device that initiated the call and will fail.
	PSAP CallBack with a user logged in on a different device. When a user logs in with EM profile credentials at Phone A and dials the emergency number using the translation pattern, an ELIN will be associated for this outbound emergency call. If the call is disconnected, the user should log out from Phone A. If the user then logs in to another phone, Phone B, with the same profile, and the ELIN is called back using PSAP CallBack, the call is then be routed to Phone B with normal priority, meaning CFA settings will be ignored and DND settings will not be ignored.
	PSAP CallBack call with multiple logins. When a user logs in with EM profile credentials at Phone A and dials the emergency number using the translation pattern, an ELIN number will be associated for this outbound emergency call. If the call is disconnected and the user logs in to another phone, Phone B, with the same profile while the user is still logged in on Phone A, and the ELIN is called back using PSAP CallBack, then the call is routed to Phone A only, the device on which the call originated.
Device Mobility	A roaming device will use the Roaming Device Pool's ELIN Group for an outbound emergency call. Move a device with Device Mobility enabled from its home location to the Roaming location, a change in IP subnet, so that it gets associated with the Roaming device pool. If the emergency number is dialed using the translation pattern, an ELIN is associated for this outbound emergency call. The ELIN belongs to the ELIN Group that is associated with the Roaming Device Pool.

Feature	Interaction
Shared Lines	PSAP CallBack rings only on the device which made the emergency call even if the line is shared by different devices. Phone A and Phone B share a Directory Number (DN). If the emergency number is dialed using the translation pattern, an ELIN is associated for this outbound emergency call. If the call is disconnected, and the ELIN is called back using PSAP CallBack, the call is routed to Phone A only, the device from which the call originated.

Emergency Call Handler Troubleshooting

About Emergency Call Handler Troubleshooting Scenarios

This section provides information about some Emergency Call Handler troubleshooting scenarios in the following areas:

- Configuration Scenarios
- Outgoing Calls Scenarios
- Incoming Calls Scenarios

Configuration Scenarios

Emergency Calls Get Busy Signals and Are Not Routed

Problem:

Emergency calls get busy signals and are not routed.

Solution:

If a user who is dialing the emergency call is running a reorder tone, perform the following checks:

- Check whether the translation or route pattern for the emergency call has been used. This may require checking for the device or phone on CSS.
- Check whether the **Is an Emergency Services Number** check box has been checked for the translation or route pattern of the emergency call, and that it is correctly routing to the gateway.

If the user who is dialing the emergency call is not reaching the correct gateway or Public Service Answering Point (PSAP), check that the settings or device pool settings for the phone or device are configured with the correct Emergency Location (ELIN) Group.

Emergency Location Numbers Are Dialed from Outside Running a Reorder Tone

Problem:

Emergency Location (ELIN) numbers are dialed from outside while running a reorder tone.

Cause:

In this case the ELINs have been set as DID which is used to identify a caller's location. This should not be used on any phone or for any other purpose.

Solution:

Check the ELIN configuration information, and unset the ELINs that have been set as DID.

Outgoing Calls Scenarios

Outgoing Emergency Call Does Not Contain Calling Party as Emergency Location Number

Problem:

An outgoing emergency call does not contain the calling party as an Emergency Location (ELIN) number.

Cause:

The translation pattern or route pattern for this ELIN was not configured correctly.

Solution:

Check that the translation pattern or route pattern settings are correctly configured for this ELIN, and make sure that the **Is an Emergency Services number** check box is checked on the relevant translation pattern or route pattern configuration page.

Outgoing Emergency Call Contains Modified Emergency Location Number

Problem:

An outgoing emergency call contains a modified Emergency Location (ELIN) number.

Cause:

The outgoing trunk or route list contains extra transformations that are not required for ELINs.

Solution:

Check the transformations that were applied for the call, and make sure that only the required transformations for ELINs are present on the outgoing trunk or route list.

Incoming Calls Scenarios

Incoming PSAP Callback Call Fails

Problem:

An incoming PSAP Callback call fails.

Cause:

The device that made the original emergency call was not registered correctly.

Solution:

Check whether the device that made the original emergency call is still registered and whether any Extension Mobility is involved.

Incoming PSAP CallBack Call is Not Routed as Expected

Problem:

An incoming PSAP CallBack call does not get routed as expected.

Cause:

The Emergency Location (ELIN) number does not match the number of the original dialed party.

Solution:

For an ELIN to be successfully reverse mapped to the original dialed party, these two numbers must match. If there are already transformations at the incoming Gateway or Trunk and significant digits configured, make sure that the final transformed called party matches the ELIN number.