

Configure Tertiary Redundancy for Cisco Emergency Responder with Different Calling Numbers for Each Site

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Introduction

This document describes how to configure tertiary redundancy for Cisco Emergency Responder (CER) where both the Primary CER server and also the Secondary CER server are no longer available. It allows for each site within an organisation that uses Cisco Unified Communications Manager (CUCM) to continue to use a *different* Calling Number—also known as an Emergency Location Identification Number (ELIN)—rather than all calls to the Public Safety Access Point (PSAP) routed with the same ELIN.

Prerequisites

Requirements

Cisco recommends you have a knowledge of:

- Cisco Emergency Responder (CER)
- Cisco Unified Communications Manager (CUCM)

A pre-requisite to Tertiary Redundancy is to first configure both a Primary and Secondary CER server as documented in the [Cisco Emergency Responder Administration Guide](#) for your version of CER.

Components Used

The information in this document is based on the following software versions (but is also applicable to other versions):

- Cisco Unified Communications Manager (CUCM) version 12.5.1.19000-146 (12.5(1)SU1)
- Cisco Emergency Responder (CER) version 12.5.1.19000-38 (12.5(1)SU1)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network

is live, ensure that you understand the potential impact of any command.

Configure

The configuration documented in the various [Cisco Emergency Responder Administration Guides](#) allows for secondary redundancy of CER via a CER cluster—with a second CER server. If this second CER server is *also* down, or CUCM connectivity with *both* CER servers is not working, then CUCM can still be configured to re-route the calls to the PSAP (911)—through exactly the same SIP Trunk—with Calling Numbers that are based on the callers physical location.

Note: This configuration example assumes that each physical location also has its own Device Pool already configured in CUCM. It also assumes that CER has already first been configured to use a Route Pattern of 10.911 with the ELIN provided by CER.

If both CER's are down then the following can be used to route the call to the PSAP with a 11.911 Route Pattern and Calling Numbers that are specific to each location. i.e. If the CER 911 CTI route point (RP911) fails, it must be configured to route calls to the CER 912 CTI route point (RP912). If this has also failed, then it is configured to route to 11911.

The CER 912 CTI route point (RP912) has its Directory Number configured with the following **Call Forward and Call Pickup Settings**:

Call Forward and Call Pickup Settings		Voice Mail	Destination	Calling Search Space
Calling Search Space Activation Policy				Use System Default
Forward All	<input type="checkbox"/> or			< None >
Secondary Calling Search Space for Forward All				Cer-911-CSS
Forward Busy Internal	<input type="checkbox"/> or	11911		Cer-911-CSS
Forward Busy External	<input type="checkbox"/> or	11911		Cer-911-CSS
Forward No Answer Internal	<input type="checkbox"/> or	11911		Cer-911-CSS
Forward No Answer External	<input type="checkbox"/> or	11911		Cer-911-CSS
Forward No Coverage Internal	<input type="checkbox"/> or	11911		Cer-911-CSS
Forward No Coverage External	<input type="checkbox"/> or	12911		Cer-911-CSS
Forward on CTI Failure	<input type="checkbox"/> or	11911		Cer-911-CSS
Forward Unregistered Internal	<input type="checkbox"/> or	11911		Cer-911-CSS
Forward Unregistered External	<input type="checkbox"/> or	11911		Cer-911-CSS
No Answer Ring Duration (seconds)				
Call Pickup Group				< None >

Create a **Local Route Group** for each location, e.g.

Local Route Group Names	
Save	
Status: Ready	
Name *	Description
Standard Local Route Group	Standard Local Route Group
Springfield CER Down RG	Springfield CER Failover RG
Chattanooga CER Down RG	Chattanooga CER Down RG
ColoSprings CER Down RG	ColoSprings CER Down RG
Oakland CER Down RG	Oakland CER Failover RG
Jefferson CER Down RG	Jefferson CER Down RG
Mission CER Down RG	Mission CER Down RG
Add Row	

Create a CER-Down-RL Route List and add the Local Route Groups previously configured:

Route List Configuration

Save Delete Copy Reset Apply Config Add New

Status

Status: Ready

Route List Information

Registration: Registered with Cisco Unified Communications Manager [REDACTED]
 IPv4 Address: [REDACTED]
 Device is trusted
 Name*: CER-Down-RL
 Description: Used for CER down scenarios
 Cisco Unified Communications Manager Group*: Sub-[REDACTED]
 Enable this Route List (change effective on Save; no reset required)
 Run On All Active Unified CM Nodes

Route List Member Information

Selected Groups**

- Springfield CER Down RG(Local Route Group)
- Oakland CER Down RG(Local Route Group)
- Chattanooga CER Down RG(Local Route Group)
- ColoSprings CER Down RG(Local Route Group)
- Jefferson CER Down RG(Local Route Group)

Removed Groups***

Add Route Group

Route List Details

- [Springfield CER Down RG\(Local Route Group\)](#)
- [Oakland CER Down RG\(Local Route Group\)](#)
- [Chattanooga CER Down RG\(Local Route Group\)](#)
- [ColoSprings CER Down RG\(Local Route Group\)](#)
- [Jefferson CER Down RG\(Local Route Group\)](#)
- [Mission CER Down RG\(Local Route Group\)](#)

Click the link for each Local Route Group under **Route List Details** — one by one from within the above Route List — and add a different **Calling Party Transform Mask** for each Local Route Group:

Route List Detail Configuration

 Save

Status

 Status: Ready

Route List Member Information

Route Group Springfield CER Down RG

Calling Party Transformations

Use Calling Party's External Phone Number Mask*

Calling Party Transform Mask

Prefix Digits (Outgoing Calls)

Calling Party Number Type*

Calling Party Numbering Plan*

Called Party Transformations

Discard Digits

Called Party Transform Mask

Prefix Digits (Outgoing Calls)

Called Party Number Type*

Called Party Numbering Plan*

Route List Detail Configuration

 Save

- Status

 Status: Ready

- Route List Member Information

Route Group Oakland CER Down RG

Calling Party Transformations

Use Calling Party's External Phone Number Mask*

Calling Party Transform Mask

Prefix Digits (Outgoing Calls)

Calling Party Number Type*

Calling Party Numbering Plan*

Called Party Transformations

Discard Digits

Called Party Transform Mask

Prefix Digits (Outgoing Calls)

Called Party Number Type*

Called Party Numbering Plan*

...and continue for all of the remaining Route Groups in the above CER-Down-RL Route List.

For the following Route Patterns, **10.911** sends calls directly to the usual SIP "head end" Route List (in this case **PSTN-RL**) when the CER servers are up. **11.911** sends calls to the **CER-Down-RL** (for the tertiary redundancy):

<input type="checkbox"/>	10.911	Outbound 911 calls	CER-911-PT	PSTN-RL
<input type="checkbox"/>	11.911	Outbound 911 CER Down	CER-911-PT	CER-Down-RL

Next, navigate to each Device Pool and set only one Local Route Group for each site. These point to the usual SIP "head end" route group (in this case **CUBE ITSP PSTN Route Group**). There is no need to configure more route groups as it uses this group with the mask applied inside the route list/route group mask settings:

Device Pool Configuration

 Save  Delete  Copy  Reset  Apply Config  Add New

Cisco Unified Communications Manager Group*	Sub-52	▼
Calling Search Space for Auto-registration	< None >	▼
Adjunct CSS	< None >	▼
Reverted Call Focus Priority	Default	▼
Intercompany Media Services Enrolled Group	< None >	▼
MRA Service Domain	< None >	▼

Roaming Sensitive Settings

Date/Time Group*	CST-DTG	▼
Region*	G711-Region	▼
Media Resource Group List	SpringfieldCC-MRGL	▼
Location	SpringfieldCC-LOC	▼
Network Locale	< None >	▼
SRST Reference*	Disable	▼
Connection Monitor Duration***		
Single Button Barge*	Default	▼
Join Across Lines*	Default	▼
Physical Location	< None >	▼
Device Mobility Group	< None >	▼
Wireless LAN Profile Group	< None >	▼ View Details

Local Route Group Settings

Standard Local Route Group	< None >	▼
Springfield CER Down RG	CUBE ITSP PSTN Route Group	▼
Chattanooga CER Down RG	< None >	▼
ColoSprings CER Down RG	< None >	▼
Oakland CER Down RG	< None >	▼
Jefferson CER Down RG	< None >	▼
Mission CER Down RG	< None >	▼

Device Pool Configuration

Save Delete Copy Reset Apply Config Add New

Device Pool Name* ChattanoogaCC-DP

Cisco Unified Communications Manager Group* Sub-14

Calling Search Space for Auto-registration < None >

Adjunct CSS < None >

Reverted Call Focus Priority Default

Intercompany Media Services Enrolled Group < None >

MRA Service Domain < None >

Roaming Sensitive Settings

Date/Time Group* EST-DTG

Region* G711-Region

Media Resource Group List ChattanoogaCC-MRGL

Location ChattanoogaCC-LOC

Network Locale < None >

SRST Reference* Disable

Connection Monitor Duration***

Single Button Barge* Default

Join Across Lines* Default

Physical Location < None >

Device Mobility Group < None >

Wireless LAN Profile Group < None > [View Details](#)

Local Route Group Settings

Standard Local Route Group < None >

Springfield CER Down RG < None >

Chattanooga CER Down RG CUBE ITSP PSTN Route Group

ColoSprings CER Down RG < None >

Oakland CER Down RG < None >

Jefferson CER Down RG < None >

Mission CER Down RG < None >

...and continue for all of the remaining Device Pools.

Verify

In order to test, first ensure you have a phone in each of the Device Pools, then disable both CER servers.

This works with a single CER-911-PT partition and a single CER-911-CSS calling search space (CSS).

Note: Calls back from the PSAP to each ELIN must normally use Translation Patterns to prefix 913 and route calls back to CER via a CTI Route Point. If CER is down, then the Call Forward settings of the CTI Route Point must already be configured with the "Onsite security number" (per the Cisco Emergency Responder Administration Guides).

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.