

# Configuration For Curri - ECC

## Additional configuration when using ECC-CURRI

### System Requirements for External Call Control - CURRI

- Cisco Unified Communications Manager 8.0(2) or higher
- Imagicle Application Suite Winter 2014 edition or later

### Imagicle Application Suite Configuration

Go to the Imagicle Application Suite Web configuration portal, **Phone Lock** -> **Global Settings**

Choose Cisco External Call Control (also known as CURRI) as Block engine technology. You will need the **Cisco External Call Control URI** generated from web page for configuring External Call Control Profile URI later, in Cisco CallManager configuration. The URI will be similar to:

`http://<Imagicle_server_IP_address>:80/fw/ecc.ashx`

**Settings**

**XML Service URL**  
This is the URL to be used when configuring IP Phone Service into CUCM Admin. If server has more than one ip address configured, please, choose the one reachable by IP Phones.  
`http://192.168.4.35/fw/Apps/StoneLock/xml/lock/default.aspx?name=#DEVICENAME#`  
`http://192.168.4.35/fw/Apps/StoneLock/xml/lock/default.aspx?name=#DEVICENAME#`

**Block engine technology**  
Cisco External Call Control (CURRI) Choose which kind of technology you want to use for call blocking. Available options are Tapi and Cisco External Call Control (CURRI)

**Cisco External Call Control (CURRI) URI**  
Use this Uri in Cisco Unified Communication Manager, External Call Control Profile configuration  
`http://192.168.4.35:80/fw/ecc.ashx`  
`http://192.168.4.35:80/fw/ecc.ashx`

**Note:** you must enter the URI generated from this page. If you enter a different URI (e.g. without the specified port) the configuration won't work.

**Note:** Phone Lock ECC-CURRI method does not allow to lock overlapping phone lines, even on different partitions. This feature is available starting from Imagicle 2020.Spring.1 release, only when using TAPI method.

### Cisco CallManager ECC Configuration

**Warning:** Due to a Cisco CallManager known issue, every modification on a External Call Control Profile requires a Cisco CallManager service restart. This can drop all the calls in progress.

### External Call Control Profile

The External Call Control Profile (ECCP) is how Imagicle Application Suite is linked with Unified CM. Configuring an ECCP adds your application's URL to the Unified CM database. The ECCP can then be added to *Trigger Points* in Unified CM. Available Trigger Points are:

- Translation Pattern (CM 8.0 (2) or higher)
- Route Pattern (CM 10.0 or higher)
- Directory Number (CM 10.0 or higher)

## imagicle

When one of this Trigger Points is involved in routing process (e.g. a phone makes an outgoing call and tries to pass through a Translation Pattern) Unified CM sends a request to the ECCP configured link (Imagicle Application Suite) that elaborates the request and answers making a routing decision. The possible decisions are:

- Continue: the call will be routed applying the involved triggering point
- Deny (i.e. block with optional message): the involved triggering point is not applied and unified CM stops call routing
- Divert call

**Warning:** The Directory Number ECC profile is triggered only for incoming calls (i.e. calls that ring on that DN). Besides, calls routed to the DN by an Hunt pilot do not trigger the ECC profile call.

## Configuration in UCM

In Cisco Unified CM Administration, specify the following information in the Call Routing -> "External Call Control Profile Configuration" window:

- **Name** of the External Call Control Profile (ECCP)
- **Primary Web Service:** URI of the Imagicle Application Suite (the one generated during Application Suite configuration in Global Settings page)
  - permits configuration of two URIs, for redundancy (active & standby) and for load balancing (where Imagicle High Availability options is available)
  - supports HTTP
- **Timeout** value for call routing response (suggested value is 5000 ms)
- **Diversion rerouting calling search space:** this CSS is applied in case of diversion to a number for a blocked call
- **Call treatment on failures:** choose the treatment if Imagicle Application Suite is unresponsive or response timeout has been reached (Allow Calls is suggested)

The screenshot displays the 'External Call Control Profile Configuration' window in the Cisco Unified CM Administration interface. The window title is 'Cisco Unified CM Administration For Cisco Unified Communications Solutions'. The navigation bar includes 'System', 'Call Routing', 'Media Resources', 'Advanced Features', 'Device', 'Application', and 'User Management'. The 'Call Routing' menu is expanded, showing 'External Call Control Profile Configuration'. The 'Related Links' section includes 'Back To Find/List' and 'Go'. The 'Status' section shows 'Status: Ready'. The 'External Call Control Information' section contains the following fields:

- Name\***: Imagicle Ecc-curri
- Primary Web Service\***: http://192.168.150.237:80/fw/eccstonelock.ashx
- Secondary Web Service**: (empty)
- Enable Load Balancing**: ☐
- Routing Request Timer**: 5000
- Diversion Rerouting Calling Search Space**: < None >
- Call Treatment on Failures\***: Allow Calls

At the bottom, there are buttons for 'Save', 'Delete', 'Copy', and 'Add New'.

## Trigger Points

A Trigger Point is the point in Unified CM's routing logic at which Unified CM issues a Route Request.

- *Translation Pattern* trigger points are available in Unified CM 8.0(1) and later
- *Route Patterns* and *Directory Numbers* are trigger points in Unified CM 10.0 and later

## Enable ECCP in Translation Pattern Trigger point

**Cisco Unified CM Administration**  
For Cisco Unified Communications Solutions

Navigation: Cisco Unified CM Administration | appadmin | Search Documentation

System ▾ Call Routing ▾ Media Resources ▾ Advanced Features ▾ Device ▾ Application ▾ User Management ▾

**Translation Pattern Configuration** Related Links: Back To Find/List ▾ Go

Save ✖ Delete Copy + Add New

**Status**  
Status: Ready

**Pattern Definition**

Translation Pattern	0.1
Partition	< None > ▾
Description	OUTGOING
Numbering Plan	< None > ▾
Route Filter	< None > ▾
MLPP Precedence*	Routine ▾
Resource Priority Namespace Network Domain	< None > ▾
Route Class*	Default ▾
Calling Search Space	ALL_IP_PHONES ▾
External Call Control Profile	Imagicle Ecc-curri ▾
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern No Error ▾

☒ Provide Outside Dial Tone  
☒ Urgent Priority  
☐ Route Next Hop By Calling Party Number

## Enable ECCP in Route Pattern Trigger Point (In Unified CM 10.0 and later)

Route Pattern Configuration

Save

Delete

Copy

Add New

Status: Ready

Route Pattern\*

1XXX

Route Partition

< None >

Description

Numbering Plan

-- Not Selected --

Route Filter

< None >

MLPP Precedence\*

Default

☐ Apply Call Blocking Percentage

Resource Priority Namespace Network Domain

< None >

Route Class\*

Default

Gateway/Route List\*

SIPT-58212

(Edit)

Route Option

☒ Route this pattern
☐ Block this pattern

No Error

Call Classification\*

OffNet

External Call Control Profile

< None >

### Enable ECCP in Directory Number Trigger Point (In Unified CM 10.0 and later)

Directory Number Configuration

Save

Delete

Reset

Apply Config

Add New

Status: Ready

Directory Number\*

3009

Route Partition

< None >

Description

Alerting Name

ASCII Alerting Name

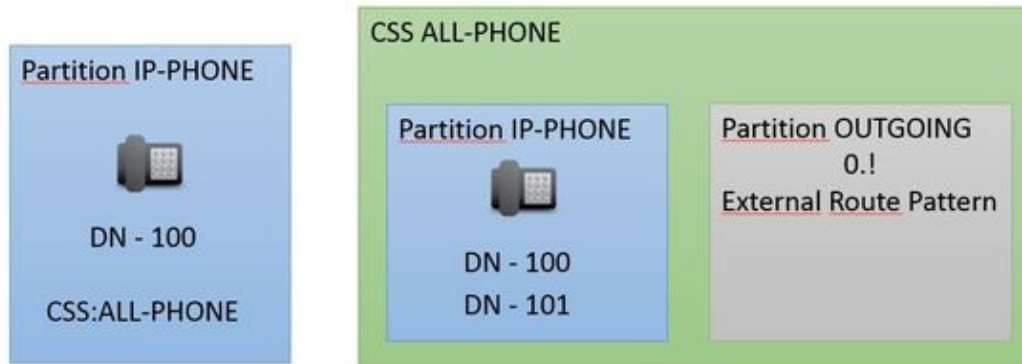
External Call Control Profile

< None >

### CM Configuration Guidelines

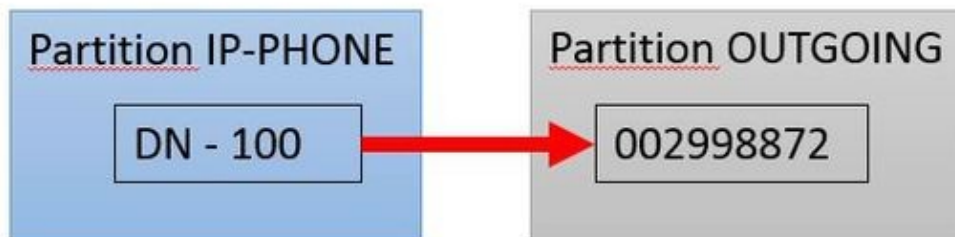
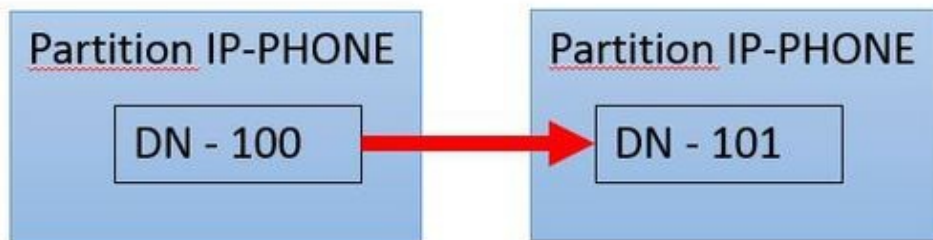
The most used trigger point is Translation Pattern (the only one available until Cisco CallManager version 10.0).

if you want the External Call Control (also known as CURRI) web service to be used in call routing you must be sure to involve the translation pattern in call flow. Following schemas represent a simple standard configuration in a Cisco CallManager environment:

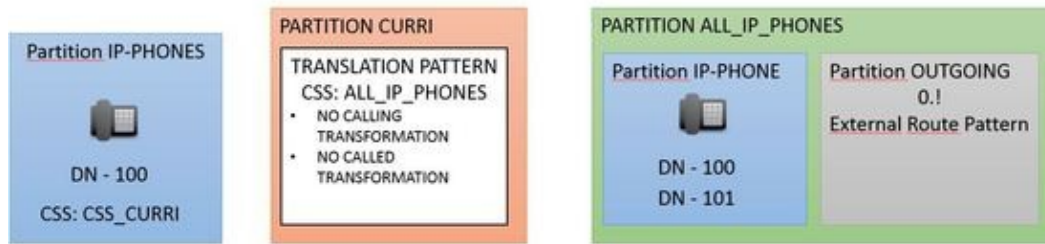


In this example, we have a phone with a Directory Number contained in IP-PHONE partition and with ALL-PHONE Calling Search Space. ALL-PHONE includes IP-PHONE and OUTGOING partitions. In this simple case any Directory Number in partition IP-PHONE could call any phone in IP-PHONE partition or any External number starting with 0.

Call Flow examples:



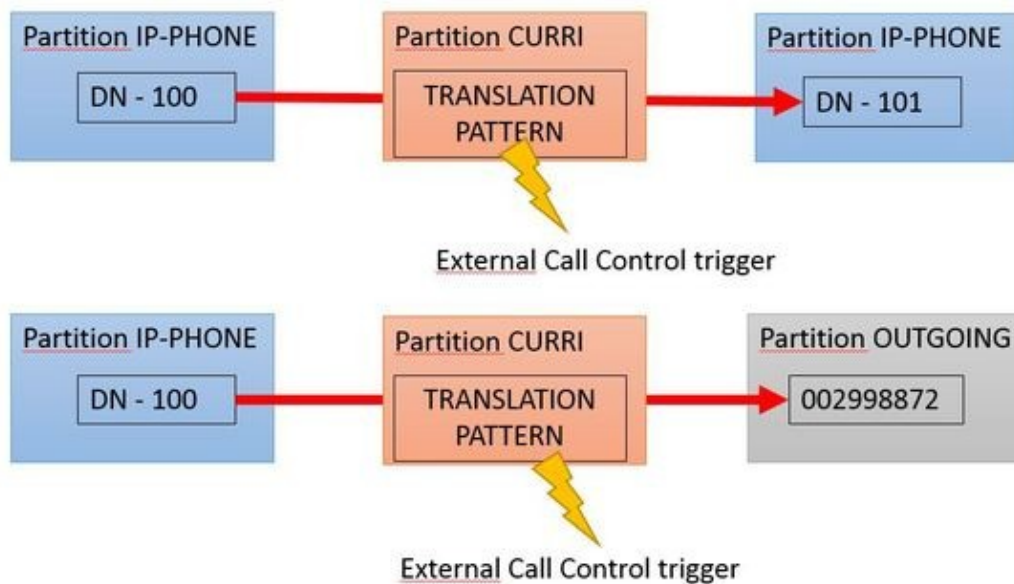
Introducing translation pattern for triggering External Call Control schema should change:



The changes are:

- Create the translation pattern with External Call Control Profile and Calling Search Space ALL-PHONE
- Create a new partition, CURRI, that includes the just created translation pattern
- Create a new Calling search Space, CSS\_CURRI, that includes CURRI partition, but no IP-PHONE partition
- Change the Directory Number Calling Search Space to CSS\_CURRI

The call flows become:



**Note:** be careful with CSS and Partition configuration, a wrong configuration could lead to call loops that can give telephony inefficiency or deteriorate your PBX and Imagicle Application Suite performances

## Blocking incoming calls with ECC - CURRI

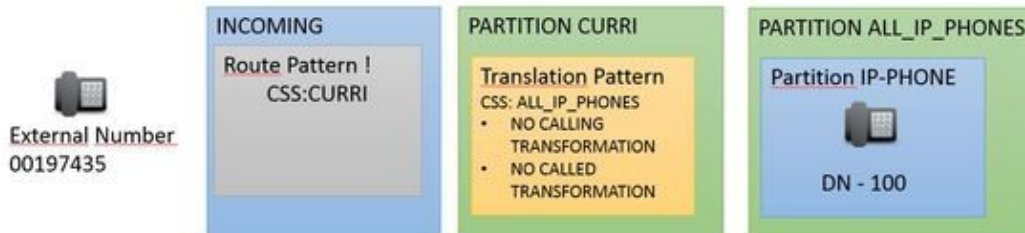
To block the incoming calls, the guidelines are similar. Starting with a simple standard configuration, with an incoming route pattern that routes the calls to internal phones as shown below:



External Number  
00197435



If there are Translation Patterns in the flow (E.g. for translation from E164 to internal number) the solution is easy, just add an External Call Control Profile to the involved translations in order to have a ready to use system.



In case no Translation Patterns are involved, it is necessary to insert a new level in Numbering Plan as we did for outgoing calls. You need to:

- Create the translation pattern with External Call Control Profile and Calling Search Space ALL\_IP\_PHONES
- Create a new partition, CURRI, that includes the just created translation pattern
- Create a new Calling search Space, CSS\_CURRI, that includes CURRI partition, but no IP-PHONE partition
- Change the incoming Route Pattern Calling Search Space to CSS\_CURRI

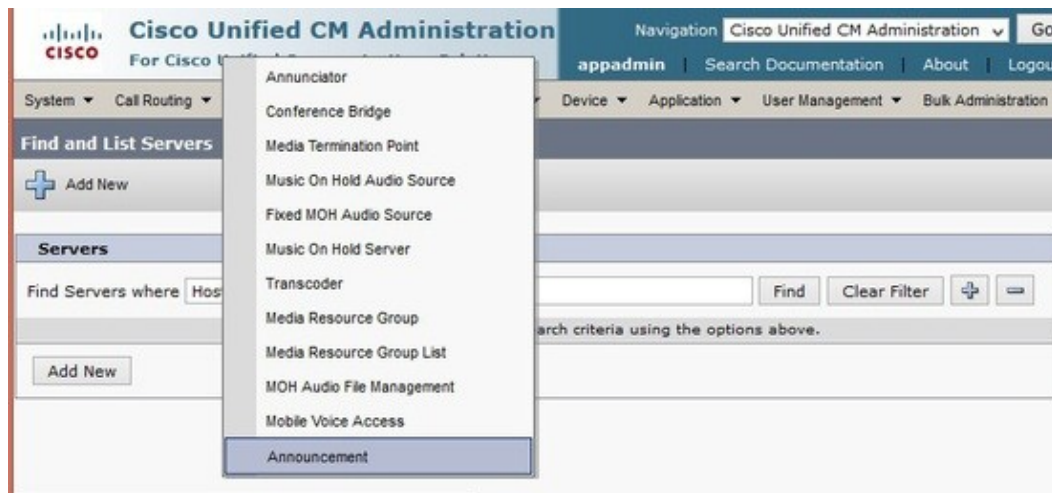
## Play a message when a call is blocked

In order to play a message to the caller when a call is blocked, you must first enable "IP Voice Media Streaming" service:

- Access to CUCM "Cisco Unified Serviceability" web portal and select Tools & Service Activation
- Make sure that "Cisco IP Voice Media Streaming App" is **Activated**

CM Services		
	Service Name	Activation Status
<input checked="" type="checkbox"/>	Cisco CallManager	Activated
<input type="checkbox"/>	Cisco Unified Mobile Voice Access Service	Deactivated
<input checked="" type="checkbox"/>	Cisco IP Voice Media Streaming App	Activated
<input checked="" type="checkbox"/>	Cisco CTIManager	Activated
<input type="checkbox"/>	Cisco Extension Mobility	Deactivated
<input type="checkbox"/>	Cisco Extended Functionality	Deactivated

Then you should upload a file from Cisco CallManager Administration web portal, in the **Media Resources & Announcement** web page:



Add a new Announcement, filling the required fields as shown below:


After the Announcement creation, you have to upload a sound file.

**Note:** Announcements are specific to the locale (language). If your installation is using more than one language locale, each custom announcement must be recorded in each language as a separate **.wav** file and uploaded with the correct locale assignment. This also requires that the correct locale package be installed on each server before uploading custom announcement wav files for languages other than United States English.

The recommended format for announcements includes the following specifications:

- 16-bit PCM wav file
- Stereo or mono
- Sample rates: 48 Khz, 44.1 Khz, 32 Khz, 16 Khz or 8 Khz








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**Announcement Configuration**
Related Links: **Back To Find/List** ▾ **Go**

 Save
 Delete
 Add New
 Upload File

**Status**

 Add successful


**Announcement**

Announcement Identifier\*

Description

Default Announcement


Save Delete Add New Upload File

 \*- indicates required item.

You can upload one different file for each Local installed in your Cisco CallManager

**Upload File**

**Status**

 Status: Ready


**Upload File**

Announcement Identifier\*

Locale\* 

Upload File  BlockMessage.wav

Upload File Close

 \*- indicates required item.











After file upload you have to insert the Announcement identifier in the Imagicle Application Suite Web interface, PhoneLock Settings page, as you created in Cisco CallManager (in the example "ecc-curri-block-message")

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Configuration For Curri - ECC

**Imagicle**  
ApplicationSuite  
for Cisco UC

Phone Lock
Global Settings
Manage Service

Settings

**XML Service URL**  
This is the URL to be used when configuring IP Phone Service into CUCM Admin. If server has more than one ip address configured, please, choose the one reachable by IP Phones.  
http://192.168.150.152/fw/Apps/StoneLock/xml/lock/default.aspx?name=#DEVICENAME#

**Block engine technology**  
Cisco External Call Control (CURRI)
Choose which kind of technology you want to use for call blocking. Available options are Tapi and Cisco External Call Control (CURRI)

**Cisco External Call Control (CURRI) URI**  
Use this Uri in Cisco Unified Communication Manager, External Call Control Profile configuration  
http://192.168.150.152:80/fw/curri

**Blocked call announcement**  
ecc-curri-block-message
Insert the optional Announcement Identifier, as listed in Cisco Call Manager Announcements list, if you want to play an audio prompt when blocking calls

**Delete CDRs older than**  
15
Number of days for blocked calls history retention

**List of allowed numbers when phones are locked**  
One entry for each row. You can use the character "I" to permit any sequence of digits (i.e. "9I" for any number starting with "9"). You can use the character "." to permit any single digit (i.e. "90.." for any 4 digits number starting with "90")

From now on every blocked, the caller will hear the uploaded message.

**Warning:** *Diversion* is not compatible with *Message playback*, so if you specify both a block message and a diversion number, the External Call Control (Curri) plugin will only redirect the call without playing any message.

## Divert blocked calls

You can divert a blocked call to a number (E.g. voicemail), the number is system wide and you can configure it in Imagicle Application Suite Phone Lock **Global Settings** Page.

**Phone Lock**
[Global Settings](#)
[Manage Service](#)
[Calls History](#)

Settings

**XML Service URL**  
This is the URL to be used when configuring IP Phone Service into CUCM Admin. If server has more than one ip address configured, please, choose the one reachable by IP Phones.  
http://192.168.150.237/fw/Apps/StoneLock/xml/lock/default.aspx?name=#DEVICENAME#

**Block engine technology**  

Cisco External Call Control (CURRI)

Choose which kind of technology you want to use for call blocking. Available options are Tapi and Cisco External Call Control (CURRI)

**Cisco External Call Control (CURRI) URI**  
Use this Uri in Cisco Unified Communication Manager, External Call Control Profile configuration  
http://192.168.150.237:80/fw/EccStoneLock.ashx

**Blocked call announcement**  

Insert the optional Announcement Identifier, as listed in Cisco Call Manager Announcements list, if you want to play an audio prompt when blocking calls

**Delete CDRs older than**  

15

Number of days for blocked calls history retention

**List of allowed numbers when phones are locked**  

One entry for each row. You can use the character "1" to permit any sequence of digits (i.e. "91" for any number starting with "9"). You can use the character "." to permit any single digit (i.e. "90.." for any 4 digits number starting with "90")

**Redirect outgoing calls to**  

9000

If specified, StoneLock redirect outgoing calls to this number when the phone is locked.

**Block Incoming calls when phone is locked**  
☒ Enable

**Redirect incoming calls to**  

If specified, StoneLock redirect incoming calls to this number when the phone is locked.

It is also necessary to specify a Diversion Rerouting Calling Search Space, used for call diversion of a blocked call

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**External Call Control Profile Configuration**
Related Links: Back To Find/List Go

Save Delete Copy Add New

**Status**  
*i* Status: Ready

**External Call Control Information**

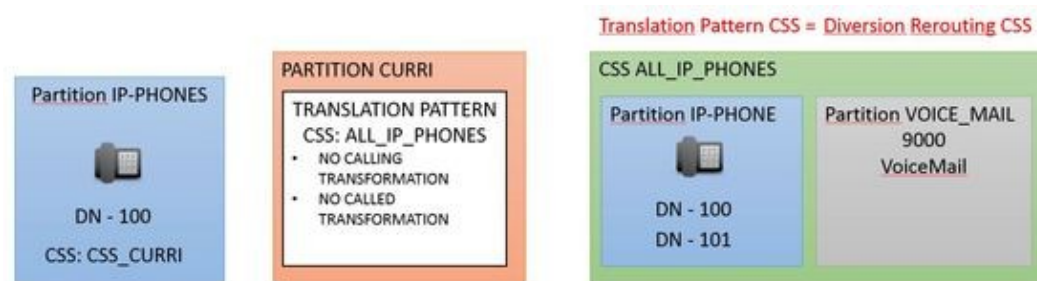
Name\* ecc-curri-148  
Primary Web Service\* http://192.168.150.148:80/fw/curri  
Secondary Web Service  
☐ Enable Load Balancing  
Routing Request Timer 3000  
Diversion Rerouting Calling Search Space VOICE\_MAIL  
Call Treatment on Failures\* Allow Calls

Save Delete Copy Add New

*i* \*- indicates required item.

The Diversion Calling Search Space will be used as Calling Search Space for the diverted call, so be sure that the redirection number is contained in that Calling Search Space. In the following images we modified the two standard architectures described above with a Voicemail diversion.

In first image Voicemail number belongs to the same Calling Search Space of the Translation Pattern, so there is no need to specify a new Calling Search Space, it is possible to use the phones one as Diversion rerouting Calling Search Space.



Translation Pattern and External Call Control Profile must be configured this way:

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**Translation Pattern Configuration**
Related Links: Back To Find/List Go

Save Delete Copy Add New

**Status**  
*i* Status: Ready

**Pattern Definition**

Translation Pattern  
Partition **ECC-CURRI**  
Description **EccCurriTP**  
Numbering Plan **< None >**  
Route Filter **< None >**  
MLPP Precedence\* **Default**  
Resource Priority Namespace Network Domain **< None >**  
Route Class\* **Default**  
Calling Search Space **ALL\_IP\_PHONES**  
External Call Control Profile **ecc-curri-148**  
Route Option  
☒ Route this pattern  
☐ Block this pattern **No Error**  
☒ Provide Outside Dial Tone  
☒ Urgent Priority  
☐ Route Next Hop By Calling Party Number

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**External Call Control Profile Configuration**
Related Links: Back To Find/List Go

Save Delete Copy Add New

**Status**  
*i* Status: Ready

**External Call Control Information**

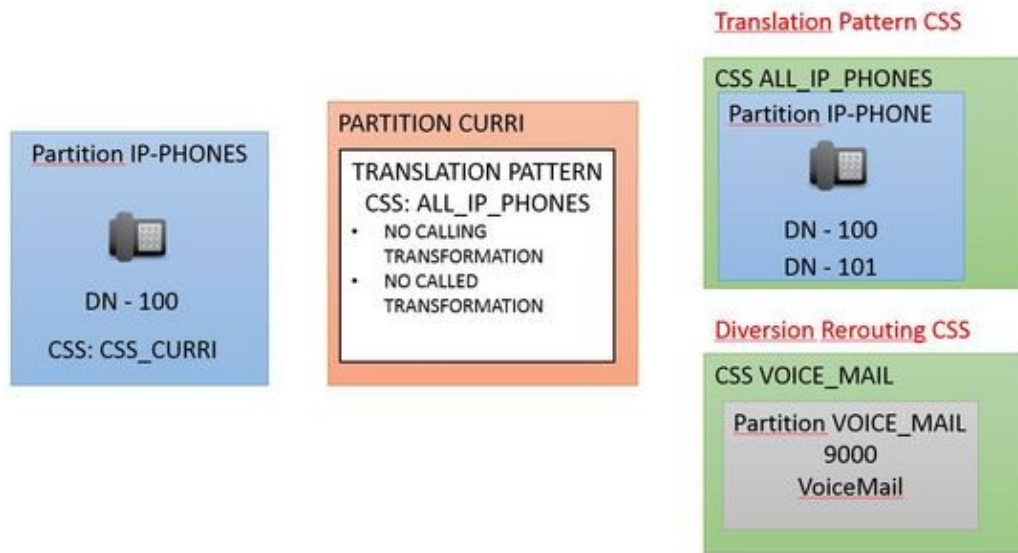
Name\* **ecc-curri-148**  
Primary Web Service\* **http://192.168.150.148:80/fw/curri**  
Secondary Web Service  
☐ Enable Load Balancing  
Routing Request Timer **3000**  
Diversion Rerouting Calling Search Space **ALL\_IP\_PHONES**  
Call Treatment on Failures\* **Allow Calls**

Save Delete Copy Add New

*i* \*- indicates required item.

In second image Voicemail number belongs to a different Calling Search Space, that includes only Voicemail numbers, so there will be the need of specify VOICE\_MAIL as Diversion rerouting Calling Search Space.





Translation Pattern and External Call Control Profile must be configured this way:

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Navigation: Cisco Unified CM Administration | Go  
appadmin | Search Documentation | About | Logout

System | Call Routing | Media Resources | Advanced Features | Device | Application | User Management | Bulk Administration

**Translation Pattern Configuration** Related Links: Back To Find/List | Go

Save | Delete | Copy | Add New

**Status**  
Status: Ready

**Pattern Definition**

Translation Pattern	
Partition	ECC-CURRI
Description	EccCurriTP
Numbering Plan	< None >
Route Filter	< None >
MLPP Precedence*	Default
Resource Priority Namespace Network Domain	< None >
Route Class*	Default
Calling Search Space	ALL_IP_PHONES
External Call Control Profile	ecc-curri-148
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern No Error

☒ Provide Outside Dial Tone  
☒ Urgent Priority  
☐ Route Next Hop By Calling Party Number

The screenshot shows the Cisco Unified CM Administration interface. The main title is "Cisco Unified CM Administration For Cisco Unified Communications Solutions". The navigation bar includes links for "appadmin", "Search Documentation", "About", and "Logout". The main menu includes "System", "Call Routing", "Media Resources", "Advanced Features", "Device", "Application", "User Management", and "Bulk Administration". The current page is "External Call Control Profile Configuration". The status section shows "Status: Ready". The form includes fields for "Name" (ecc-curri-148), "Primary Web Service" (http://192.168.150.148:80/fw/curri), "Secondary Web Service", "Enable Load Balancing" (checkbox), "Routing Request Timer" (3000), "Diversion Rerouting Calling Search Space" (VOICE\_MAIL), and "Call Treatment on Failures" (Allow Calls). The form also has "Save", "Delete", "Copy", and "Add New" buttons.

**NOTE:** If you try to divert a blocked call to a number without specifying a Diversion rerouting Calling Search Space, Cisco CallManager will try to reroute the call with **Calling Search Space=NONE**, that will probably let the call run into a service unavailable pattern.

**NOTE:** Diversion is not compatible with Message playback, so if you specify both a block message and a diversion number, the External Call Control (Curri) plugin will only redirect the call without playing any message.

## Notes on CuCM performance

Unified CM experiences some degree of performance degradation if it queries route servers for a majority of incoming calls.

The performance degradation depends on the following factors:

- Response time from route servers
- Network latency for call routing requests and responses

Slow response or network latency adds delay to the post-dial silence for a call. Testing shows that when the response time from the route server is below 50ms (RTT), there is a 15% degradation in the maximum call rate when all calls are subject to a Route Request/Response.

## Call Block History & Basic Troubleshooting

A complete list of Calls processed by the Imagicle Application Suite External Call Control (CURRI) web service is accessible at the Phone Lock Calls History Web Page. This web page reports the full list of processed requests. It is possible to filter on a specific date, check the call resume (Time, calling, caller, decision and reason) and go deep in a single request opening the call detail. Here you can check the HttpRequest arrived at the web service, the HttpResponse given back to the Cisco CallManager and the specific Application Decisions taken by the Phone Lock Enterprise Service. For a full list of call block reasons please refer the table at the end of this article.

## Basic functional test

Make a call from an unlocked phone, verify that:

- Call passes
- Call is visible in the Calls History, with decision **Continue**

Lock phone and make a call to an unlocked phone, verify that:

- Call is blocked
- Call is visible in the Calls History, with decision **Deny**

For more Phone Lock troubleshooting tips and information please refer to [this](#) section.

## Calls History Call Block Reasons Reference

Calling	Called	Description
UserLocked	None	Calling User Locked
UserLocked	UserLocked	Internal Call among locked Users
UserLocked	UserUnlocked	Internal call blocked due to caller block
UserLocked	ExternalNumber	Outgoing external call blocked due to caller block
UserLocked	UserLockedAllowedRemoteParty	Internal call blocked due to caller block
UserLocked	UserLockedAllowedSystemPolicy	Internal call blocked due to caller block (Incoming call block is disable)
UserUnlocked	UserUnlocked	Internal Call among unlocked Users
UserUnlocked	ExternalNumber	Outgoing external call from unlocked User
UserUnlocked	None	Calling User Unlocked
UserUnlocked	UserLocked	Internal Call blocked due to called block
UserUnlocked	UserLockedAllowedRemoteParty	Internal Call, called was locked but caller belongs to white list
UserUnlocked	UserLockedAllowedSystemPolicy	Internal call allowed by system policy (Incoming call block is disable)
ExternalNumber	None	External incoming call
ExternalNumber	UserUnlocked	External incoming call to unlocked User
ExternalNumber	UserLocked	External incoming call to locked User
ExternalNumber	UserLockedAllowedRemoteParty	External incoming call to locked User, from an allowed number
ExternalNumber	ExternalNumber	Call among two external numbers
ExternalNumber	UserLockedAllowedSystemPolicy	Incoming call allowed by system policy (Incoming call block is disable)
UserLockedAllowedRemoteParty	UserLocked	Called User Locked
UserLockedAllowedRemoteParty	UserUnlocked	Called User Unlocked, Called belong to white list
UserLockedAllowedRemoteParty	ExternalNumber	Outgoing Call from locked User to white list external number
UserLockedAllowedRemoteParty	None	Outgoing Call from locked User to white list number
UserLockedAllowedRemoteParty	UserLockedAllowedRemoteParty	Internal Call among locked Users both belonging to white list
UserLockedAllowedRemoteParty	UserLockedAllowedSystemPolicy	Internal call among two locked user, allowed by white list (Called is in white list) and system policy (Incoming call block is disable)
LicenseExpired	LicenseExpired	License expired or not valid