

瞭解邏輯分割槽策略和地理位置的運作方式

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簡介

本文檔介紹如何在需要將網外呼叫與網內呼叫分開的國家(如印度)中使用地理定位、地理定位過濾器 and 邏輯分區。呼叫搜尋空間(CSS)和分割槽提供的服務類別可能無法提供為遵守某些法律和法規所需的粒度級別。您還可能發現這些相同的元素用於跨群集分機移動(EMCC)配置。請參閱[Cisco Unified Communications Manager 7.1\(2\)版功能和服務指南](#)，該指南說明如何篩選到更具體的位置。本檔案沒有進一步討論地理組成部分。相反，本文的重點是回顧它在邏輯上是如何協同工作的。

必要條件

需求

本文件沒有特定需求。

採用元件

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除(預設)的組態來啟動。如果您的網路正在作用，請確保您已瞭解任何指令可能造成的影響。

慣例

如需檔案慣例的相關資訊，請參閱[思科技術提示慣例](#)。

CUCM策略管理

這些主要元素可在思科統一通訊管理器(CUCM)(CallManager)CCMAdmin頁面上找到：

- Device > Phone > Find > Geolocation/Device Pool
- Device > Trunk > Find > Geolocation/Device Pool
- System > Device Pool > Find > Geolocation/Geolocation Filter
- System > Geolocation Configuration
- System > Geolocation Filter

在CCMAdmin下，轉至Enterprise Parameters > Logical Partitioning Configuration。有四個引數會影響地理位置和邏輯分割槽。請注意：

- 所有裝置配置、裝置池配置、邏輯分割槽配置、地理位置、過濾器等必須將Enable Logical Partitioning引數從預設值False更改為True。
- 預設情況下，Default Policy設定為Deny。無策略在Call Routing > Logical Partition Policy Configuration中顯式定義。
- 即使您的Device Geolocation配置和Device Pool Geolocation配置為空，也可以為裝置分配Default Geolocation。

如果您更改了配置，但無法弄清它為什麼不能按預期運行，請檢查直接分配給終端（如電話）的地理位置以及中繼和網關（如SIP中繼）。如果沒有直接分配給電話、中繼或網關的地理位置分配，請分別檢查分配給裝置池的地理位置分配器和地理位置過濾器。如果兩者均為空白，請檢查上述Enterprise Parameters中列出的Default Policy。

現在您已瞭解分配給電話（內部裝置）和中繼或網關（邊界裝置）的詳細資訊，可以匹配邏輯分割槽策略。轉到呼叫路由 > 邏輯分割槽策略配置。瞭解和理解策略可能是個難題。本文的目標之一是提供有幫助和全面的示例。

示例場景

您可以配置兩個名為Bangalore和Chennai的策略。瞭解，當您上拉「Logical Partitioning Policy Configuration」頁時，該頁的頂部有一個名稱，該名稱始終連結到您選擇的兩個裝置型別中的第一個裝置型別。當您配置班加羅爾邏輯分割槽策略（地理定位策略）時，「允許/拒絕」關係總是從班加羅爾內部或班加羅爾邊界開始。

使用這兩種策略，Bangalore策略頁面上可能的排列包括：

- 班加羅爾內陸到班加羅爾內地
- 班加羅爾內陸到班加羅爾邊界
- 班加羅爾邊界至班加羅爾內陸
- 班加羅爾邊界至班加羅爾邊界
- 班加羅爾內陸到欽奈內陸
- 班加羅爾內陸至欽奈邊界
- 班加羅爾邊界至金奈內地
- 班加羅爾邊界至金奈邊界

有了這兩個策略，Chennai策略頁面上還有八種可能的排列方式，包括：

- 欽奈內陸到班加羅爾內地
- 欽奈內陸到班加羅爾邊界
- 欽奈邊境至班加羅爾內地
- 欽奈邊境至班加羅爾邊界
- 清奈內部到清奈內部
- 欽奈內陸至欽奈邊界
- 欽奈邊境至欽奈內陸
- 欽奈邊界至欽奈邊界

附註：由於各種原因，無需配置如此多的策略關係。關係邏輯並不檢查方向。因此，從班加羅爾內陸到欽奈邊境與從欽奈邊境到班加羅爾內陸相同。儘量避免配置相互衝突。

政策衝突和重疊常見問題

Q: 如果存在衝突或策略重疊，會發生什麼情況？

A:雖然有一些邏輯，但可能很難追蹤。該邏輯與最後新增的策略相關，不是已修改的策略，而是新新增的策略。

如果包含值Allow的策略隨後更改為Deny，則其將保持為Deny。事實恰恰相反。之前設定為Deny、之後更改為Allow的策略是Allow。Cisco Unified Reporting > Geolocation Policy Report可幫助您識別重疊策略。

Q:如果從班加羅爾內陸到欽奈邊境配置為允許，而從欽奈邊境到班加羅爾內陸配置為拒絕，情況會如何？

A:如果到班加羅爾內陸的欽奈邊境是最後一個被新增的邊界，那麼它的政策就優先於此。

附註：策略只影響內部到邊界、邊界到內部和邊界到邊界關係，而不影響內部到內部關係。

考慮到這些額外資訊，本文檔中的示例策略可以從合併的16個條目大幅縮減為7個條目。請記住，內部到內部不會受到影響。Interior-to-Interior和Overlap策略以刪除線顯示，因此不再出現在清單中。

Bangalore Policy頁面現在包括：

- Bangalore Interior to Bangalore Interior—*Interior-to-Interior*不受影響。
- 班加羅爾內陸到班加羅爾邊界
- 班加羅爾邊界至班加羅爾內陸—與Bangalore Interior to Bangalore Border重疊，在Bangalore Policy頁面上配置。
- 班加羅爾邊界至班加羅爾邊界
- 班加羅爾內陸到欽奈內部—*內部到內部*不受影響。
- 班加羅爾內陸至欽奈邊界
- 班加羅爾邊界至金奈內地
- 班加羅爾邊界至金奈邊界

Chennai Policy頁面現在包括：

- 金奈內部到班加羅爾內部—*內部到內部*未受到影響。
- 欽奈內陸到班加羅爾邊界—與Bangalore Border to Chennai Interior重疊，在Bangalore Policy頁面上配置。

- 欽奈邊境至班加羅爾內地 — 與*Bangalore Interior to Chennai Border*重疊，在*Bangalore Policy*頁面上配置。
- 欽奈邊境至班加羅爾邊界 — 與班加羅爾邊境到欽奈邊境重疊，在班加羅爾政策頁面上配置。
- 清奈內部到清奈內部 — 內部到內部未受影響。
- 欽奈內陸至欽奈邊界
- 欽奈邊境至欽奈內陸 — 與欽奈內陸和欽奈邊境重疊 在*Chennai*策略頁面上配置。
- 欽奈邊界至欽奈邊界

Chennai地理位置與Chennai策略匹配的IP電話是Chennai內部裝置。具有匹配Chennai策略的Chennai地理位置的SIP中繼是Chennai邊界裝置。無需專門指定**Device-Type**。CUCM自動對中繼、網關和電話進行分類。例如，如果您希望Chennai Interior裝置（電話）能夠在呼叫未被拒絕的情況下呼叫Chennai Border裝置（SIP中繼），則呼叫會收到快速忙碌訊號，您必須確保Chennai Interior to Chennai Border策略設定為**Allow**，而不會在以後配置任何策略重疊。

附註：對裝置池的更改應要求重置裝置池，以便提交更改。由於這可能會影響許多裝置，因此應在數小時後配置更改。

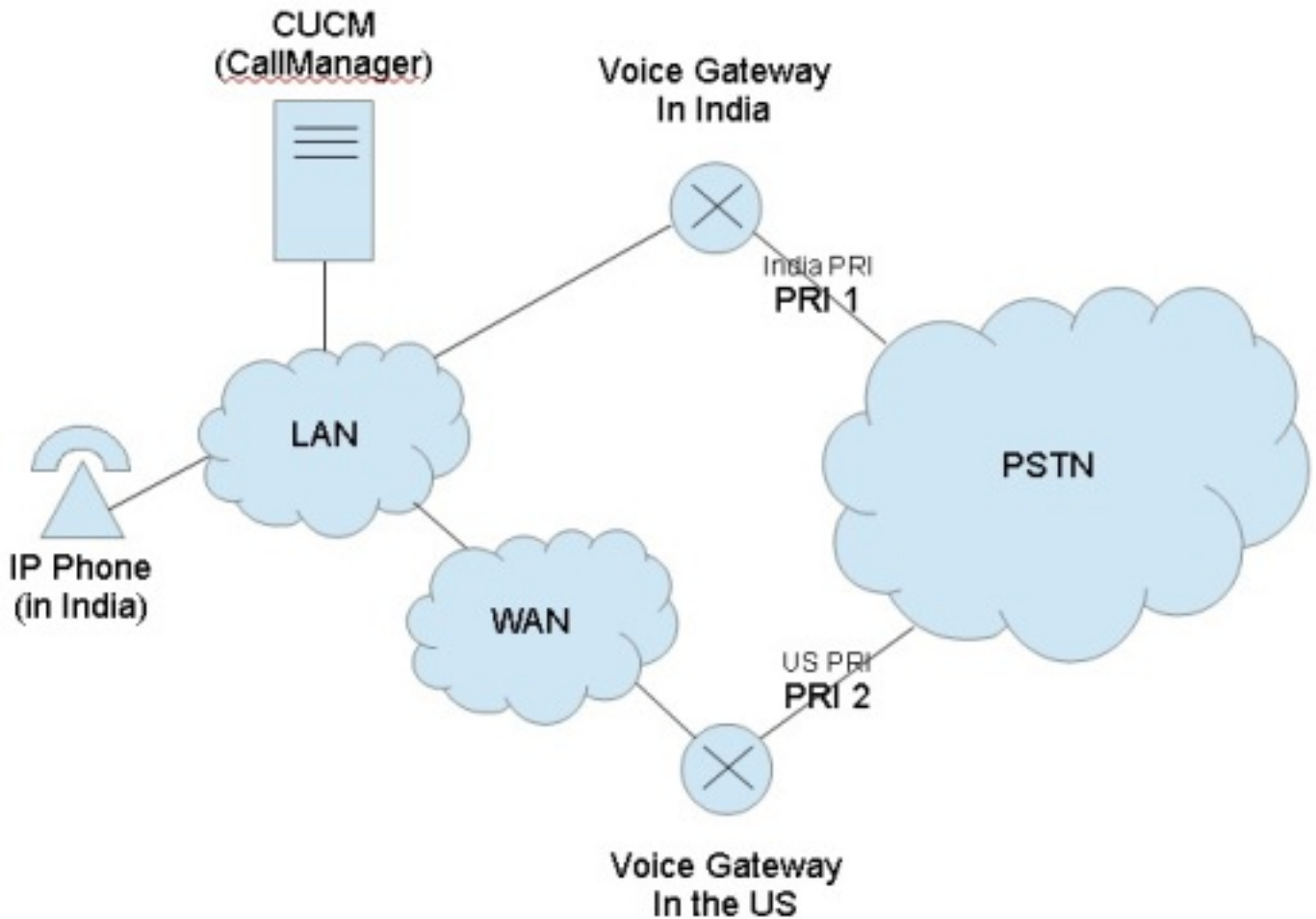
附註：在CallManager SDI(ccm.txt)跟蹤中，您可能會發現由於未執行數字分析(DA)的邏輯分割槽(LP)而拒絕呼叫。以下是範例：SIP邀請，正在嘗試，503服務不可用，中間沒有DA。

以下是完整拒絕訊息的範例：

```
09/18/2012 21:53:48.379 CCM|Cdcc::CcRejInd: ccRejInd.c.cv = -1493172161|
<CLID::KCMCS01-Cluster> <NID::10.50.1.11><CT::2,100,45,1.1290981><IP::10.50.15.127><DEV::>
<LVL::Detailed><MASK::0800>
...
CV=-1493172161 in CcRejInd refers to Logical Partitioning denial as per this
junked Defect CSCsz91044
...
09/18/2012 21:53:48.380 CCM|//SIP/SIPTcp/wait_SdlSPISignal: Outgoing SIP TCP
message to 10.50.15.127 on port 50380 index 90345
SIP/2.0 503 Service Unavailable
```

此圖提供地理位置和邏輯分割槽的示例。

圖1:網路圖表



此圖顯示所需的呼叫流程，這可能是因為政府規定限制TEHO(Tail-End-Hop-Off)和Toll-Bypass:

- 印度IP電話應該能夠撥出Primary Rate Interface(PRI)1，其原理是公共交換電話網路(PSTN)訪問是本地的。
- 印度IP電話不能以PSTN訪問不是本地訪問為由呼叫PRI 2。
- 類似地，儘管印度IP電話應該能夠撥出PRI 1並將呼叫置於保留狀態，但也不能撥出PRI 2並將所有三方加入會議。

使用地理位置和邏輯分割槽進行設定

本節介紹在CUCM中設定和配置地理位置和邏輯分割槽所執行的步驟。

第1步：在企業服務引數中配置這些設定。請注意是否將Logical Partitioning Default Policy設定為Deny或Allow。這一點很重要。對於此配置示例，它設定為Deny。

圖2:CUCM邏輯分割槽配置

The screenshot shows the Cisco Unified CM Administration interface. At the top, the navigation bar includes 'Cisco Unified CM Administration' and 'For Cisco Unified Communications Solutions'. The main menu includes 'System', 'Call Routing', 'Media Resources', 'Voice Mail', 'Device', 'Application', 'User Management', 'Bulk Administration', and 'Help'. The current page is 'Enterprise Parameters Configuration'. It features a toolbar with 'Save', 'Set to Default', 'Reset', and 'Apply Config'. Below the toolbar, there are two sections: 'Enterprise Parameters Configuration' and 'Logical Partitioning Configuration'. The 'Enterprise Parameters Configuration' section includes 'Report Socket Connection Timeout' (10) and 'Report Socket Read Timeout' (60). The 'Logical Partitioning Configuration' section includes 'Enable Logical Partitioning' (True), 'Default Geolocation' (Unspecified), 'Logical Partitioning Default Policy' (Deny), and 'Logical Partitioning Default Filter' (None). At the bottom, there are buttons for 'Save', 'Set to Default', 'Reset', and 'Apply Config'. A legend indicates that an asterisk (*) denotes a required item and a double asterisk (**) indicates that the 'Set to Default' button restores all parameters to their original default values.

第2步：轉到Geolocation Filter Configuration，然後為此特定配置指定單個過濾器。如果配置變得非常高級，您可以指定更多。在這種情況下，指定它僅與國家匹配。

圖3:CUCM地理位置過濾器配置

The screenshot shows the Cisco Unified CM Administration interface for 'Geolocation Filter Configuration'. The navigation bar is the same as in the previous screenshot. The main menu includes 'System', 'Call Routing', 'Media Resources', 'Voice Mail', 'Device', 'Application', 'User Management', 'Bulk Administration', and 'Help'. The current page is 'Geolocation Filter Configuration'. It features a toolbar with 'Save', 'Delete', 'Copy', and 'Add New'. Below the toolbar, there is a 'Status' section showing 'Status: Ready'. The 'Geolocation Filter Configuration' section includes a 'Name' field (GLF-Country) and a 'Description' field. Below these fields, there is a section for 'Match Geolocations using the following criteria:' with a list of checkboxes: 'Country using the two-letter abbreviation' (checked), 'State, Region, or Province (A1)', 'County or Parish (A2)', 'City or Township (A3)', 'Borough or City District (A4)', 'Neighborhood (A5)', 'Street (A6)', 'Leading Street Direction, such as N or W (PRD)', 'Trailing Street Suffix, such as SW (POD)', 'Address Suffix, such as Avenue, Platz (STS)', 'Numeric house number (HNO)', 'House Number Suffix, such as A, 1/2 (HNS)', 'Landmark (LMK)', 'Additional Location Information, such as Room Number (LOC)', 'Floor (FLR)', 'Name of Business or Resident (NAM)', and 'Zip or Postal Code (PC)'. At the bottom, there are buttons for 'Save', 'Delete', 'Copy', and 'Add New'.

步驟3:轉至地理位置配置，設定它首選過濾的特定指定位置。這非常簡單，並且除了針對您設定的地理位置過濾器外，不需要再進行配置，但是本示例確實顯示了一些其他配置。

圖4:CUCM地理位置清單

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation Cisco Unified CCMAAdmin

System > Call Routing > Media Resources > Voice Mail > Device > Application > User Management > Bulk Administration > Help >

Find and List Geolocations

+ Add New Select All Clear All Delete Selected

Status
3 records found

Geolocation (1 - 3 of 3)

Find Geolocation where Name begins with Find Clear Filter

<input type="checkbox"/>	Name	Description	
<input type="checkbox"/>	GL-India		
<input type="checkbox"/>	GL-US		
<input type="checkbox"/>	Unspecified		

Add New Select All Clear All Delete Selected

圖5:地理位置配置

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation Cisco Unified CCMAAdmin

System > Call Routing > Media Resources > Voice Mail > Device > Application > User Management > Bulk Administration > Help >

Geolocation Configuration

Save Delete Copy Add New

Status
Status: Ready

Geolocation Configuration

Name*

Description

Country using the two-letter abbreviation

State, Region, or Province (A1)

County or Parish (A2)

City or Township (A3)

Borough or City District (A4)

Neighborhood (A5)

Street (A6)

Leading Street Direction, such as N or W (PRD)

Trailing Street Suffix, such as SW (POD)

Address Suffix, such as Avenue, Platz (STS)

Numeric house number (HNO)

House Number Suffix, such as A, 1/2 (HNS)

Landmark (LMK)

Additional Location Information, such as Room Number (LOC)

Floor (FLR)

Name of Business or Resident (NAM)

Zip or Postal Code (PC)

Save Delete Copy Add New

圖6:地理位置配置第2頁

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation: Cisco Unified CM Administration

System ▾ Call Routing ▾ Media Resources ▾ Voice Mail ▾ Devices ▾ Application ▾ User Management ▾ Bulk Administration ▾ Help ▾

Geolocation Configuration Related Links: [Back To](#)

Save ~~Delete~~ Copy + Add New

Status
Status: Ready

Geolocation Configuration

Name *	GL-US
Description	
Country using the two-letter abbreviation	US
State, Region, or Province (A1)	TX
County or Parish (A2)	
City or Township (A3)	Dallas
Borough or City District (A4)	
Neighborhood (A5)	
Street (A6)	
Leading Street Direction, such as N or W (PRD)	
Trailing Street Suffix, such as SW (POD)	
Address Suffix, such as Avenue, Platz (STS)	
Numeric house number (HNO)	
House Number Suffix, such as A, 1/2 (HNS)	
Landmark (LMK)	
Additional Location Information, such as Room Number (LOC)	
Floor (FLR)	
Name of Business or Resident (NAM)	
Zip or Postal Code (PC)	

Save Delete Copy Add New

第4步：轉到Device Pool Configuration並查詢Geolocation Configuration引數。將此設定到電話實際所在的位置。

圖7:裝置池配置

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation: Cisco Unified CM Administration > CCMA Administrator

System > Call Routing > Media Resources > Voice Mail > Device > Application > User Management > Bulk Administration > Help

Device Pool Configuration

Related Links: [Back To Find/List](#)

Save ~~Delete~~ Copy Reset Apply Config Add New

Single Button Barge* Default
 Join Across Lines* Default
 Physical Location < None >
 Device Mobility Group < None >

Device Mobility Related Information****

Device Mobility Calling Search Space < None >
 AAR Calling Search Space < None >
 AAR Group < None >
 Calling Party Transformation CSS < None >
 Called Party Transformation CSS < None >

Geolocation Configuration

Geolocation GL-India
 Geolocation Filter GLF-Country

Incoming Calling Party Settings

If the administrator sets the prefix to Default this indicates call processing will use prefix at the next level setting (DevicePool/Service Parameter). Otherwise, the value configured is used as the prefix unless the field is empty in which case there is no prefix assigned.

[Clear Prefix Settings](#) [Default Prefix Settings](#)

Number Type	Prefix	Strip Digits	Calling Search Space
National Number	Default	0	< None >
International Number	Default	0	< None >

第5步：轉到電話的「裝置配置」頁面，並選擇電話所在的位置。

圖8:電話配置

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation: Cisco Unified CM Administration > CCMA Administrator

System > Call Routing > Media Resources > Voice Mail > Device > Application > User Management > Bulk Administration > Help

Phone Configuration

Related Links: [Back To Find/List](#)

Save ~~Delete~~ Copy Reset Apply Config Add New

Media Resource Group List	< None >
User Hold MOH Audio Source	< None >
Network Hold MOH Audio Source	< None >
Location*	Hub_None
AAR Group	< None >
User Locale	< None >
Network Locale	< None >
Built In Bridge*	Default
Privacy*	Default
Device Mobility Mode*	Default
Owner User ID	< None >
Phone Load Name	
Join Across Lines	Default
Use Trusted Relay Point*	Default
BLF Audible Alert Setting (Phone Idle)*	Default
BLF Audible Alert Setting (Phone Busy)*	Default
Always Use Prime Line*	Default
Always Use Prime Line for Voice Message*	Default
Calling Party Transformation CSS	< None >
Geolocation	GL-India

Use Device Pool Calling Party Transformation CSS
 Retry Video Call as Audio
 Ignore Presentation Indicators (Internal calls only)

[View Current Device](#)

第6步：轉到PRI介面的Device Configuration頁，並將它們配置為單個裝置，並且它們看起來相同。

圖9:印度的PRI

The screenshot shows the Cisco Unified CM Administration interface for Gateway Configuration. The page title is "Gateway Configuration" and it includes a "Related Links" section with a "Back to MGCP" link. The configuration is for a device in the "GL-India" geolocation. The "Product Specific Configuration Layout" section includes the following settings:

Unknown Number	Default	0	<input checked="" type="checkbox"/>	< None >
Subscriber Number	Default	0	<input checked="" type="checkbox"/>	< None >
Line Coding*	B8ZS			
Framing*	ESF			
Clock*	External			
Input Gain (-6..14 db)*	0			
Output Attenuation (-6..14 db)**	0			
Echo Cancellation Enable*	Enable			
Echo Cancellation Coverage (ms)*	64			

The "Geolocation Configuration" section shows "Geolocation" set to "GL-India" and "Geolocation Filter" set to "GLF-Country". At the bottom, there are buttons for "Save", "Delete", "Reset", and "Apply Config".

圖10:美國的PRI

The screenshot shows the Cisco Unified CM Administration interface for Gateway Configuration. The page title is "Gateway Configuration" and it includes a "Related Links" section with a "Back to MG" link. The configuration is for a device in the "GL-US" geolocation. The "Product Specific Configuration Layout" section includes the following settings:

Unknown Number	Default	0	<input checked="" type="checkbox"/>	< None >
Subscriber Number	Default	0	<input checked="" type="checkbox"/>	< None >
Line Coding*	B8ZS			
Framing*	ESF			
Clock*	External			
Input Gain (-6..14 db)*	0			
Output Attenuation (-6..14 db)**	0			
Echo Cancellation Enable*	Enable			
Echo Cancellation Coverage (ms)*	64			

The "Geolocation Configuration" section shows "Geolocation" set to "GL-US" and "Geolocation Filter" set to "GLF-Country". At the bottom, there are buttons for "Save", "Delete", "Reset", and "Apply Config".

i * - indicates required item.
i ** - applies to DMS-100 protocol only.

第7步:在配置邏輯分割槽策略時，此步驟較為困難。

附註：你需要兩個策略。

圖：11:邏輯分割槽策略清單

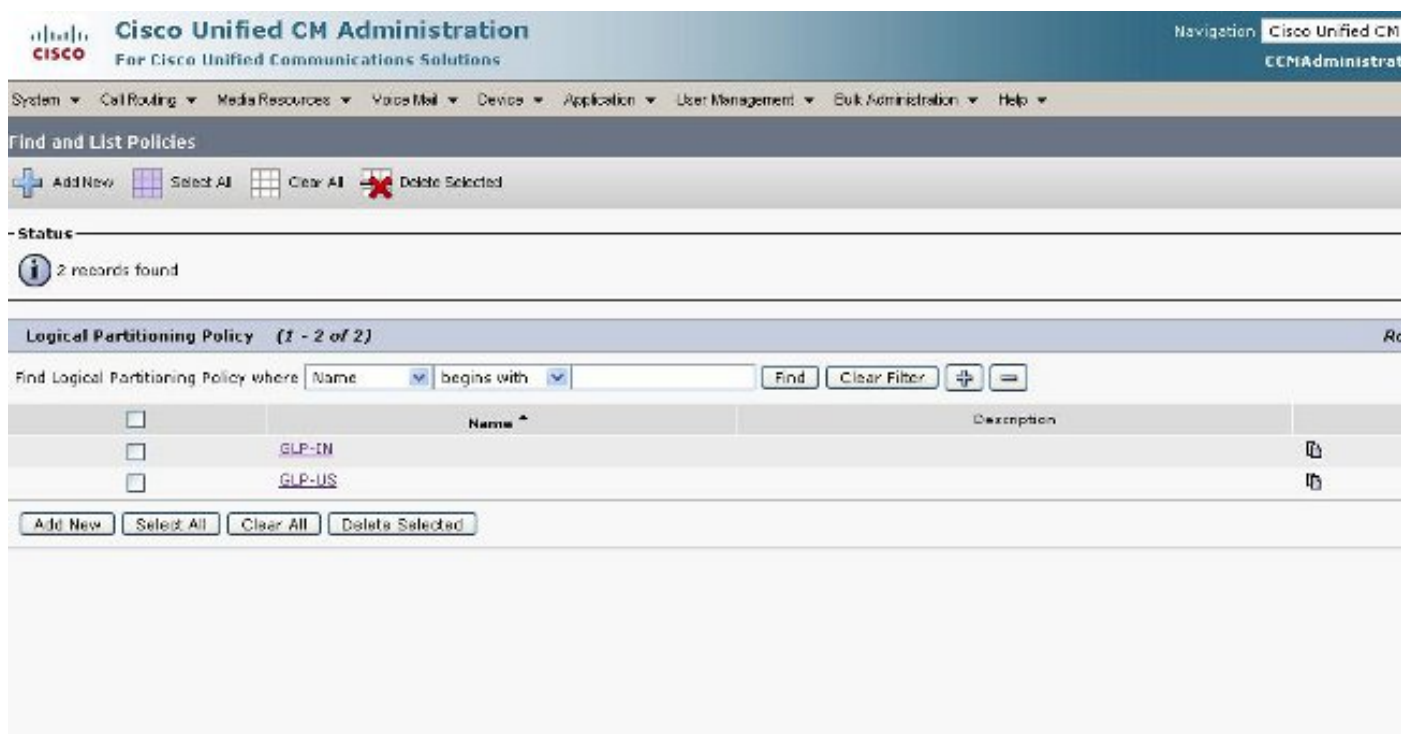


圖12:印度政策

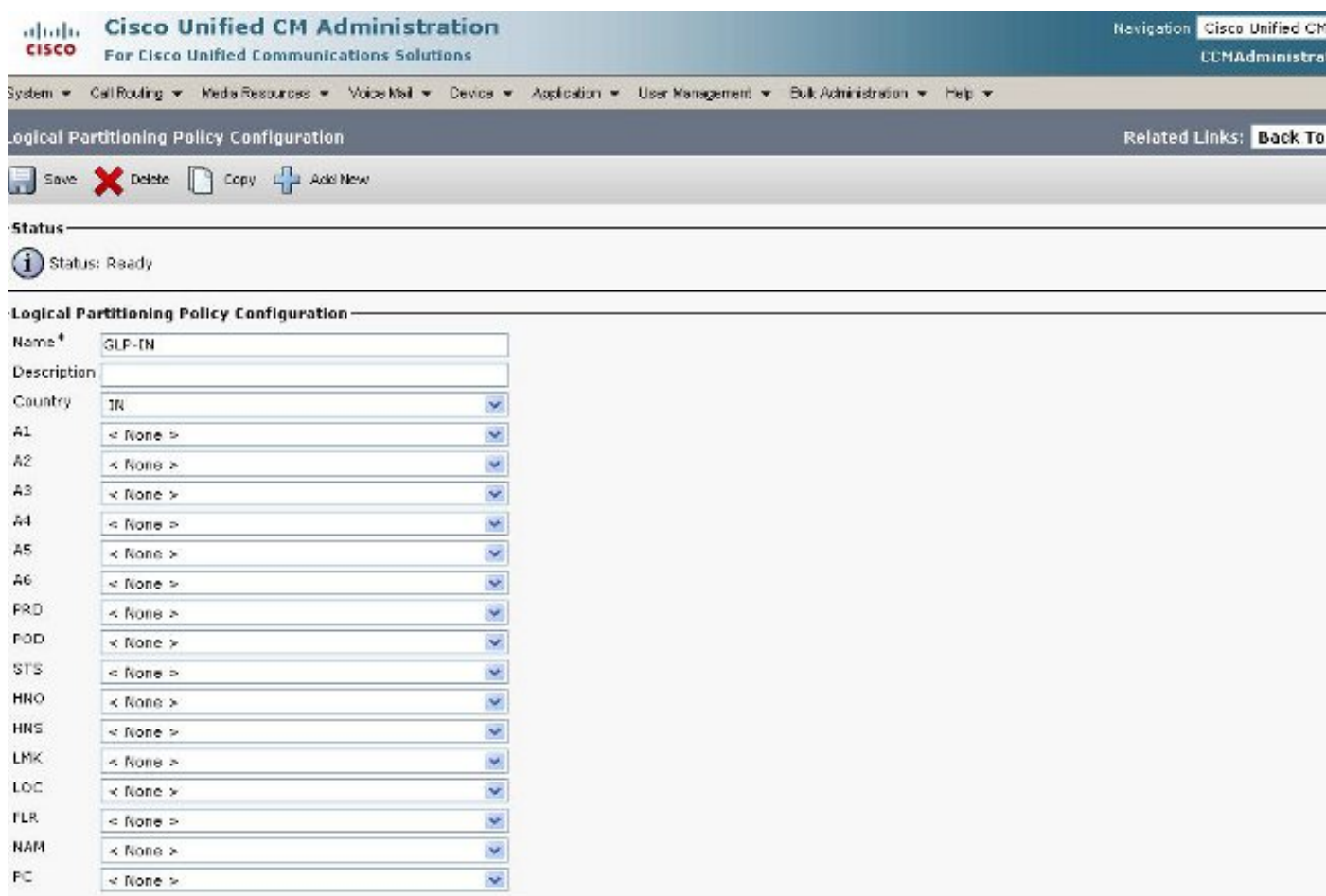


圖13:印度政策 (續)



Logical Partitioning Policy Configuration

Related Links: [Back To](#)

Save Delete Copy Add New

LMK

LOC

FLR

NAM

PC

—Configured Policies—

Device Type	Geolocation Policy	Other Device Type	Policy
Border	GLP-US	Border	Deny
Interior	GLP-US	Border	Allow
Interior	GLP-IN	Interior	Allow
Border	GLP-IN	Interior	Allow
Border	GLP-IN	Border	Allow

NOTE: Geolocation Policies that are not displayed use the Default Policy; To remove policies from the above list, set the respective policy to Use Default Policy

—Configure Relationship to other Geolocation Policies—

Device Type	Geolocation Policy	Other Device Type
<input type="text" value="Border"/>	<input type="text" value="GLP-IN
GLP-US"/>	<input type="text" value="Border"/>

Save Delete Copy Add New

* indicates required item.

圖14:美國政策



Logical Partitioning Policy Configuration

Related Links: [Back To](#)

Save Delete Copy Add New

Status

Status: Ready

Logical Partitioning Policy Configuration

Name*

Description

Country

A1

A2

A3

A4

A5

A6

PRD

POD

STS

HNO

HNS

LMK

LOC

FLR

NAM

PC

圖15:美國政策繼續

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation: Cisco Unified CM Administration

System > Call Routing > Media Resources > Voice Mail > Device > Application > User Management > Bulk Administration > Help

Logical Partitioning Policy Configuration Related Links: [Back To](#)

Save Delete Copy Add New

HRO < None >
HRS < None >
LMK < None >
LOC < None >
FLR < None >
NAM < None >
PC < None >

Configured Policies

Device Type	Geolocation Policy	Other Device Type	Policy
Border	GLP-IN	Border	Deny
Border	GLP-IN	Interior	Allow
Border	GLP-US	Border	Allow

NOTE: Geolocation Policies that are not displayed use the Default Policy; To remove policies from the above list, set the respective policy to Use Default Policy

Configure Relationship to other Geolocation Policies

Device Type	Geolocation Policy	Other Device Type
Border	GLP-IN GLP-US	Border

Save Delete Copy Add New

邊界和元素裝置

本節介紹Border and Interior的含義以及如何知道哪個裝置是Border verses Interior。

對CUCM裝置進行分類所使用的術語基於其功能。

- **邊界裝置?**這些裝置允許PSTN訪問或通訊到群集間。
- **內部裝置?**這些裝置是IP語音(VoIP)終端。

典型**邊界**裝置包括：

- 網關 (例如H.323網關)
- 集群間中繼(IGMP)，由網守控制和非網守控制
- H.225中繼
- SIP中繼
- 媒體閘道控制通訊協定(MGCP)連線埠(E1、T1、PRI、BRI、FXO)

典型**內部**裝置包括：

- 電話 (SCCP、SIP、第三方)
- VG224類比電話
- MGCP連線埠(FXS)
- CTI路由點和CTI埠
- Cisco Unity Voice Mail(SCCP)

此邊界和內部源是固定的，基於CUCM裝置，無法在CUCM 7.1版中配置。

允許與拒絕的配置

已完成本文檔中的整個配置示例，且已將企業引數設定為「拒絕」狀態。請參閱圖2。在某些情況下，您可能希望將此值修改為**Allow**，然後設定要拒絕的所有內容，因為設定此配置後，執行此操作會更加困難。

對於此設定，您需要配置以下內容：

- 企業引數。
- 地理位置過濾器。
- 地理位置配置。
- 裝置池。
- IP電話上的地理位置資訊。
- PRI介面（網關為MGCP）上的地理位置資訊。
- 邏輯分割槽中的地理位置策略（邊界/內部允許/拒絕配置）。

相關資訊

- [技術支援與文件 - Cisco Systems](#)