

安装，配置，并且排除故障国际编号方案(INNP)

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简介

本文描述如何安装，配置和排除故障INNP。

Cisco Unified Communications Manager (CUCM)提供默认北美编号方案(NANP)。对于用不同的拨号计划需求的国家(地区)，您能安装Cisco国际拨号方案和使用它创建是特定对您的需求的唯一编号方案。

先决条件

要求

Cisco 建议您了解以下主题：

- 呼叫路由
- 路由过滤器

使用的组件

本文档中的信息根据Cisco Unified CallManager 11.5。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

Background信息

如果安装国家(地区)的国家编号方案在北美外面，请下载包含当前版本的国际拨号计划的思科选项包(COPS)文件。

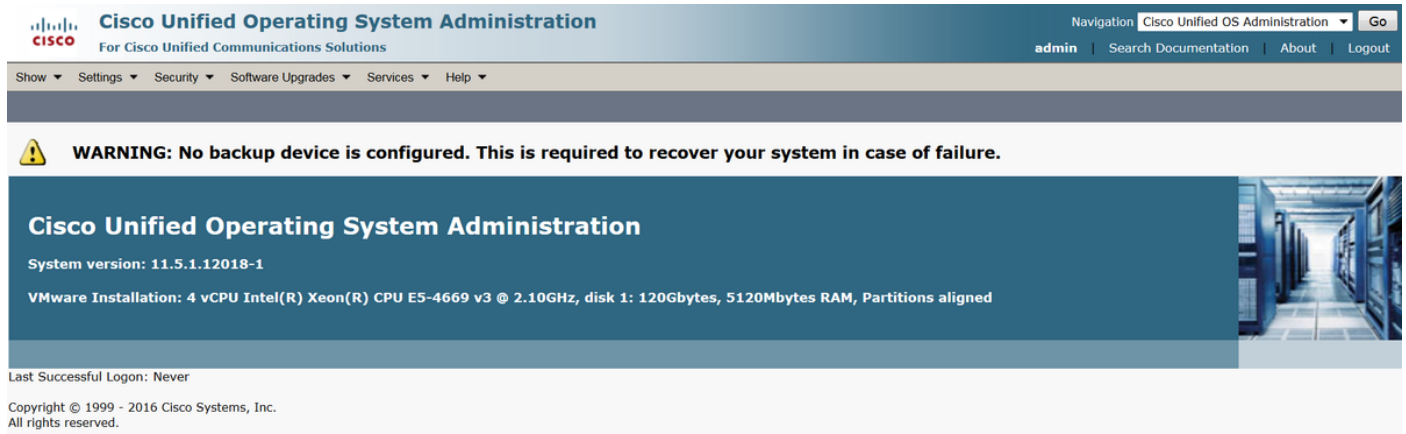
COPS文件使用命名规则并且从Cisco网站是可得到：

<https://software.cisco.com/download/release.html?mdfid=278719042&softwareid=282074292&os=Linux&release=3.1.33-GB&relind=AVAILABLE&rellifecycle=&reltype=latest>

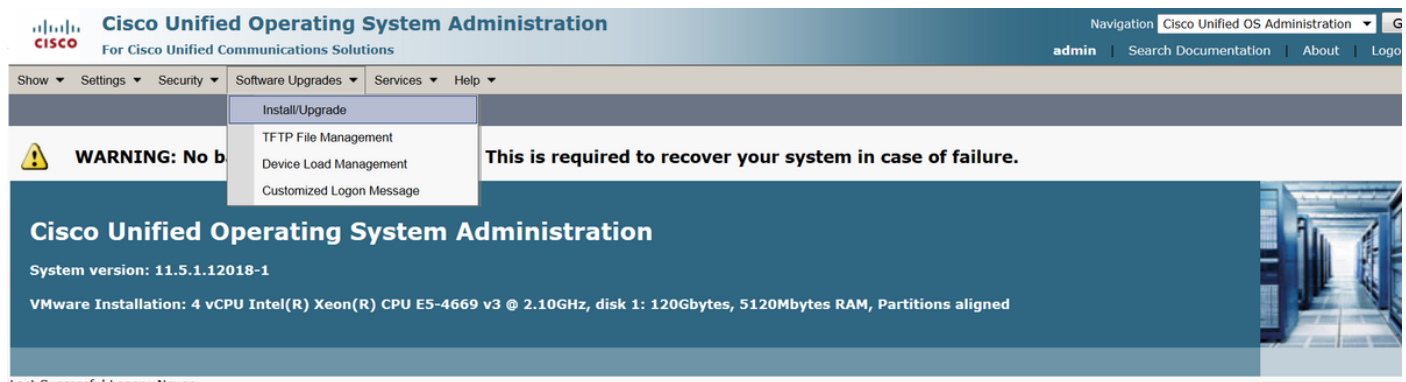
配置

这是安装INNP策略文件的步骤。

步骤1. OS的Admin洛金。



步骤2.如镜像所显示，导航对软件升级>安装/升级，：



选择来源：这里我们使用SFTP服务器执行安装/升级。

来源：远程文件系统

目录：///

服务器：您必须保持SFTP应用程序运行笔记本电脑/桌面IP地址。



用户名：SFTP用户名。

用户密码：SFTP用户的密码。


传输协议：SFTP

Show ▾ Settings ▾ Security ▾ Software Upgrades ▾ Services ▾ Help ▾

Software Installation/Upgrade

 Cancel  Next

Status

 Status: Ready

Software Location

Source* ▾

Directory*

Server*

User Name*

User Password*

Transfer Protocol* ▾



SMTP Server

Email Destination


步骤3.其次选择如镜像所显示的屏幕然后出现。

您必须选择INNP的正确策略文件其次然后选择。

Software Installation/Upgrade

 Cancel  Next

Status

 Status: Ready

Software Location

Options/Upgrades* ▾

Invalid Upgrades

Option Names	Status
10.196.120.25_bulk_tftp.pkcs12	Name does not match any filter pattern.
Publisher_tomcat.pkcs12	Name does not match any filter pattern.
CUCM-PUB_tomcat.pkcs12	Name does not match any filter pattern.

如镜像所显示，您获得屏幕。选择 Next (下一步)。

Software Installation/Upgrade

Cancel Next

Status

Warning: To ensure the integrity of the installation file, please verify the MD5 hash value against the Cisco Systems web site

Warning: To ensure the integrity of the installation file, please verify the SHA512 value against the Cisco Systems web site

Warning: You may need to stop some services before you install a locale. You may then restart those services after you complete the locale installation. Refer to your product-specific online help for locale installation details.

File Checksum Details

File	dp-ffr.3-1-8.IN.k3.cop.sgn
MD5 Hash Value	28:36:a4:74:45:48:32:c3:85:3e:3f:8b:b4:40:21:28
SHA512 Value	

Cancel Next

i *- indicates required item.

步骤4.安装进展中：

Cancel

Installation Status

File	dp-ffr.3-1-8.IN.k3.cop.sgn
Start Time	Wed Dec 28 15:20:08 IST 2016
Status	Running

Installation Log

```

12/28/2016 15:20:08 sd_cancelInstall.sh|Canceling active side processes done
12/28/2016 15:20:08 sd_cancelInstall.sh|Canceling inactive side processes
12/28/2016 15:20:08 sd_cancelInstall.sh|Skipping IDS shared memory clean up since this is a COP
12/28/2016 15:20:09 sd_cancelInstall.sh|Canceling inactive side processes done
[16/12/28_15:20:14] locale_install.sh: Successful untarring of /common/download//dp-ffr.3-1-8.IN.k3.cop

Call manager version is : master-11.5.1.12018-1.i386
cp: cannot stat `/common/download/IDP': No such file or directory

cp: cannot stat `/common/download/INNP.xml': No such file or directory

```

Cancel

步骤5.完整的安装。

Install Another

Installation Status

File	dp-ffr.3-1-8.IN.k3.cop.sgn
Start Time	Wed Dec 28 15:20:08 IST 2016
Status	Complete

Installation Log

```

installCsv rc[0]
enablenotify dsn[DSN=ccm_super]
enablenotify rc[0]
installdb Success[-c]
[16/12/28_15:20:17] locale_install.sh: Publisher: Starting installdb...
/bin/su -l informix -s /bin/sh -c
"source /usr/local/cm/db/dblenv.bash /usr/local/cm ;
source /usr/local/cm/db/informix/local/ids.env ;
nice /usr/local/cm/bin/installdb -x /usr/local/cm/db/xml/xml"

```

Install Another

执行所有节点的同操作在集群。

INNP设置

步骤1:在Cisco Unified CM管理下，请导航到呼叫路由>拨号计划安装程序。



Cisco Unified CM Administration

System version: 11.5.1.12018-1

VMware Installation: 4 vCPU Intel(R) Xeon(R) CPU E5-4669 v3 @ 2.10GHz, disk 1: 120Gbytes, 5120Mbytes RAM, Partitions aligned

User c last logged in to this cluster on Wednesday, December 28, 2016 3:03:54 PM IST, to node 10.106.99.199, from 10.196.120.192 using HTTPS

- System
- Route Filter
- Route/Hunt
- SIP Route Pattern
- Class of Control
- Intercom
- Client Matter Codes
- Forced Authorization Codes
- Emergency Location
- Translation Pattern
- Call Park
- Directed Call Park
- Call Pickup Group
- Directory Number
- Meet-Me Number/Pattern
- Conference Now
- Dial Plan Installer**
- Route Plan Report

步骤2.如镜像所显示，单击**查找**并且选择**INNP**，：

Find and List Dial Plans

2 records found

Dial Plan	Description	Installed Version	System Version
CHNP	Switzerland Numbering Plan	1.1(6)	1.1(6)
INNP	India Numbering Plan	1.1(8)	1.1(8)

步骤3.如镜像所显示，请点击**安装**。

Dial Plan Configuration

Install Uninstall

Dial Plan Information

Dial Plan*

Description

Installed Version

Available Version

Install Uninstall

一旦进行的策略文件安装，重新启动在所有节点的CM服务。

在INNP的子句

First understand the clauses in the INNP:

```
# P: Digit pattern -- PATTERN TAG
# T: Type of Number -- I(nternational) or N(ational)
# W: Network Specific Facilities -- OP or OPXXXX(alternate carriers)
# U: Urgent pattern? (Call extended immediately on match)
```

```
# [2-6]XXXXXX
P: [2-6]XXXXXX          LOCAL-6-DIGIT
```

```
# [2-6]XXXXXXX
P: [2-6]XXXXXXX        LOCAL-7-DIGIT
```

```
# [2-6]XXXXXXXX
P: [2-6]XXXXXXXX        LOCAL-8-DIGIT
```

```
# Long Distance Calls
```

```
# 0+11+[2-6]XXXXXXXX
P: 0                    NATIONAL-ACCESS
P: 11                   AREA-CODE
P: [2-6]XXXXXXXX        LOCAL-8-DIGIT
T: N
```

```
# 0+2[02]+[2-6]XXXXXXXX
P: 0                    NATIONAL-ACCESS
P: 2[02]                AREA-CODE
P: [2-6]XXXXXXXX        LOCAL-8-DIGIT
T: N
```

```
# 0+33+[2-6]XXXXXXXX
P: 0                    NATIONAL-ACCESS
P: 33                   AREA-CODE
P: [2-6]XXXXXXXX        LOCAL-8-DIGIT
T: N
```

```
# Services, Mobile & Non Geographic Calls
```

```
# 100
P: 100                  SERVICE
U: Y
```

```
# 101
P: 101                  SERVICE
U: Y
```

```
# 80[01589]X+XXX+XXX
P: 80[01589]X          LOCAL-PREFIX-8-MOBILE
P: XXX                 MOBILE-ACCESS
P: XXX                 MOBILE-SUBSCRIBER
T: N
```

```
# 81XX+XXX+XXX
P: 81XX                LOCAL-PREFIX-8-MOBILE
P: XXX                 MOBILE-ACCESS
P: XXX                 MOBILE-SUBSCRIBER
```

T: N

8128+XXX+XXX

P: 8128 LOCAL-PREFIX-8-MOBILE

P: XXX MOBILE-ACCESS

P: XXX MOBILE-SUBSCRIBER

T: N

8149+XXX+XXX

P: 8149 LOCAL-PREFIX-8-MOBILE

P: XXX MOBILE-ACCESS

P: XXX MOBILE-SUBSCRIBER

T: N

欲了解更详细的信息请在链路之下请参考为INNP子句：

<http://www.cisco.com/web/software/282074292/122537/INNP.txt>

根据上述信息我们将创建路由过滤器。

示例：

您的需求是创建只允许本地呼叫的本地呼叫的过滤器。

方案：分机3001必须呼叫到开始与7,8和9的本地移动编号。

分机3001必须呼叫本地输送路线编号(8位)。

分机3001必须阻塞STD和国家呼叫拨号。

步骤1.创建新的分区- PT-LOCAL

导航对**控制>Partition**呼叫路由>中集集团。

Partition Configuration



Save



Delete



Reset



Apply Config



Add New

Status



Status: Ready

Partition Information

Name*

Description

Time Schedule

Time Zone



Originating Device



Specific Time Zone

Save

Delete

Reset

Apply Config

Add New



*- indicates required item.

步骤2.创建新的CSS – CSS本地


导航对**控制>呼叫搜索空间呼叫路由>中集集团**。

在此CSS中，您保持PT-LOCAL分区。

Calling Search Space Configuration

 Save  Delete  Copy  Add New

Status

 Status: Ready

Calling Search Space Information

Name*
Description

Route Partitions for this Calling Search Space

Available Partitions**
Global Learned E164 Numbers
Global Learned E164 Patterns
Global Learned Enterprise Numbers
Global Learned Enterprise Patterns

▼ ▲

Selected Partitions

▼ ▲

步骤3.创建路由器过滤器。

导航到呼叫路由>路由过滤器。

点击Add新建，如镜像所显示：

Find and List Route Filters

 Add New

Route Filter

Find Route Filter where Route Filter Name
  


No active query. Please enter your search criteria using the options above.

如镜像所显示，请选择编号方案。

Route Filter Configuration




Status

 Status: Ready

Route Filter Information

Numbering Plan*

Next

 *- indicates required item.

这些过滤器根据需求创建。

Route Filter Name*	Local
Numbering Plan	India Numbering Plan
Clause	(LOCAL-PREFIX-7-MOBILE EXISTS AND MOBILE-ACCESS EXISTS AND MOBILE-SUBSCRIBER EXISTS) OR (LOCAL-PREFIX-8-MOBILE EXISTS AND MOBILE-ACCESS EXISTS AND MOBILE-SUBSCRIBER EXISTS) OR (LOCAL-PREFIX-9-MOBILE EXISTS AND MOBILE-ACCESS EXISTS AND MOBILE-SUBSCRIBER EXISTS) OR (LOCAL-8-DIGIT EXISTS)

Clause Information

To add a clause within this Route Filter, click Add Clause.

LOCAL-PREFIX-7-MOBILE

AND

MOBILE-ACCESS

AND

MOBILE-SUBSCRIBER

OR

LOCAL-PREFIX-8-MOBILE

AND

MOBILE-ACCESS

AND

MOBILE-SUBSCRIBER

OR

LOCAL-PREFIX-8-MOBILE	EXISTS	▼	AND
MOBILE-ACCESS	EXISTS	▼	AND
MOBILE-SUBSCRIBER	EXISTS	▼	
OR			
Edit Clause	Remove Clause		
LOCAL-PREFIX-9-MOBILE	EXISTS	▼	AND
MOBILE-ACCESS	EXISTS	▼	AND
MOBILE-SUBSCRIBER	EXISTS	▼	
OR			
Edit Clause	Remove Clause		
LOCAL-8-DIGIT	EXISTS	▼	

步骤4. 创建路由模式。

导航对呼叫路由>路由/寻线>路由模式。

Pattern Definition

Route Pattern*	9.@	Here we have created the 9.@ pattern
Route Partition	PT-LOCAL	Keep the PT-LOCAL partition
Description		
Numbering Plan*	INNP	Select the numbering plan
Route Filter	Local	Select the Route Filter created for Local calling.
MLPP Precedence*	Default	
<input type="checkbox"/> Apply Call Blocking Percentage		
Resource Priority Namespace Network Domain	< None >	
Route Class*	Default	
Gateway/Route List*	Chandra-CUCM	(Edit)
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern No Error	
Call Classification*	OffNet	
External Call Control Profile	< None >	
<input type="checkbox"/> Allow Device Override	<input checked="" type="checkbox"/> Provide Outside Dial Tone	<input type="checkbox"/> Allow Overlap Sending
	<input type="checkbox"/> Urgent Priority	

Connected Party Transformations

Connected Line ID Presentation*	Default
Connected Name Presentation*	Default

Called Party Transformations

Discard Digits	< None >
Called Party Transform Mask	
Prefix Digits (Outgoing Calls)	
Called Party Number Type*	Cisco CallManager
Called Party Numbering Plan*	Cisco CallManager

ISDN Network-Specific Facilities Information Element

Network Service Protocol	-- Not Selected --	
Carrier Identification Code		
Network Service	Service Parameter Name	Service Parameter Value
-- Not Selected --	< Not Exist >	

请保证测试分机有正确CSS (CSS本地)。

Directory Number* Urgent Priority

Route Partition

Description

Alerting Name

ASCII Alerting Name

External Call Control Profile

Allow Control of Device from CTI

Line Group [Edit Line Group](#)

Associated Devices
 [Edit Device](#)
[Edit Line Appearance](#)

Dissociate Devices

Directory Number Settings

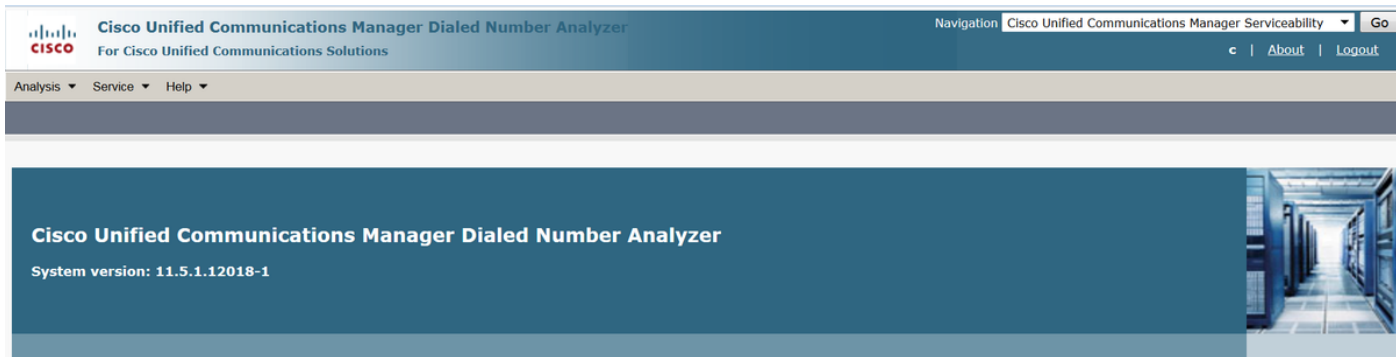
Voice Mail Profile (Choose <None> to use system default)

Calling Search Space

验证

配置的验证：

步骤1:在拨号号码分析器下，请导航到分析>电话。



输入扩展名3001并且点击查找。

Analysis Service Help

Find and List Phones

Status
i 1 records found

Search Options
 Find Phone where: Directory Number begins with: 3001 [Find](#) Search Within Results
 Select item or enter search text

Search Results


Device Name(Line)	Description	Device Pool	Extension	Partition	Device Protocol	Status	IP Address
7841 SEP00E16DBA5FD5	Auto 3003	HQ	3001	PT-CUG	SIP	Registered	10.106.99.249

Rows per Page 50

- Device Information (Model = Cisco 7841)

Registration	Registered with Cisco Unified CallManager 10.106.99.199
IP Address	10.106.99.249
MAC Address	00E16DBA5FD5
Device Name	00E16DBA5FD5
Description	Auto 3003
Owner User ID	cisco3
Device Pool	HQ
Call Classification	OnNet
Calling Search Space	None
AAR Calling Search Space	None
Media Resource Group List	None
Device Time Zone	Etc/GMT

Association Information

-  Line [1] - 3001 in PT-CUG
-  Line [2] - 3006 in PT-CUG
-  Line [3] - 8888 (no partition)

- Analyzer Input

Dialed Digit Settings

- Directory URI
- Dialed Digits

第二步：您点击如镜像所显示，请执行分析，页显现所有详细信息并且更正过滤器，：

Cisco Unified Communications Manager Dialed Number Analyzer Results

Expand All

Collapse All

Results Summary

Calling Party Information

- **Dialed Digits** = 944262527
- **Match Result** = RouteThisPattern

Matched Pattern Information

- **Pattern** = 9.@
- **Partition** = PT-LOCAL
- **Time Schedule** =
- **Called Party Number** = 944262527
- **Time Zone** = Etc/GMT
- **End Device** = Chandra-CUCM
- **Call Classification** = OffNet
- **InterDigit Timeout** = NO
- **Device Override** = Disabled
- **Outside Dial Tone** = NO

Call Flow

Route Pattern :Pattern= 9.@

- **Positional Match List** = 9:44262527
- **DialPlan** = India Numbering Plan

Route Filter

- **Filter Name** = Local
- **Filter Clause** = (LOCAL-PREFIX-7-MOBILE EXISTS AND MOBILE-ACCESS EXISTS AND MOBILE-SUBSCRIBER EXISTS) OR (LOCAL-PREFIX-8-MOBILE EXISTS AND MOBILE-ACCESS EXISTS AND MOBILE-SUBSCRIBER EXISTS) OR (LOCAL-PREFIX-9-MOBILE EXISTS AND MOBILE-ACCESS EXISTS AND MOBILE-SUBSCRIBER EXISTS) OR (LOCAL-8-DIGIT EXISTS)
- **Require Forced Authorization Code** = No
- **Authorization Level** = 0

故障排除

已配置的路由过滤器良好工作，但是有一个问题。如果拨号有两位数区域代码的STD号码呼叫虽则请去。

示例：如果拨号号码080 26252728，它路由呼叫用本地过滤器。

Cisco Unified Communications Manager Dialed Number Analyzer Results

Results Summary

Calling Party Information

- **Dialed Digits** = 908026252728
- **Match Result** = RouteThisPattern

Matched Pattern Information

- **Pattern** = 9.@
- **Partition** = PT-LOCAL
- **Time Schedule** =
- **Called Party Number** = 908026252728
- **Time Zone** = Etc/GMT
- **End Device** = Chandra-CUCM
- **Call Classification** = OffNet
- **InterDigit Timeout** = NO
- **Device Override** = Disabled
- **Outside Dial Tone** = NO

Call Flow

Route Pattern :Pattern= 9.@

- **Positional Match List** = 9:0:80:26252728
- **DialPlan** = India Numbering Plan

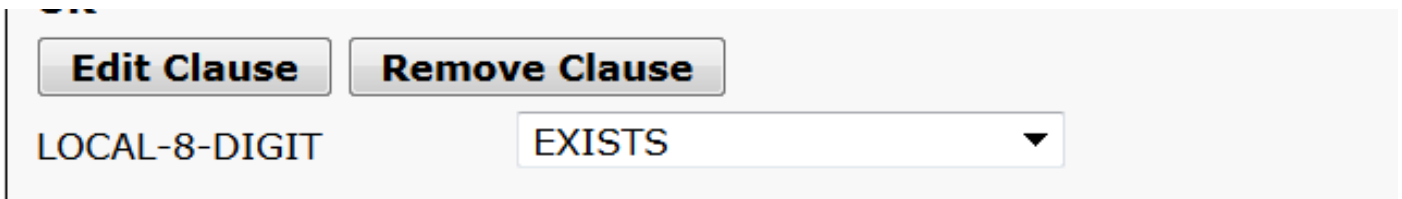
Route Filter

- **Filter Name** = Local
- **Filter Clause** = (LOCAL-PREFIX-7-MOBILE EXISTS AND MOBILE-ACCESS EXISTS AND MOBILE-SUBSCRIBER EXISTS) OR (LOCAL-PREFIX-8-MOBILE EXISTS AND MOBILE-ACCESS EXISTS AND MOBILE-SUBSCRIBER EXISTS) OR (LOCAL-PREFIX-9-MOBILE EXISTS AND MOBILE-ACCESS EXISTS AND MOBILE-SUBSCRIBER EXISTS) OR (LOCAL-8-DIGIT EXISTS)

在后的原因是呼叫Local-8-digit编号的允许，并且匹配除了区域代码的8位。

那么此处您在过滤器必须明确地定义阻塞在本地过滤器的区域代码。

步骤1.导航到路由器过滤器并且编辑本地8位的条款。



LOCAL-8-DIGIT

步骤2.如镜像所显示，选择区域代码DOES-NOT-EXIST并且保存过滤器，：

– Clause Information



AREA-CODE

过滤器看起来象如下：

Edit Clause	Remove Clause		
AREA-CODE	DOES-NOT-EXIST		AND
LOCAL-8-DIGIT	EXISTS		

步骤3.执行STD编号的DNA与两位数区域代码。

Cisco Unified Communications Manager Dialed Number Analyzer Results

- ▼ **Results Summary**
 - ▶ **Calling Party Information**
 - **Dialed Digits** = 908026252728
 - **Match Result** = BlockThisPattern
 - **Route Block Cause** = Unallocated Number
 - **Called Party Number** =
 - ▼ **Matched Pattern Information**
 - **Pattern** =
 - **Partition** =
 - **Pattern Type** =
 - **Time Zone** = Etc/GMT
 - **Outside Dial Tone** = NO
- ▼ **Call Flow**
 - **Note: Information Not Available**
- ▼ **Alternate Matches**
 - **Note: Information Not Available**

注意：您必须明确地阻塞没有要求的模式。