

Internationaal nummerplan installeren, configureren en probleemoplossing (INNP)

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Inleiding

Dit document beschrijft hoe u INP kunt installeren, configureren en oplossen van problemen.

Cisco Unified Communications Manager (CUCM) biedt een standaard Noord-Amerikaans nummerplan (NANP). Voor landen met verschillende vereisten voor kiesschema's kunt u een Cisco internationaal kiesschema installeren en het gebruiken om een uniek nummerplan te maken dat specifiek is voor uw vereisten.

Voorwaarden

Vereisten

Cisco raadt kennis van de volgende onderwerpen aan:

- Oproeroutering
- Routerfilter

Gebruikte componenten

De informatie in dit document is gebaseerd op Cisco Unified CallManager 11.5.

De informatie in dit document is gebaseerd op de apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als uw netwerk live is, moet u de potentiële impact van elke opdracht begrijpen.

Informatie over back-up

Als u een nationaal nummerplan installeert voor landen buiten Noord-Amerika, download u het bestand Cisco Optie Package (COP) dat de internationale kiesschema's voor de huidige release bevat.

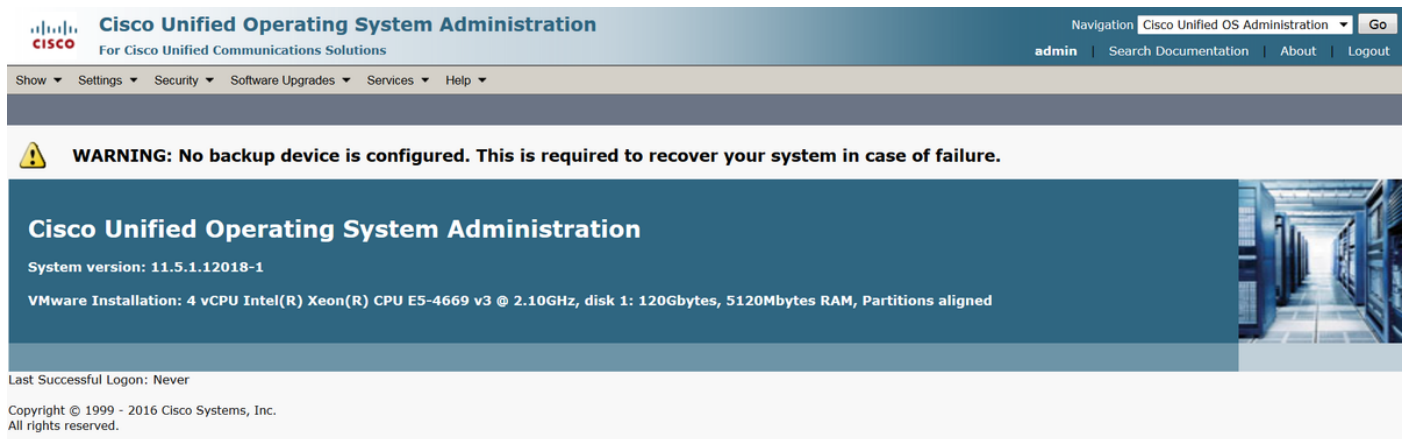
Het COP-bestand gebruikt de naamgevingsconventie en is beschikbaar op de Cisco-website:

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

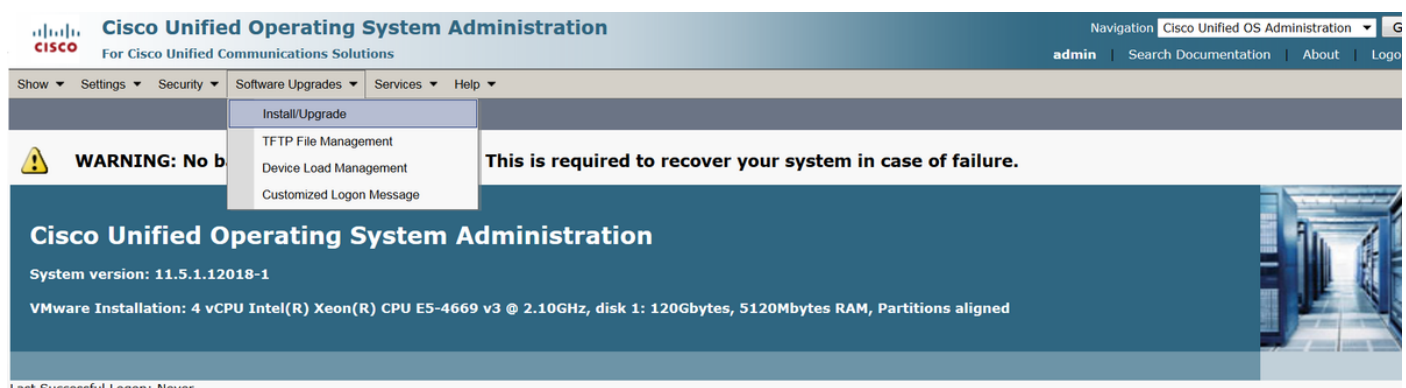
Configureren

Dit is de procedure om het INNEN-bestand te installeren.

Stap 1. Meld u aan bij OS-beheerder.



Stap 2. navigeren naar **software-upgrade > Installatie/upgrade**, zoals in de afbeelding:



Selecteer de bron: Hier gebruiken we de SFTP-server om de installatie/upgrade uit te voeren.

Bron: Afstandsfiltersysteem

Map: /

Server: Hier moet u de SFTP-toepassing houden met een laptop/desktop IP-adres.

Gebruikersnaam: SFTP-gebruikersnaam.

Wachtwoord voor gebruiker: Wachtwoord van de SFTP-gebruiker.

Transfer Protocol: SFTP

Software Installation/Upgrade

Cancel Next

Status

Status: Ready

Software Location

Source* Remote Filesystem

Directory* /

Server* 192.168.0.20

User Name* admin

User Password* [masked]

Transfer Protocol* SFTP

SMTP Server

Email Destination

Cancel Next

Stap 3. Selecteer **Volgende** en vervolgens het scherm zoals in de afbeelding weergegeven.

U moet het juiste politiebestand voor INPUT selecteren en vervolgens **Volgende** selecteren.

Software Installation/Upgrade

Cancel Next

Status

Status: Ready

Software Location

Options/Upgrades* dp-ffr.3-1-8.IN.k3.cop.sgn

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.

U krijgt scherm zoals in de afbeelding wordt getoond. Selecteer **Volgende**.

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.

Stap 4. De installatie is gestart:

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

Stap 5. Installatie voltooid.

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

Voer dezelfde handeling uit voor alle knooppunten in de cluster.

Instellen van INNP

Stap 1. Onder **Cisco Unified CM-beheer**, navigeer naar **Oproeproutering > installatieprogramma**

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation Cisco Unified CM Administration Go
Search Documentation About Logout

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

WARNING: No backup device is configured. This is required to recover your system in case of failure.

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

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Stap 2. Klik op **Zoeken** en selecteer **INP**, zoals in de afbeelding:

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

Find and List Dial Plans

Status
2 records found

Dial Plan (1 - 2 of 2) Rows

Find Dial Plan where Dial Plan begins with Find Clear Filter

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)

Stap 3. Zoals in de afbeelding, klikt u op in **Installeer**.

Dial Plan Configuration



Install



Uninstall

Dial Plan Information

Dial Plan*	<input type="text" value="INNP"/>
Description	<input type="text" value="India Numbering Plan"/>
Installed Version	<input type="text" value="1.1(8)"/>
Available Version	<input type="text" value="1.1(8)"/>

Install

Uninstall

Nadat het politieb Bestand is geïnstalleerd, start u de **CM-service** opnieuw op alle knooppunten.

Clauses in INNP

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

```

Raadpleeg voor meer informatie de onderstaande link voor INNP-clausules:

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

Op basis van bovenstaande informatie zullen we het routesfilter maken.

Voorbeeld:

Uw vereisten zijn het maken van een lokaal oproepfilter dat alleen lokaal bellen toestaat.

Scenario: Verlenging 3001 moet worden gebeld op het mobiele nummer van de lokale dienst, te beginnen met 7,8 en 9.

Uitbreiding 3001 moet plaatselijk landlijnnummer (8 cijfers) bellen.

Extension 3001 moet de STD- en nationale gesprekslijnen blokkeren.

Stap 1. Maak een nieuwe partitie - PT-LOKAAL

Navigeer om **routing > klasse van controle >Partitie te bellen**.

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.

Stap 2. Maak nieuwe CSS - Local


Navigeer in om routing > Klasse van controle > Roepende zoekruimte te bellen.

In deze CSS houdt u PT-LOCAL partitie.

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

▼ ▲

Stap 3. Maak een routerfilter.

Navigeer in op **Oproeproutering > Routerfilter**.

Klik op **Add New**, zoals in de afbeelding:

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.

Selecteer het nummerplan zoals in de afbeelding.

Route Filter Configuration

 Next

Status

 Status: Ready

Route Filter Information

Numbering Plan*

 *- indicates required item.

Deze filters worden gecreëerd volgens de vereiste.

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.

<input type="button" value="Edit Clause"/>	<input type="button" value="Remove Clause"/>	
LOCAL-PREFIX-7-MOBILE	<input type="text" value="EXISTS"/>	AND
MOBILE-ACCESS	<input type="text" value="EXISTS"/>	AND
MOBILE-SUBSCRIBER	<input type="text" value="EXISTS"/>	
OR		
<input type="button" value="Edit Clause"/>	<input type="button" value="Remove Clause"/>	
LOCAL-PREFIX-8-MOBILE	<input type="text" value="EXISTS"/>	AND
MOBILE-ACCESS	<input type="text" value="EXISTS"/>	AND
MOBILE-SUBSCRIBER	<input type="text" value="EXISTS"/>	
OR		
<input type="button" value="Edit Clause"/>	<input type="button" value="Remove Clause"/>	

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	▼	

Stap 4. Maak een routepadroon.

Navigeer in op Oproeroutering > Route/hunting > Route Pattern.

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 >	

Zorg ervoor dat de testextensie correcte CSS (CSS-Local) heeft.

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

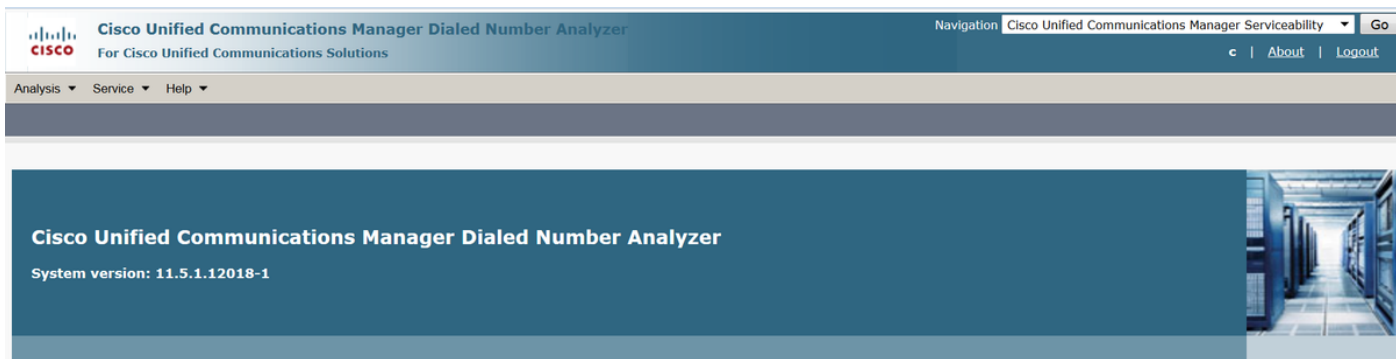
Voice Mail Profile (Choose <None> to use system default)

Calling Search Space

Verifiëren

Verificatie van de configuratie:

Stap 1. Onder **Dial Number Analyzer**, navigeer naar **Analysis > telefoons**.



Voer de extensie 3001 in en klik op **Zoeken**.

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

Stap 2. Aangezien u op **Do Analysis** klikt, wordt er een pagina weergegeven met alle details en het juiste filter, zoals in de afbeelding:

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

Problemen oplossen

Het geconfigureerde routefilter werkt prima, maar heeft één probleem. Als u het STD-nummer met twee-cijferige gebiedscode hebt geselecteerd, gaat het gesprek ook.

Voorbeeld: Als u nummer 080 26252728 instelt, wordt de oproep met een lokaal filter verzonden.

Cisco Unified Communications Manager Dialed Number Analyzer Results

Expand All Collapse All

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)

De reden achter deze beslissing is dat het aanroepen van **een lokaal-8-cijferig** nummer is toegestaan en overeenkomt met het 8-cijferig getal exclusief de gebiedscode.

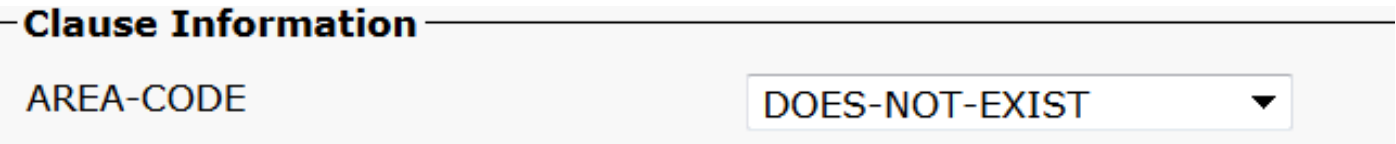
Hier moet u expliciet in het filter definiëren om de gebiedscode in het lokale filter te blokkeren.

Stap 1. Navigeer naar **routerfilter** en **bewerk clause** voor **lokaal 8 cijfer**.



...
Edit Clause Remove Clause
LOCAL-8-DIGIT EXISTS

Stap 2. Selecteer het **GEBIEDSCODE DAT NIET BESTAAT** en **Save** the filter, zoals in de afbeelding:



– Clause Information
AREA-CODE DOES-NOT-EXIST

Het filter ziet er zo uit:

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

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

Stap 3. Voer het DNA voor STD-nummer uit met twee cijfers voor een gebiedscode.

Cisco Unified Communications Manager Dialed Number Analyzer Results

Expand All Collapse All

- ▼ **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**

Opmerking: U moet het patroon expliciet blokkeren, omdat dit niet nodig is.