

# Ejemplo de configuración del CAMBIO DE SIGNO

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## Introducción

Este documento describe la muestra CLI y la Configuración del GUI de Cisco unificó el proxy del SORBO (CAMBIO DE SIGNO) con los debugs que hacen juego cuatro diversos escenarios del ruteo de llamadas.

## Prerrequisitos

### Requisitos

Cisco recomienda que usted tiene conocimiento básico de estos temas:

- Session Initiation Protocol (SIP)
- Cisco unificó el proxy del SORBO (el CAMBIO DE SIGNO)

### Componentes Utilizados

La información en este documento se basa en el CAMBIO DE SIGNO.

La información que contiene este documento se creó a partir de los dispositivos en un ambiente

de laboratorio específico. Todos los dispositivos que se utilizan en este documento se pusieron en funcionamiento con una configuración verificada (predeterminada). Si la red está funcionando, asegúrese de haber comprendido el impacto que puede tener cualquier comando.

## Configurar

Esta sección describe la configuración de cuatro escenarios del ruteo de llamadas.

Nota: Use la [Command Lookup Tool](#) ([clientes registrados solamente](#)) para obtener más información sobre los comandos usados en esta sección.

### Escenario 1

Flujo de llamada: **Teléfono del IP 1 -- CME -- SORBO -- CAMBIO DE SIGNO -- SORBO -- CUCM -- Teléfono del IP 2**

Marque 408 202 2102 del teléfono del IP 1 registrado al CallManager expreso (CME) para alcanzar el teléfono del IP 2 registrado a las Comunicaciones unificadas de Cisco el administrador (CUCM) vía el CAMBIO DE SIGNO.

El CME actúa como Public Switched Telephone Network (PSTN) en este escenario.

#### 1. El SORBO INVITA viene al CAMBIO DE SIGNO del CME.

```
[DsTransportListener-2] DEBUG 2013.02.27 19:15:59:245 DsSipLlApi.Wire -
Received UDP packet on 14.128.100.169:5060 ,source 14.128.100.150:57878
INVITE sip:4082022102@14.128.100.169:5060 SIP/2.0
Via: SIP/2.0/UDP 14.128.100.150:5060;branch=z9hG4bK21F2555
Remote-Party-ID: "4082025555" <sip:4082025555@14.128.100.150>;
party=calling;screen=yes;privacy=off
From: "4082025555" <sip:4082025555@14.128.100.150>;tag=81D7430C-1D2
To: <sip:4082022102@14.128.100.169>
Date: Wed, 27 Feb 2013 19:15:59 GMT
Call-ID: F3E5F396-804811E2-9818EC62-1B7185EE@14.128.100.150
Supported: 100rel,timer,resource-priority,replaces,sdp-anat
Min-SE: 1800
Cisco-Guid: 4091813662-2152206818-2551376994-0460424686
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER,
SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 101 INVITE
Timestamp: 1361992559
Contact: <sip:4082025555@14.128.100.150:5060>
Expires: 180
Allow-Events: telephone-event
Max-Forwards: 69
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 410

v=0
o=CiscoSystemsSIP-GW-UserAgent 1007 629 IN IP4 14.128.100.150
s=SIP Call
c=IN IP4 14.128.100.150
t=0 0
```

```
m=audio 16930 RTP/AVP 18 101
c=IN IP4 14.128.100.150
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
m=video 17954 RTP/AVP 97
c=IN IP4 14.128.100.150
b=TIAS:1000000
a=rtpmap:97 H264/90000
a=fmtp:97 profile-level-id=42801E;packetization-mode=0
```

--- end of packet ---

## 2. La llamada se valida a la configuración de la red (Red-PSTN) que hace juego.

### CLI

```
sip listen Net-PSTN udp 14.128.100.169 5060

!
sip network Net-PSTN standard
no non-invite-provisional
allow-connections
retransmit-count invite-client-transaction 3
retransmit-count invite-server-transaction 5
retransmit-count non-invite-client-transaction 3
retransmit-timer T1 500
retransmit-timer T2 4000
retransmit-timer T4 5000
retransmit-timer TU1 5000
retransmit-timer TU2 32000
retransmit-timer clientTn 64000
retransmit-timer serverTn 64000
tcp connection-setup-timeout 1000
udp max-datagram-size 1500
end network
!
```

### GUI

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250
conditions.RegexCondition - inNetwork='Net-PSTN'
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250
conditions.RegexCondition - IN_NETWORK: Net-PSTN
```

## 3. Se ejecuta la secuencia de la PRE-normalización.

### CLI

```
trigger pre-normalization sequence 1 policy CUCM-Prefix-408
condition TC-from-CUCM GUI
```

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 util.Normalization -
Entering Normalization(moduleRequest:pre-normalize)
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.RegexCondition -
inNetwork='Net-PSTN'
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.RegexCondition -
IN_NETWORK: Net-PSTN
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.AbstractRegexCondition -
pattern(^\QNet-CUCM\E$), toMatch(Net-PSTN) returning false
[REQUESTI.12] INFO 2013.02.27 19:15:59:250 util.Normalization -
skipping pre-normalize, due to either no trigger is configured or triggers
```

did not evaluate to true or is configured to by-pass

#### 4. Se corresponde con la condición del activador (TC-de-PSTN).

##### CLI

```
!  
trigger condition TC-from-PSTN  
sequence 1  
in-network ^\QNet-PSTN\E$  
end sequence  
end trigger condition  
!
```

##### GUI

##### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.RegexCondition -  
inNetwork='Net-PSTN'  
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.RegexCondition -  
IN_NETWORK: Net-PSTN  
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.AbstractRegexCondition -  
pattern(^QNet-PSTN\E$), toMatch(Net-PSTN) returning true
```

#### 5. La configuración del activador de la encaminamiento se marca para encontrar la directiva de la ruta (Directiva-a-CUCM) esa las coincidencias basadas en la condición del activador (TC-de-PSTN).

##### CLI

```
trigger routing sequence 1 policy Policy-to-CUCM condition TC-from-PSTN
```

##### GUI

##### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:251 triggers.ModuleTrigger -  
ModuleTrigger.eval() action<Policy-to-CUCM> actionParameter<>  
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:251 triggers.ModuleTrigger -  
ModuleTrigger.eval() got the policy, executing it ...
```

#### 6. La configuración de la directiva de la ruta (Directiva-a-CUCM) se marca para encontrar la tabla de ruta (RT-CUCM) esa las coincidencias.

##### CLI

```
!  
policy lookup Policy-to-CUCM  
sequence 100 RT-CUCM request-uri uri-component user  
modify-key 4082022102 1111  
rule exact  
end sequence  
end policy  
!
```

##### GUI

##### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:251 nrs.XCLPrefix -  
Entering getKeyValue()  
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:251 nrs.FieldSelector -  
getUriPart: URI - sip:4082022102@14.128.100.169:5060 part 6  
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:251 nrs.FieldSelector -  
Requested field 45  
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:251 nrs.FieldSelector -
```

```

Returning key 4082022102
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:251 nrs.FieldSelector -
Retrieved Modifier RegexModifier: match= 4082022102, replace=
1111, ignore case= false
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:251 nrs.FieldSelector -
Input field: 4082022102
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:251 nrs.FieldSelector -
Modified field: 1111
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 nrs.XCLPrefix -
Leaving getKeyValue()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 modules.XCLLookup -
table=RT-CUCM, key=1111
[REQUESTI.12] INFO 2013.02.27 19:15:59:252 modules.XCLLookup -
table is RT-CUCM

```

## 7. La configuración de la tabla de ruta (RT-CUCM) se marca para encontrar el destino de la blanco (SG-CUCM.ajeet.com).

### CLI

```

!
route table RT-CUCM
key 1111 target-destination SG-CUCM.ajeet.com Net-CUCM
end route table
!

```

### GUI

### DEPURAR

```

[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 routingtables.RoutingTable -
Entering lookup()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 routingtables.RoutingTable -
Looking up 1111 in table RT-CUCM with rule exact and modifiers=none
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 routingtables.RoutingTable -
Entering applyModifiers()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 routingtables.RoutingTable -
Leaving applyModifiers(), returning 1111
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 routingtables.RoutingTable -
Leaving lookup()
[REQUESTI.12] INFO 2013.02.27 19:15:59:252 nrs.XCLPrefix -
NRS Routing decision is: RouteTable:RT-CUCM, RouteKey:1111,
TargetDestination:SG-CUCM.ajeet.com, Network:Net-CUCM
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 loadbalancer.LBFactory -
Entering createLoadBalancer()
[REQUESTI.12] INFO 2013.02.27 19:15:59:252 loadbalancer.LBFactory -
lbtype is 3(call-id)
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 loadbalancer.LBFactory -
Leaving createLoadBalancer()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 nrs.XCLPrefix -
Stored NRSAlgResult=isFound=true, isFailure=false, Response=-1,
Routes=[Ruri: SG-CUCM.ajeet.com, Route: null, Network: Net-CUCM,
q-value=1.0radvance=[502, 503]], PolicyAdvance=null
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 nrs.NRSAlgResult -
set policyAdvance as specified in route=RouteTable:RT-CUCM, RouteKey:1111,
TargetDestination:SG-CUCM.ajeet.com, Network:Net-CUCM
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:252 nrs.NRSAlgResult -
no policyAdvance specified in route
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:253 nrs.NRSAlgResult -
set policyAdvance as specified in algorithm={lookupkeymodifier=
[ RegexModifier: match= 4082022102, replace= 1111, ignore case= false],
lookuprule=0, lookupfield=45, lookuplength=-1, lookuptable=RT-CUCM,
sequence=100, algorithm=1}
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:253 nrs.NRSAlgResult -

```

no policyAdvance specified in algorithm

## 8. Se ejecuta la secuencia de la Poste-normalización.

Nota: Este escenario no utiliza la Poste-normalización, que es porqué la Poste-normalización se salta en los debugs.

### CLI

```
trigger post-normalization sequence 1 policy
UC520-Four-to-Full condition TC-UC520-to-PSTN
```

### GUI

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 util.Normalization -
Entering Normalization(moduleRequest:post-normalize)
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 conditions.RegexCondition -
inNetwork='Net-PSTN'
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 conditions.RegexCondition -
IN_NETWORK: Net-PSTN
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 conditions.AbstractRegexCondition -
pattern(^\\QNet-From-UC520\\E$), toMatch(Net-PSTN) returning false
[REQUESTI.12] INFO 2013.02.27 19:15:59:254 util.Normalization -
skipping post-normalize, due to either no trigger is configured or triggers
did not evaluate to true or is configured to by-pass
```

## 9. La configuración del grupo de servidores se marca para encontrar la dirección IP del elemento, y la llamada se rutea al posible de la mejor ruta basado en el Q-valor y la configuración de la ponderación.

### CLI

```
!
server-group sip group SG-CUCM.ajeet.com Net-CUCM
element ip-address 14.128.64.191 5060 udp q-value 1 weight 50
element ip-address 14.128.64.192 5060 udp q-value 1.0 weight 100
failover-resp-codes 503
lbtype global
ping
end server-group
!
```

### GUI

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 loadbalancer.LBFactory -
Entering createLoadBalancer()
[REQUESTI.12] INFO 2013.02.27 19:15:59:254 loadbalancer.LBFactory -
lbtype is 0(global)
[REQUESTI.12] INFO 2013.02.27 19:15:59:254 loadbalancer.LBFactory -
Default lbtype is 3(call-id)
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 loadbalancer.LBFactory -
Leaving createLoadBalancer()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 loadbalancer.LBBase -
Entering getServer()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 loadbalancer.LBBase -
Entering initializeDomains()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 servergroups.
ServerGlobalStateWrapper - Net-CUCM:14.128.64.191:5060:1
numTries=2--->isServerAvailable(): true
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 servergroups.
ServerGlobalStateWrapper - Net-CUCM:14.128.64.192:5060:1
numTries=2--->isServerAvailable(): true
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:255 servergroups.AbstractNextHop -
```

```

Entering compareDomainNames()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:255 servergroups.AbstractNextHop -
Leaving compareDomainNames()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:255 loadbalancer.LBBase -
Leaving initializeDomains()
[REQUESTI.12] INFO 2013.02.27 19:15:59:255 loadbalancer.LBHashBased -
list of elements in order on which load balancing is done :
{reSgElementWeight=50, reSgElementSgName=SG-CUCM.ajeet.com,
reSgElementTransport=UDP, reSgElementQValue=1.0, reSgElementPort=5060,
reSgElementHost=14.128.64.191}, {reSgElementWeight=100, reSgElementSgName=
SG-CUCM.ajeet.com, reSgElementTransport=UDP, reSgElementQValue=1.0,
reSgElementPort=5060, reSgElementHost=14.128.64.192},
[REQUESTI.12] INFO 2013.02.27 19:15:59:255 loadbalancer.LBHashBased -
Hashing on F3E5F396-804811E2-9818EC62-1B7185EE@14.128.100.150
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:255 loadbalancer.DsHashAlgorithm -
Entering selectIndex()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:255 loadbalancer.DsHashAlgorithm -
Leaving selectIndex()
[REQUESTI.12] INFO 2013.02.27 19:15:59:255 loadbalancer.LBHashBased -
Index selected 0
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:255 servergroups.AbstractNextHop -
Entering compareDomainNames()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:255 servergroups.AbstractNextHop -
Leaving compareDomainNames()
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:255 loadbalancer.LBBase -
Server group SG-CUCM.ajeet.com selected {reSgElementWeight=50,
reSgElementSgName=SG-CUCM.ajeet.com, reSgElementTransport=UDP,
reSgElementQValue=1.0, reSgElementPort=5060, reSgElementHost=14.128.64.191}
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:255 loadbalancer.LBBase -
Leaving getServer()

```

## 10. El SORBO INVITA se envía al elemento seleccionado.

```

[REQUESTI.12] DEBUG 2013.02.27 19:15:59:256 DsSipLlApi.Wire -
Sending UDP packet on 14.128.100.169:32771, destination 14.128.64.191:5060
INVITE sip:4082022102@SG-CUCM.ajeet.com SIP/2.0
Via: SIP/2.0/UDP 14.128.100.169:5061;branch=z9hG4bK.ToYJFeKMyfZGySv.gcLjg~~231
Via: SIP/2.0/UDP 14.128.100.150:5060;branch=z9hG4bK21F2555
Max-Forwards: 68
To: <sip:4082022102@14.128.100.169>
From: "4082025555" <sip:4082025555@14.128.100.150>;tag=81D7430C-1D2
Contact: <sip:4082025555@14.128.100.150:5060>
Expires: 180
Remote-Party-ID: "4082025555" <sip:4082025555@14.128.100.150
>;party=calling;screen=yes;privacy=off
Call-ID: F3E5F396-804811E2-9818EC62-1B7185EE@14.128.100.150
CSeq: 101 INVITE
Content-Length: 410
Date: Wed, 27 Feb 2013 19:15:59 GMT
Supported: 100rel,timer,resource-priority,replaces,sdp-anat
Min-SE: 1800
Cisco-Guid: 4091813662-2152206818-2551376994-0460424686
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER,
SUBSCRIBE, NOTIFY, INFO, REGISTER
Timestamp: 1361992559
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Disposition: session;handling=required

```

```

v=0
o=CiscoSystemsSIP-GW-UserAgent 1007 629 IN IP4 14.128.100.150
s=SIP Call
c=IN IP4 14.128.100.150
t=0 0

```

```
m=audio 16930 RTP/AVP 18 101
c=IN IP4 14.128.100.150
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
m=video 17954 RTP/AVP 97
c=IN IP4 14.128.100.150
b=TIAS:1000000
a=rtpmap:97 H264/90000
a=fmtp:97 profile-level-id=42801E;packetization-mode=0
```

Nota: Algunos dispositivos, tales como CUCM, validan el Identificador de recursos uniformes (URI) de las peticiones antes de que las procesen, así que significa que el dispositivo extremo pudo necesitar ser configurado con el nombre de dominio completo (FQDN) para tener en cuenta esto.

En el caso de CUCM, **CUCM > el sistema > el parámetro Enterprise > el clusterwide Domain Configuration (Configuración del dominio) > Nombre de dominio totalmente calificado (FQDN) del cluster** deben ser lo mismo que el nombre de grupo de servidores.

## Escenario 2

Flujo de llamada: Teléfono del IP 1 -- CUCM -- SORBO -- CAMBIO DE SIGNO -- SORBO -- CME -- Teléfono del IP 2

Marque 202 2222 del teléfono del IP 2. 408 debe ser prefijado con la PRE-normalización para alcanzar el teléfono del IP 1.

El CME actúa como PSTN en este escenario.

### 1. El SORBO INVITA viene al CAMBIO DE SIGNO de CUCM.

```
[DsTransportListener-0] DEBUG 2013.02.28 00:34:03:370 DsSipLlApi.Wire -
Received UDP packet on 14.128.100.169:5061 ,source 14.128.64.192:5060
INVITE sip:2022222@14.128.100.169:5061 SIP/2.0
Via: SIP/2.0/UDP 14.128.64.192:5060;branch=z9hG4bK18012ae333f
From: "SJ Phone 1" <sip:2001@14.128.64.192>;
tag=534264~clb77ee1-4af9-4a41-aed3-3846cd699427-49616146
To: <sip:2022222@14.128.100.169>
Date: Thu, 28 Feb 2013 00:34:03 GMT
Call-ID: 8be55500-12e1a5fb-ab-c040800e@14.128.64.192
Supported: timer,resource-priority,replaces
Min-SE: 1800
User-Agent: Cisco-CUCM8.6
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE,
REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback,X-cisco-original-called
Call-Info: <sip:14.128.64.192:5060>
;method="NOTIFY";Event=telephone-event;Duration=500"
Cisco-Guid: 2347062528-0000065536-0000000107-3225452558
Session-Expires: 1800
P-Asserted-Identity: "SJ Phone 1" <sip:2001@14.128.64.192>
Remote-Party-ID: "SJ Phone 1" <sip:2001@14.128.64.192>
;party=calling;screen=yes;privacy=off
Contact: <sip:2001@14.128.64.192:5060>
```



```
Max-Forwards: 70
Content-Length: 0
```

```
--- end of packet ---
```

## 2. La llamada se valida en la configuración de la red (red-CUCM) que hace juego.

### CLI

```
sip listen Net-CUCM udp 14.128.100.169 5061

!
sip network Net-CUCM standard
no non-invite-provisional
allow-connections
retransmit-count invite-client-transaction 3
retransmit-count invite-server-transaction 5
retransmit-count non-invite-client-transaction 3
retransmit-timer T1 500
retransmit-timer T2 4000
retransmit-timer T4 5000
retransmit-timer TU1 5000
retransmit-timer TU2 32000
retransmit-timer clientTn 64000
retransmit-timer serverTn 64000
tcp connection-setup-timeout 1000
udp max-datagram-size 1500
end network
!
```

### GUI

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:373 conditions.RegexCondition -
inNetwork='Net-CUCM'
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:373 conditions.RegexCondition -
IN_NETWORK: Net-CUCM
```

## 3. Se ejecuta la secuencia de la PRE-normalización.

### CLI

```
trigger pre-normalization sequence 1 policy CUCM-Prefix-408
condition TC-from-CUCM
!
policy normalization CUCM-Prefix-408
uri-component update request-uri user 2022222 4082022222
end policy
!
```

### GUI

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:373 util.Normalization -
Entering Normalization(moduleRequest:pre-normalize
)[REQUESTI.12] DEBUG 2013.02.28 00:34:03:373 conditions.RegexCondition -
inNetwork='Net-CUCM'
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:373 conditions.RegexCondition -
IN_NETWORK: Net-CUCM
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.AbstractRegexCondition -
pattern(^QNet-CUCM\E$), toMatch(Net-CUCM) returning true
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 triggers.ModuleTrigger -
ModuleTrigger.eval() action<CUCM-Prefix-408> actionParameter<>
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 triggers.ModuleTrigger -
```

```

ModuleTrigger.eval() got the policy, executing it ...
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 normalization.
URIComponentNormalizationAlgorithm - normalizing request-uri
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 normalization.
URIComponentNormalizationAlgorithm -
updating user/phone of the sip:2022222@14.128.100.169:5061 to 4082022222
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 util.Normalization -
Leaving Normalization.normalize()

```

#### 4. Se corresponde con la condición del activador (TC-de-CUCM).

##### CLI

```

!
trigger condition TC-from-CUCM
sequence 1
in-network ^\QNet-CUCM\E$
end sequence
end trigger condition
!

```

##### GUI

##### DEPURAR

```

[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.RegexCondition -
inNetwork='Net-CUCM'
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.RegexCondition -
IN_NETWORK: Net-CUCM
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.AbstractRegexCondition -
pattern(^\\QNet-CUCM\E$), toMatch(Net-CUCM) returning true

```

#### 5. La configuración del activador de la encaminamiento se marca para descubrir la directiva de la ruta (Directiva-a-PSTN) esa las coincidencias basadas en la condición del activador (TC-de-CUCM).

##### CLI

```

trigger routing sequence 2 policy Policy-to-PSTN condition TC-from-CUCM

```

##### GUI

##### DEPURAR

```

[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.RegexCondition -
inNetwork='Net-CUCM'
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.RegexCondition -
IN_NETWORK: Net-CUCM
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.AbstractRegexCondition -
pattern(^\\QNet-CUCM\E$), toMatch(Net-CUCM) returning true
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:375 triggers.ModuleTrigger -
ModuleTrigger.eval() action<Policy-to-PSTN> actionParameter<>
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:375 triggers.ModuleTrigger -
ModuleTrigger.eval() got the policy, executing it ...

```

#### 6. La configuración de la directiva de la ruta (Directiva-a-PSTN) se marca para encontrar la tabla de ruta (RT-PSTN) esa las coincidencias.

##### CLI

```

!
policy lookup Policy-to-PSTN
sequence 100 RT-PSTN request-uri uri-component user
rule exact
end sequence
end policy
!

```

## GUI

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:375 nrs.XCLPrefix -  
Entering getKeyValue()  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:375 nrs.FieldSelector -  
getUriPart: URI - sip:4082022222@14.128.100.169:5061 part 6  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:375 nrs.FieldSelector -  
Requested field 45  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:375 nrs.FieldSelector -  
Returning key 4082022222  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:375 nrs.XCLPrefix -  
Leaving getKeyValue()  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:375 modules.XCLLookup -  
table=RT-PSTN, key=4082022222  
[REQUESTI.12] INFO 2013.02.28 00:34:03:376 modules.XCLLookup -  
table is RT-PSTN
```

7. La configuración de la tabla de ruta (RT-PSTN) se marca para encontrar el destino de la blanco (SG-PSTN).

### CLI

```
!  
route table RT-PSTN  
key 4082022222 target-destination SG-PSTN Net-PSTN  
end route table  
!
```

## GUI

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 routingtables.RoutingTable -  
Entering lookup()  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 routingtables.RoutingTable -  
Looking up 4082022222 in table RT-PSTN with rule exact and modifiers=none  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 routingtables.RoutingTable -  
Entering applyModifiers()  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 routingtables.RoutingTable -  
Leaving applyModifiers(), returning 4082022222  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 routingtables.RoutingTable -  
Leaving lookup()  
[REQUESTI.12] INFO 2013.02.28 00:34:03:376 nrs.XCLPrefix -  
NRS Routing decision is: RouteTable:RT-PSTN, RouteKey:4082022222,  
TargetDestination:SG-PSTN, Network:Net-PSTN  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 loadbalancer.LBFactory -  
Entering createLoadBalancer()  
[REQUESTI.12] INFO 2013.02.28 00:34:03:376 loadbalancer.LBFactory -  
lbtype is 3(call-id)  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 loadbalancer.LBFactory -  
Leaving createLoadBalancer()  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 nrs.XCLPrefix -  
Stored NRSAlgResult=isFound=true, isFailure=false, Response=-1,  
Routes=[Ruri: SG-PSTN, Route: null, Network: Net-PSTN, q-value=1.  
0radvance=[502, 503]], PolicyAdvance=null  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 nrs.NRSAlgResult -  
set policyAdvance as specified in route=RouteTable:RT-PSTN, RouteKey:4082022222,  
TargetDestination:SG-PSTN, Network:Net-PSTN  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 nrs.NRSAlgResult -  
no policyAdvance specified in route  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 nrs.NRSAlgResult -
```

```
set policyAdvance as specified in algorithm={lookuprule=0, lookupfield=45,
lookupplenght=-1, lookuptable=RT-PSTN, sequence=100, algorithm=1}
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:376 nrs.NRSAlgResult -
no policyAdvance specified in algorithm
```

## 8. Se ejecuta la secuencia de la Poste-normalización.

### CLI

```
trigger post-normalization sequence 1 policy UC520-Four-to-Full
condition TC-UC520-to-PSTN
```

!

### GUI

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 util.Normalization -
Entering Normalization(moduleRequest:post-normalize)
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 conditions.RegexCondition -
inNetwork='Net-CUCM'
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 conditions.RegexCondition -
IN_NETWORK: Net-CUCM
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 conditions.AbstractRegexCondition -
pattern(^\QNet-From-UC520\E$), toMatch(Net-CUCM) returning false
[REQUESTI.12] INFO 2013.02.28 00:34:03:378 util.Normalization -
skipping post-normalize, due to either no trigger is configured or triggers
did not evaluate to true or is configured to by-pass
```

## 9. La configuración del grupo de servidores (SG-PSTN) se marca para encontrar la dirección IP del elemento, y la llamada se rutea al posible de la mejor ruta basado en el Q-valor y la configuración de la ponderación.

### CLI

!

```
server-group sip group SG-PSTN Net-PSTN
element ip-address 14.128.100.150 5060 udp q-value 1.0 weight 0
failover-resp-codes 503
lbtype global
ping
end server-group
```

!

### GUI

### DEPURAR

```
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 loadbalancer.LBFactory -
Entering createLoadBalancer()
[REQUESTI.12] INFO 2013.02.28 00:34:03:378 loadbalancer.LBFactory -
lbtype is 0(global)
[REQUESTI.12] INFO 2013.02.28 00:34:03:378 loadbalancer.LBFactory -
Default lbtype is 3(call-id)
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 loadbalancer.LBFactory -
Leaving createLoadBalancer()
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 loadbalancer.LBBase -
Entering getServer()
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 loadbalancer.LBBase -
Entering initializeDomains()
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 servergroups.
ServerGlobalStateWrapper - Net-PSTN:14.128.100.150:5060:1 numTries=
2--->isServerAvailable(): true
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 loadbalancer.LBBase -
Leaving initializeDomains()
[REQUESTI.12] INFO 2013.02.28 00:34:03:378 loadbalancer.LBHashBased -
list of elements in order on which load balancing is done :
```

```

{reSgElementWeight=0, reSgElementSgName=SG-PSTN, reSgElementTransport=UDP,
reSgElementQValue=1.0, reSgElementPort=5060, reSgElementHost=14.128.100.150}
, [REQUESTI.12] DEBUG 2013.02.28 00:34:03:378 servergroups.AbstractNextHop -
Entering compareDomainNames()
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:379 servergroups.AbstractNextHop -
Leaving compareDomainNames()
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:379 loadbalancer.LBBase -
Server group SG-PSTN selected {reSgElementWeight=0, reSgElementSgName=SG-PSTN,
reSgElementTransport=UDP, reSgElementQValue=1.0, reSgElementPort=5060,
reSgElementHost=14.128.100.150}
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:379 loadbalancer.LBBase -
Leaving getServer()

```

## 10. El SORBO INVITA se envía al elemento seleccionado.

```

[CT_CALLBACK.13] DEBUG 2013.02.28 00:34:06:260 DsSipLlApi.Wire -
Sending UDP packet on 14.128.100.169:32772, destination 14.128.64.192:
5060SIP/2.0 200 OK
Via: SIP/2.0/UDP 14.128.64.192:5060;branch=z9hG4bK18012ae333f
To: <sip:2022222@14.128.100.169>;tag=82FA7450-F53
From: "SJ Phone 1" <sip:2001@14.128.64.192>
;tag=534264~clb77eel-4af9-4a41-aed3-3846cd699427-49616146
Contact: <sip:4082022222@14.128.100.150:5060>
Require: timer
Remote-Party-ID: <sip:4082022222@14.128.100.150>
;party=called;screen=no;privacy=off
Call-ID: 8be55500-12e1a5fb-ab-c040800e@14.128.64.192
CSeq: 101 INVITE
Content-Length: 276
Date: Thu, 28 Feb 2013 00:34:03 GMT
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER,
SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Supported: replaces
Supported: sdp-anat
Supported: timer
Server: Cisco-SIPGateway/IOS-12.x
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Disposition: session;handling=required

```

```

v=0
o=CiscoSystemsSIP-GW-UserAgent 6810 2753 IN IP4 14.128.100.150
s=SIP Call
c=IN IP4 14.128.100.150
t=0 0
m=audio 16862 RTP/AVP 18 101
c=IN IP4 14.128.100.150
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=ptime:20

```

## Escenario 3

Flujo de llamada: Teléfono del IP 1 -- CME 1 -- SORBO -- CAMBIO DE SIGNO -- SORBO -- CME 2 -- Teléfono del IP 2

Marque 4001 o 4002 del teléfono del IP 1 para alcanzar las Extensiones en el teléfono del IP 2.

El CME 2 es UC520 en este escenario y el CME 1 actúa como PSTN.

## 1. El SORBO INVITA viene al CAMBIO DE SIGNO de CME 1 (PSTN).

```
[DsTransportListener-3] DEBUG 2013.02.28 05:28:57:360 DsSipLlApi.Wire -
Received UDP packet on 14.128.100.169:5062 ,source 14.128.100.150:56578
INVITE sip:4002@14.128.100.169:5062 SIP/2.0
Via: SIP/2.0/UDP 14.128.100.150:5060;branch=z9hG4bK2292567
Remote-Party-ID: <sip:85224044444@14.128.100.150>
;party=calling;screen=no;privacy=off
From: <sip:85224044444@14.128.100.150>;tag=84086F7C-10B8
To: <sip:4002@14.128.100.169>
Date: Thu, 28 Feb 2013 05:28:57 GMT
Call-ID: 9559E957-809E11E2-9856EC62-1B7185EE@14.128.100.150
Supported: 100rel,timer,resource-priority,replaces,sdp-anat
Min-SE: 1800
Cisco-Guid: 2446255913-2157842914-2555505762-0460424686
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER,
SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 101 INVITE
Max-Forwards: 70
Timestamp: 1362029337
Contact: <sip:85224044444@14.128.100.150:5060>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 276
```

```
v=0
o=CiscoSystemsSIP-GW-UserAgent 3653 4016 IN IP4 14.128.100.150
s=SIP Call
c=IN IP4 14.128.100.150
t=0 0
m=audio 19202 RTP/AVP 18 101
c=IN IP4 14.128.100.150
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=ptime:20
```

--- end of packet ---

## 2. La llamada se valida en la configuración de la red (Net-UC520) que hace juego.

### CLI

```
sip listen Net-UC520 udp 14.128.100.169 5062

!
sip network Net-From-UC520 standard
no non-invite-provisional
allow-connections
retransmit-count invite-client-transaction 3
retransmit-count invite-server-transaction 5
retransmit-count non-invite-client-transaction 3
retransmit-timer T1 500
retransmit-timer T2 4000
retransmit-timer T4 5000
retransmit-timer TU1 5000
retransmit-timer TU2 32000
retransmit-timer clientTn 64000
retransmit-timer serverTn 64000
tcp connection-setup-timeout 1000
udp max-datagram-size 1500
```

```
end network
!
```

## GUI

```
DEPURAR[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 conditions.RegexCondition -
inNetwork='Net-UC520'
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 conditions.RegexCondition -
IN_NETWORK: Net-UC520
```

### 3. Se ejecuta la secuencia de la PRE-normalización.

## CLI

```
trigger pre-normalization sequence 1 policy CUCM-Prefix-408 condition
TC-from-CUCM GUI
```

## DEPURAR

```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 util.Normalization -
Entering Normalization(moduleRequest:pre-normalize)
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 conditions.RegexCondition -
inNetwork='Net-UC520'
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 conditions.RegexCondition -
IN_NETWORK: Net-UC520
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 conditions.AbstractRegexCondition -
pattern(`\QNet-CUCM\E$`), toMatch(Net-UC520) returning false
[REQUESTI.10] INFO 2013.02.28 05:28:57:362 util.Normalization -
skipping pre-normalize, due to either no trigger is configured or triggers
did not evaluate to true or is configured to by-pass
```

### 4. Se corresponde con la condición del activador (TC-PSTN-to-UC520).

## CLI

```
!
trigger condition TC-PSTN-to-UC520
sequence 1
in-network `^\QNet-UC520\E$`
end sequence
end trigger condition
!
```

## GUI

## DEPURAR

```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 conditions.RegexCondition -
inNetwork='Net-UC520'
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 conditions.RegexCondition -
IN_NETWORK: Net-UC520
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 conditions.AbstractRegexCondition -
pattern(`\QNet-UC520\E$`), toMatch(Net-UC520) returning true
```

### 5. La configuración del activador de la encaminamiento se marca para encontrar la directiva de la ruta (Policy-UC520) esa las coincidencias basadas en la condición del activador (TC-PSTN-to-UC520).

## CLI

```
trigger routing sequence 3 policy Policy-UC520 condition TC-PSTN-to-UC520 GUI
```

## DEPURAR

```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 triggers.ModuleTrigger -
ModuleTrigger.eval() action<Policy-UC520> actionParameter<>
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 triggers.ModuleTrigger -
```

ModuleTrigger.eval() got the policy, executing it ...

6. La configuración de la directiva de la ruta (Policy-UC520) se marca para encontrar la tabla de ruta (RT-UC520) esa las coincidencias.

## CLI

```
!  
policy lookup Policy-UC520  
sequence 100 RT-UC520 request-uri uri-component user  
modify-key 400[12] 2222  
rule exact  
end sequence  
end policy  
!
```

## GUI

## DEPURAR

```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 nrs.XCLPrefix -  
Entering getKeyValue()  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 nrs.FieldSelector -  
getUriPart: URI - sip:4002@14.128.100.169:5062 part 6  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 nrs.FieldSelector -  
Requested field 45  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 nrs.FieldSelector -  
Returning key 4002  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 nrs.FieldSelector -  
Retrieved Modifier RegexModifier: match= 400[12], replace= 2222,  
ignore case= false  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 nrs.FieldSelector -  
Input field: 4002  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 nrs.FieldSelector -  
Modified field: 2222  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 nrs.XCLPrefix -  
Leaving getKeyValue()  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 modules.XCLLookup -  
table=RT-UC520, key=2222  
[REQUESTI.10] INFO 2013.02.28 05:28:57:364 modules.XCLLookup -  
table is RT-UC520
```

7. La configuración de la tabla de ruta (RT-UC520) se marca para encontrar el destino de la blanco (RG-UC520).

## CLI

```
!  
route table RT-UC520  
key 2222 group RG-UC520  
end route table
```

## !GUI

## DEPURAR

```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 routingtables.RoutingTable -  
Entering lookup()  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 routingtables.RoutingTable -  
Looking up 2222 in table RT-UC520 with rule exact and modifiers=none  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 routingtables.RoutingTable -  
Entering applyModifiers()  
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 routingtables.RoutingTable -  
Leaving applyModifiers(), returning 2222
```



```

[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 routingtables.RoutingTable -
Leaving lookup()
[REQUESTI.10] INFO 2013.02.28 05:28:57:364 nrs.XCLPrefix -
NRS Routing decision is: RouteTable:RT-UC520, RouteKey:2222, RouteGroup:RG-UC520
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 loadbalancer.LBFactory -
Entering createLoadBalancer()
[REQUESTI.10] INFO 2013.02.28 05:28:57:364 loadbalancer.LBFactory -
lbtype is 3(call-id)
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 loadbalancer.LBFactory -
Leaving createLoadBalancer()
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 nrs.XCLPrefix -
Stored NRSAlgResult=isFound=true, isFailure=false, Response=-1,
Routes=[Ruri: SG-UC520, Route: null, Network: Net-UC520, q-value=1.
0radvance=[502, 503]], PolicyAdvance=null
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 nrs.NRSAlgResult -
set policyAdvance as specified in route=RouteTable:RT-UC520, RouteKey:2222,
RouteGroup:RG-UC520
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 nrs.NRSAlgResult -
no policyAdvance specified in route
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 nrs.NRSAlgResult -
set policyAdvance as specified in algorithm={lookupkeymodifier=
[ RegexModifier: match= 400[12], replace= 2222, ignore case= false],
lookuprule=0, lookupfield=45, lookuplenght=-1, lookuptable=RT-UC520,
sequence=100, algorithm=1}
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:364 nrs.NRSAlgResult -
no policyAdvance specified in algorithm

```

## 8. Se ejecuta la secuencia de la Poste-normalización.

### CLI

```

trigger post-normalization sequence 1 policy UC520-Four-to-Full
condition TC-UC520-to-PSTN GUI

```

### DEPURAR

```

[REQUESTI.10] DEBUG 2013.02.28 05:28:57:365 util.Normalization -
Entering Normalization(moduleRequest:post-normalize)
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:365 conditions.RegexCondition -
inNetwork='Net-UC520'
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:365 conditions.RegexCondition -
IN_NETWORK: Net-UC520
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:365 conditions.AbstractRegexCondition -
pattern(^\QNet-From-UC520\E$), toMatch(Net-UC520) returning false
[REQUESTI.10] INFO 2013.02.28 05:28:57:365 util.Normalization -
skipping post-normalize, due to either no trigger is configured or
triggers did not evaluate to true or is configured to by-pass

```

## 9. La configuración del Grupo de Routes se marca para encontrar la dirección IP del elemento, y la llamada se rutea al posible de la mejor ruta basado en el Q-valor y el parámetro de peso.

### CLI

```

!
route group RG-UC520
element target-destination SG-UC520 Net-UC520 q-value 1.0
failover-codes 502 - 503
weight 0
end element
end route
!
!
server-group sip group SG-UC520 Net-UC520
element ip-address 14.128.100.161 5060 udp q-value 1.0 weight 0

```

```
failover-resp-codes 503
lbtype global
ping
end server-group
!
```

## GUI

## DEPURAR

```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:365 loadbalancer.LBFactory -
Entering createLoadBalancer()
[REQUESTI.10] INFO 2013.02.28 05:28:57:365 loadbalancer.LBFactory -
lbtype is 0(global)
[REQUESTI.10] INFO 2013.02.28 05:28:57:365 loadbalancer.LBFactory -
Default lbtype is 3(call-id)
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:365 loadbalancer.LBFactory -
Leaving createLoadBalancer()
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:365 loadbalancer.LBBase -
Entering getServer()
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:365 loadbalancer.LBBase -
Entering initializeDomains()
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:365 servergroups.
ServerGlobalStateWrapper - Net-UC520:14.128.100.161:5060:1 numTries=
2--->isServerAvailable(): true
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:366 loadbalancer.LBBase -
Leaving initializeDomains()
[REQUESTI.10] INFO 2013.02.28 05:28:57:366 loadbalancer.LBHashBased -
list of elements in order on which load balancing is done :
{reSgElementWeight=0, reSgElementSgName=SG-UC520, reSgElementTransport=UDP,
reSgElementQValue=1.0, reSgElementPort=5060, reSgElementHost=14.128.100.161},
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:366 servergroups.AbstractNextHop -
Entering compareDomainNames()
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:366 servergroups.AbstractNextHop -
Leaving compareDomainNames()
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:366 loadbalancer.LBBase -
Server group SG-UC520 selected {reSgElementWeight=0, reSgElementSgName=SG-UC520,
reSgElementTransport=UDP, reSgElementQValue=1.0, reSgElementPort=5060,
reSgElementHost=14.128.100.161}
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:366 loadbalancer.LBBase -
Leaving getServer()
```

## 10. El SORBO INVITA se envía al elemento seleccionado.

```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:367 DsSipLlApi.Wire -
Sending UDP packet on 14.128.100.169:32773, destination 14.128.100.161:5060
INVITE sip:4002@SG-UC520 SIP/2.0
Via: SIP/2.0/UDP
14.128.100.169:5062;branch=z9hG4bK.ToYJfEKMyfZGySv.gcLjg~~237
Via: SIP/2.0/UDP 14.128.100.150:5060;branch=z9hG4bK2292567
Max-Forwards: 69
To: <sip:4002@14.128.100.169>
From: <sip:85224044444@14.128.100.150>;tag=84086F7C-10B8
Contact: <sip:85224044444@14.128.100.150:5060>
Expires: 180
Remote-Party-ID: <sip:85224044444@14.128.100.150>
;party=calling;screen=no;privacy=off
Call-ID: 9559E957-809E11E2-9856EC62-1B7185EE@14.128.100.150
CSeq: 101 INVITE
Content-Length: 276
Date: Thu, 28 Feb 2013 05:28:57 GMT
Supported: 100rel,timer,resource-priority,replaces,sdp-anat
Min-SE: 1800
Cisco-Guid: 2446255913-2157842914-2555505762-0460424686
```

User-Agent: Cisco-SIPGateway/IOS-12.x  
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER,  
SUBSCRIBE, NOTIFY, INFO, REGISTER  
Timestamp: 1362029337  
Allow-Events: telephone-event  
Content-Type: application/sdp  
Content-Disposition: session;handling=required

v=0  
o=CiscoSystemsSIP-GW-UserAgent 3653 4016 IN IP4 14.128.100.150  
s=SIP Call  
c=IN IP4 14.128.100.150  
t=0 0  
m=audio 19202 RTP/AVP 18 101  
c=IN IP4 14.128.100.150  
a=rtpmap:18 G729/8000  
a=fmtp:18 annexb=no  
a=rtpmap:101 telephone-event/8000  
a=fmtp:101 0-16  
a=ptime:20

## Situación 4

Flujo de llamada: **Teléfono del IP 1 -- CME 1 -- SORBO -- CAMBIO DE SIGNO -- SORBO -- CME 2 -- Teléfono del IP 2**

Marque 4444 del teléfono del IP 2 que se cambia a 415 240 4444 con la Poste-normalización para alcanzar el teléfono del IP 1.

El CME 2 es UC520 en este escenario y el CME 1 actúa como PSTN.

### 1. El SORBO INVITA viene al CAMBIO DE SIGNO de CME 2 (UC520).

```
[DsTransportListener-1] DEBUG 2013.02.28 07:06:57:220 DsSipLlApi.Wire -  
Received UDP packet on 14.128.100.169:5063 ,source 14.128.100.161:59404  
INVITE sip:4444@14.128.100.169:5063 SIP/2.0  
Date: Thu, 28 Feb 2013 07:09:20 GMT  
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER,  
SUBSCRIBE, NOTIFY, INFO, REGISTER  
From: <sip:4001@14.128.100.161>;tag=256D566C-22AC  
Allow-Events: telephone-event  
Supported: 100rel,timer,resource-priority,replaces,sdp-anat  
Min-SE: 1800  
Remote-Party-ID: <sip:4001@14.128.100.161>  
&party=calling;screen=no;privacy=off  
Cisco-Guid: 2598740490-2158760418-2150671243-2598404062  
Timestamp: 1362035360  
Content-Length: 543  
User-Agent: Cisco-SIPGateway/IOS-12.x  
To: <sip:4444@14.128.100.169>  
Contact: <sip:4001@14.128.100.161:5060>  
Expires: 180  
Content-Type: multipart/mixed;boundary=uniqueBoundary  
Call-ID: 9B62C157-80AC11E2-8035A38B-9AE07FDE@14.128.100.161  
Via: SIP/2.0/UDP 14.128.100.161:5060;branch=z9hG4bK21E82  
CSeq: 101 INVITE  
Max-Forwards: 70  
Mime-Version: 1.0  
  
--uniqueBoundary  
Content-Type: application/sdp  
Content-Disposition: session;handling=required
```

```

v=0
o=CiscoSystemsSIP-GW-UserAgent 3418 2914 IN IP4 14.128.100.161
s=SIP Call
c=IN IP4 14.128.100.161
t=0 0
m=audio 17618 RTP/AVP 18 101
c=IN IP4 14.128.100.161
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=ptime:20

--uniqueBoundary
Content-Type: application/gtd
Content-Disposition: signal;handling=optional

IAM,
GCI,9ae5a20a80ac11e28030a38b9ae07fde

--- end of packet ---

```

## 2. La llamada se valida en la configuración de la red (Net-From-UC520) que hace juego.

### CLI

```

sip listen Net-From-UC520 udp 14.128.100.169 5063
!
sip network Net-From-UC520 standard
no non-invite-provisional
allow-connections
retransmit-count invite-client-transaction 3
retransmit-count invite-server-transaction 5
retransmit-count non-invite-client-transaction 3
retransmit-timer T1 500
retransmit-timer T2 4000
retransmit-timer T4 5000
retransmit-timer TU1 5000
retransmit-timer TU2 32000
retransmit-timer clientTn 64000
retransmit-timer serverTn 64000
tcp connection-setup-timeout 1000
udp max-datagram-size 1500
end network
!

```

### GUI

### DEPURAR

```

[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
inNetwork='Net-From-UC520'
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
IN_NETWORK: Net-From-UC520

```

## 3. Se ejecuta la secuencia de la PRE-normalización.

### CLI

```

trigger pre-normalization sequence 1 policy CUCM-Prefix-408 condition
TC-from-CUCM

```

### GUI

### DEPURAR

```

[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 util.Normalization -
Entering Normalization(moduleRequest:pre-normalize)

```

```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
inNetwork='Net-From-UC520'
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
IN_NETWORK: Net-From-UC520
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.AbstractRegexCondition -
pattern(^\\QNet-CUCM\\E$), toMatch(Net-From-UC520) returning false
[REQUESTI.5] INFO 2013.02.28 07:06:57:229 util.Normalization -
skipping pre-normalize, due to either no trigger is configured or triggers
did not evaluate to true or is configured to by-pass
```

#### 4. Se corresponde con la condición del activador (TC-UC520-to-PSTN).

##### CLI

```
!
trigger condition TC-UC520-to-PSTN
sequence 1
in-network ^\\QNet-From-UC520\\E$
end sequence
end trigger condition
!
```

##### GUI

##### DEPURAR

```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
inNetwork='Net-From-UC520'
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
IN_NETWORK: Net-From-UC520
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 conditions.AbstractRegexCondition -
pattern(^\\QNet-From-UC520\\E$), toMatch(Net-From-UC520) returning true
```

#### 5. La configuración del activador de la encaminamiento se marca para encontrar la directiva de la ruta (Policy-UC520-to-PSTN) esa las coincidencias basadas en la condición del activador (TC-UC520-to-PSTN).

##### CLI

```
trigger routing sequence 4 policy Policy-UC520-to-PSTN condition
TC-UC520-to-PSTN GUI
```

##### DEPURAR

```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 triggers.ModuleTrigger -
ModuleTrigger.eval() action<Policy-UC520-to-PSTN> actionParameter<>
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 triggers.ModuleTrigger -
ModuleTrigger.eval() got the policy, executing it ...
```

#### 6. La configuración de la directiva de la ruta (Policy-UC520-to-PSTN) se marca para encontrar la tabla de ruta (RT-UC520-PSTN) esa las coincidencias.

##### CLI

```
!
policy lookup Policy-UC520-to-PSTN
sequence 100 RT-UC520-PSTN request-uri uri-component user
modify-key 4444 3333
rule exact
end sequence
end policy
!
```

##### GUI

## DEPURAR

```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 nrs.XCLPrefix -  
Entering getKeyValue()  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 nrs.FieldSelector -  
getUriPart: URI - sip:4444@14.128.100.169:5063 part 6  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 nrs.FieldSelector -  
Requested field 45  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 nrs.FieldSelector -  
Returning key 4444  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 nrs.FieldSelector -  
Retrieved Modifier RegexModifier: match= 4444, replace= 3333,  
ignore case= false  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 nrs.FieldSelector -  
Input field: 4444  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 nrs.FieldSelector -  
Modified field: 3333  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 nrs.XCLPrefix -  
Leaving getKeyValue()  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 modules.XCLLookup -  
table=RT-UC520-PSTN, key=3333  
[REQUESTI.5] INFO 2013.02.28 07:06:57:230 modules.XCLLookup -  
table is RT-UC520-PSTN
```

7. La configuración de la tabla de ruta (RT-UC520-PSTN) se marca para encontrar el destino de la blanco (RG-UC520).

## CLI

```
!  
route table RT-UC520-PSTN  
key 3333 group RG-UC520-to-PSTN  
end route table
```

## !GUI

## DEPURAR

```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 routingtables.RoutingTable -  
Entering lookup()  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 routingtables.RoutingTable -  
Looking up 3333 in table RT-UC520-PSTN with rule exact and modifiers=none  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 routingtables.RoutingTable -  
Entering applyModifiers()  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 routingtables.RoutingTable -  
Leaving applyModifiers(), returning 3333  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 routingtables.RoutingTable -  
Leaving lookup()  
[REQUESTI.5] INFO 2013.02.28 07:06:57:231 nrs.XCLPrefix -  
NRS Routing decision is: RouteTable:RT-UC520-PSTN, RouteKey:3333,  
RouteGroup:RG-UC520-to-PSTN  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 loadbalancer.LBFactory -  
Entering createLoadBalancer()  
[REQUESTI.5] INFO 2013.02.28 07:06:57:231 loadbalancer.LBFactory -  
lbtype is 3(call-id)  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 loadbalancer.LBFactory -  
Leaving createLoadBalancer()  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 nrs.XCLPrefix -  
Stored NRSAlgResult=isFound=true, isFailure=false, Response=-1,  
Routes=[Ruri: 14.128.100.150, Route: null, Network: Net-From-UC520,  
q-value=1.0radvance=[502, 503]], PolicyAdvance=null  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 nrs.NRSAlgResult -  
set policyAdvance as specified in route=RouteTable:RT-UC520-PSTN,  
RouteKey:3333, RouteGroup:RG-UC520-to-PSTN  
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 nrs.NRSAlgResult -
```

```
no policyAdvance specified in route
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 nrs.NRSAlgResult -
set policyAdvance as specified in algorithm={lookupkeymodifier=
[ RegexModifier: match= 4444, replace= 3333, ignore case= false],
lookuprule=0, lookupfield=45, lookuplength=-1, lookuptable=RT-UC520-PSTN,
sequence=100, algorithm=1}
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 nrs.NRSAlgResult -
no policyAdvance specified in algorithm
```

## 8. Se ejecuta la secuencia de la Poste-normalización.

### CLI

```
trigger post-normalization sequence 1 policy UC520-Four-to-Full
condition TC-UC520-to-PSTN !
policy normalization UC520-Four-to-Full
uri-component update request-uri user 4444 85224044444
end policy
!
```

### GUI

### DEPURAR

```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 util.Normalization -
Entering Normalization(moduleRequest:post-normalize)
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 conditions.RegexCondition -
inNetwork='Net-From-UC520'
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 conditions.RegexCondition -
IN_NETWORK: Net-From-UC520
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 conditions.AbstractRegexCondition -
pattern(^QNet-From-UC520\E$), toMatch(Net-From-UC520) returning true
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 triggers.ModuleTrigger -
ModuleTrigger.eval() action<UC520-Four-to-Full> actionParameter<>
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 triggers.ModuleTrigger -
ModuleTrigger.eval() got the policy, executing it ...
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 normalization.URIComponentNormalizationAlgorithm
-
normalizing request-uri
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 normalization.URIComponentNormalizationAlgorithm
-
updating user/phone of the sip:4444@14.128.100.150 to 85224044444
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 util.Normalization -
Leaving Normalization.normalize()
```

## 9. La configuración del Grupo de Routes se marca para encontrar la dirección IP del elemento, y la llamada se rutea al posible de la mejor ruta basado en el Q-valor y el parámetro de peso.

### CLI

```
!
route group RG-UC520-to-PSTN
element target-destination 14.128.100.150 Net-From-UC520 q-value 1.0
failover-codes 502 - 503
weight 0
end element
end route
!
```

### GUI

### DEPURAR

```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 loadbalancer.LBBase -
Entering getServer()
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 loadbalancer.LBBase -
Entering initializeDomains()
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 nrs.NRSRoutes -
routes before applying time policies: [Ruri: 14.128.100.150,
Route: null, Network: Net-From-UC520, q-value=1.0radvance=[502, 503]]
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 nrs.NRSRoutes -
routes after applying time policies: [Ruri: 14.128.100.150, Route:
null, Network: Net-From-UC520, q-value=1.0radvance=[502, 503]]
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:231 loadbalancer.LBBase -
Leaving initializeDomains()
[REQUESTI.5] INFO 2013.02.28 07:06:57:231 loadbalancer.LBHashBased -
list of elements in order on which load balancing is done : Ruri:
14.128.100.150, Route: null, Network: Net-From-UC520, q-value=
1.0radvance=[502, 503],
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 loadbalancer.LBBase -
Server group route-sg selected Ruri: 14.128.100.150, Route: null,
Network: Net-From-UC520, q-value=1.0radvance=[502, 503]
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:232 loadbalancer.LBBase -
Leaving getServer()
```

## 10. El SORBO INVITA se envía al elemento seleccionado.

```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:233 DsSipLlApi.Wire -
Sending UDP packet on 14.128.100.169:32770, destination 14.128.100.150:5060
INVITE sip:85224044444@14.128.100.150 SIP/2.0
Via: SIP/2.0/UDP
14.128.100.169:5063;branch=z9hG4bK.ToYJfEKMyfZGySv.gcLjg~~238
Via: SIP/2.0/UDP 14.128.100.161:5060;branch=z9hG4bK21E82
Max-Forwards: 69
To: <sip:4444@14.128.100.169>
From: <sip:4001@14.128.100.161>;tag=256D566C-22AC
Contact: <sip:4001@14.128.100.161:5060>
Expires: 180
Remote-Party-ID: <sip:4001@14.128.100.161>
;party=calling;screen=no;privacy=off
Call-ID: 9B62C157-80AC11E2-8035A38B-9AE07FDE@14.128.100.161
CSeq: 101 INVITE
Content-Length: 543
Date: Thu, 28 Feb 2013 07:09:20 GMT
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER,
SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Supported: 100rel,timer,resource-priority,replaces,sdp-anat
Min-SE: 1800
Cisco-Guid: 2598740490-2158760418-2150671243-2598404062
Timestamp: 1362035360
User-Agent: Cisco-SIPGateway/IOS-12.x
Content-Type: multipart/mixed;boundary=uniqueBoundary
MIME-Version: 1.0

--uniqueBoundary
Content-Type: application/sdp
Content-Disposition: session;handling=required

v=0
o=CiscoSystemsSIP-GW-UserAgent 3418 2914 IN IP4 14.128.100.161
s=SIP Call
c=IN IP4 14.128.100.161
t=0 0
m=audio 17618 RTP/AVP 18 101
c=IN IP4 14.128.100.161
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
```



```
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=ptime:20

--uniqueBoundary
Content-Type: application/gtd
Content-Disposition: signal;handling=optional

IAM,
GCI,9ae5a20a80ac11e28030a38b9ae07fde
```

## Configuración para los cuatro escenarios

Aquí está la configuración completa del CAMBIO DE SIGNO para los cuatro escenarios de llamada descritos en este documento:

```
ajeensing-cusp-8.5.3(cusp)# show configuration active verbose
Building CUSP configuration...
!
server-group sip global-load-balance call-id
server-group sip retry-after 0
server-group sip element-retries udp 2
server-group sip element-retries tls 1
server-group sip element-retries tcp 1
sip dns-srv
enable
no naptr
end dns
!
no sip header-compaction
!
sip logging
sip max-forwards 70
sip network Net-CUCM standard
no non-invite-provisional
allow-connections
retransmit-count invite-client-transaction 3
retransmit-count invite-server-transaction 5
retransmit-count non-invite-client-transaction 3
retransmit-timer T1 500
retransmit-timer T2 4000
retransmit-timer T4 5000
retransmit-timer TU1 5000
retransmit-timer TU2 32000
retransmit-timer clientTn 64000
retransmit-timer serverTn 64000
tcp connection-setup-timeout 1000
udp max-datagram-size 1500
end network
!
sip network Net-From-UC520 standard
no non-invite-provisional
allow-connections
retransmit-count invite-client-transaction 3
retransmit-count invite-server-transaction 5
retransmit-count non-invite-client-transaction 3
retransmit-timer T1 500
retransmit-timer T2 4000
retransmit-timer T4 5000
retransmit-timer TU1 5000
retransmit-timer TU2 32000
retransmit-timer clientTn 64000
```

```
retransmit-timer serverTn 64000
tcp connection-setup-timeout 1000
udp max-datagram-size 1500
end network
!
sip network Net-PSTN standard
no non-invite-provisional
allow-connections
retransmit-count invite-client-transaction 3
retransmit-count invite-server-transaction 5
retransmit-count non-invite-client-transaction 3
retransmit-timer T1 500
retransmit-timer T2 4000
retransmit-timer T4 5000
retransmit-timer TU1 5000
retransmit-timer TU2 32000
retransmit-timer clientTn 64000
retransmit-timer serverTn 64000
tcp connection-setup-timeout 1000
udp max-datagram-size 1500
end network
!
sip network Net-UC520 standard
no non-invite-provisional
allow-connections
retransmit-count invite-client-transaction 3
retransmit-count invite-server-transaction 5
retransmit-count non-invite-client-transaction 3
retransmit-timer T1 500
retransmit-timer T2 4000
retransmit-timer T4 5000
retransmit-timer TU1 5000
retransmit-timer TU2 32000
retransmit-timer clientTn 64000
retransmit-timer serverTn 64000
tcp connection-setup-timeout 1000
udp max-datagram-size 1500
end network
!
sip overload reject retry-after 0
sip peg-counting 2 86400
sip privacy service
sip queue message
drop-policy head
low-threshold 80
size 2000
thread-count 20
end queue
!
sip queue radius
drop-policy head
low-threshold 80
size 2000
thread-count 20
end queue
!
sip queue request
drop-policy head
low-threshold 80
size 2000
thread-count 20
end queue
!
sip queue response
```

```
drop-policy head
low-threshold 80
size 2000
thread-count 20
end queue
!
sip queue st-callback
drop-policy head
low-threshold 80
size 2000
thread-count 10
end queue
!
sip queue timer
drop-policy none
low-threshold 80
size 2500
thread-count 8
end queue
!
sip queue xcl
drop-policy head
low-threshold 80
size 2000
thread-count 2
end queue
!
route recursion
!
sip tcp connection-timeout 30
sip tcp max-connections 256
!
no sip tls
!
trigger condition TC-PSTN-to-UC520
sequence 1
in-network ^\QNet-UC520\E$
end sequence
sequence 2
in-network ^\QNet-CUCM\E$
end sequence
end trigger condition
!
trigger condition TC-UC520-to-PSTN
sequence 1
in-network ^\QNet-From-UC520\E$
end sequence
end trigger condition
!
trigger condition TC-from-CUCM
sequence 1
in-network ^\QNet-CUCM\E$
end sequence
end trigger condition
!
trigger condition TC-from-PSTN
sequence 1
in-network ^\QNet-PSTN\E$
end sequence
sequence 2
in-network ^\QNet-CUCM\E$
message request
end sequence
end trigger condition
```

```
!  
trigger condition mid-dialog  
sequence 1  
mid-dialog  
end sequence  
end trigger condition  
!  
accounting  
no enable  
no client-side  
no server-side  
end accounting  
!  
server-group sip group SG-CUCM.ajeet.com Net-CUCM  
element ip-address 14.128.64.191 5060 udp q-value 1 weight 50  
element ip-address 14.128.64.192 5060 udp q-value 1.0 weight 100  
failover-resp-codes 503  
lbtype global  
ping  
end server-group  
!  
server-group sip group SG-PSTN Net-PSTN  
element ip-address 14.128.100.150 5060 udp q-value 1.0 weight 0  
failover-resp-codes 503  
lbtype global  
ping  
end server-group  
!  
server-group sip group SG-UC520 Net-UC520  
element ip-address 14.128.100.161 5060 udp q-value 1.0 weight 0  
failover-resp-codes 503  
lbtype global  
ping  
end server-group  
!  
route group RG-UC520  
element target-destination SG-UC520 Net-UC520 q-value 1.0  
failover-codes 502 - 503  
weight 0  
end element  
end route  
!  
route group RG-UC520-to-PSTN  
element target-destination 14.128.100.150 Net-From-UC520 q-value 1.0  
failover-codes 502 - 503  
weight 0  
end element  
end route  
!  
route table RT-CUCM  
key 1111 target-destination SG-CUCM.ajeet.com Net-CUCM  
end route table  
!  
route table RT-PSTN  
key 4082022222 target-destination SG-PSTN Net-PSTN  
end route table  
!  
route table RT-UC520  
key 2222 group RG-UC520  
end route table  
!  
route table RT-UC520-PSTN  
key 3333 group RG-UC520-to-PSTN  
end route table
```

```
!  
policy normalization CUCM-Prefix-408  
uri-component update request-uri user 2022222 4082022222  
end policy  
!  
policy normalization UC520-Four-to-Full  
uri-component update request-uri user 4444 85224044444  
end policy  
!  
policy lookup Policy-UC520  
sequence 100 RT-UC520 request-uri uri-component user  
modify-key 400[12] 2222  
rule exact  
end sequence  
end policy  
!  
policy lookup Policy-UC520-to-PSTN  
sequence 100 RT-UC520-PSTN request-uri uri-component user  
modify-key 4444 3333  
rule exact  
end sequence  
end policy  
!  
policy lookup Policy-to-CUCM  
sequence 100 RT-CUCM request-uri uri-component user  
modify-key 4082022102 1111  
rule exact  
end sequence  
end policy  
!  
policy lookup Policy-to-PSTN  
sequence 100 RT-PSTN request-uri uri-component user  
rule exact  
end sequence  
end policy  
!  
trigger routing sequence 1 policy Policy-to-CUCM condition  
TC-from-PSTN  
trigger routing sequence 2 policy Policy-to-PSTN condition  
TC-from-CUCM  
trigger routing sequence 3 policy Policy-UC520 condition  
TC-PSTN-to-UC520  
trigger routing sequence 4 policy Policy-UC520-to-PSTN condition  
TC-UC520-to-PSTN  
trigger pre-normalization sequence 1 policy CUCM-Prefix-408  
condition TC-from-CUCM  
trigger post-normalization sequence 1 policy UC520-Four-to-Full  
condition TC-UC520-to-PSTN  
!  
server-group sip ping-options Net-CUCM 14.128.100.169 4001  
method OPTIONS  
ping-type proactive 2500  
timeout 2000  
end ping  
!  
server-group sip global-ping  
sip cac session-timeout 720  
sip cac Net-CUCM 14.128.64.191 5060 udp limit -1  
sip cac Net-CUCM 14.128.64.192 5060 udp limit -1  
sip cac Net-PSTN 14.128.100.150 5060 udp limit -1  
sip cac Net-UC520 14.128.100.161 5060 udp limit -1  
!  
no sip cac  
!
```

```
sip listen Net-CUCM udp 14.128.100.169 5061
sip listen Net-From-UC520 udp 14.128.100.169 5063
sip listen Net-PSTN udp 14.128.100.169 5060
sip listen Net-UC520 udp 14.128.100.169 5062
!
call-rate-limit 200
!
end
ajeeting-cusp-8.5.3(cusp)#
```

## Verificación

Actualmente, no hay un procedimiento de verificación disponible para esta configuración.

## Troubleshooting

Actualmente, no hay información específica de troubleshooting disponible para esta configuración.

## Información Relacionada

- [La guía de configuración CLI para Cisco unificó la versión 8.5 del proxy del SORBO](#)
- [La guía de la administración de GUI para Cisco unificó la versión 8.5 del proxy del SORBO](#)
- [Procesamiento de llamadas del CAMBIO DE SIGNO](#)
- [Soporte Técnico y Documentación - Cisco Systems](#)