

Exemplo de configuração do LIMITE

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Introdução

Este original descreve a amostra CLI e a configuração GUI de Cisco unificou o proxy do SORVO (LIMITE) com debuga encenações diferentes desse roteamento de chamada do fósforo quatro.

Pré-requisitos

Requisitos

Cisco recomenda que você tem o conhecimento básico destes assuntos:

- Session Initiation Protocol (SIP)
- Cisco unificou o proxy do SORVO (o LIMITE)

[Componentes Utilizados](#)

A informação neste documento é baseada no LIMITE.

As informações neste documento foram criadas a partir de dispositivos em um ambiente de laboratório específico. Todos os dispositivos utilizados neste documento foram iniciados com uma configuração (padrão) inicial. Se a sua rede estiver ativa, certifique-se de que entende o impacto potencial de qualquer comando.

Configurar

Esta seção descreve a configuração de quatro encenações do roteamento de chamada.

Nota: Use a [Command Lookup Tool](#) ([somente clientes registrados](#)) para obter mais informações sobre os comandos usados nesta seção.

Cenário 1

Fluxo de chamadas: **Telefone IP 1 -- CME -- SORVO -- LIMITE -- SORVO -- CUCM -- Telefone IP 2**

Discar 408 202 2102 do telefone IP 1 registrado a CallManager expresso (CME) a fim alcançar o telefone IP 2 registrado ao gerente das comunicações unificadas de Cisco (CUCM) através do LIMITE.

O CME atua como uma rede de telefone comutada pública (PSTN) nesta encenação.

1. O SORVO CONVIDA vem ao LIMITE do 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 ---

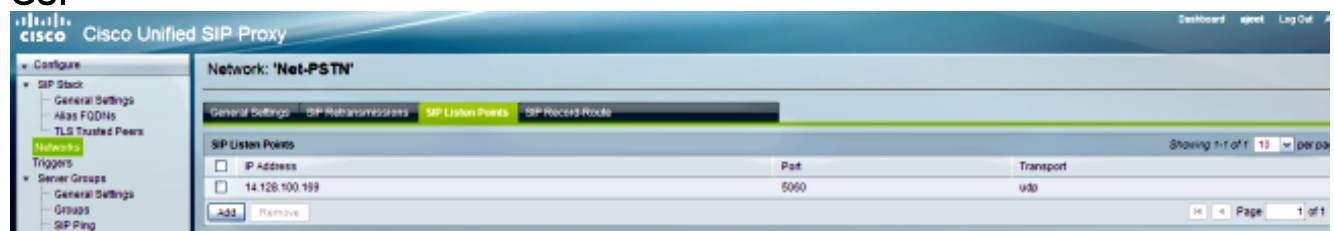
2. O atendimento é aceitado à configuração da rede (Rede-PSTN) que combina.

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



DEBUGAR

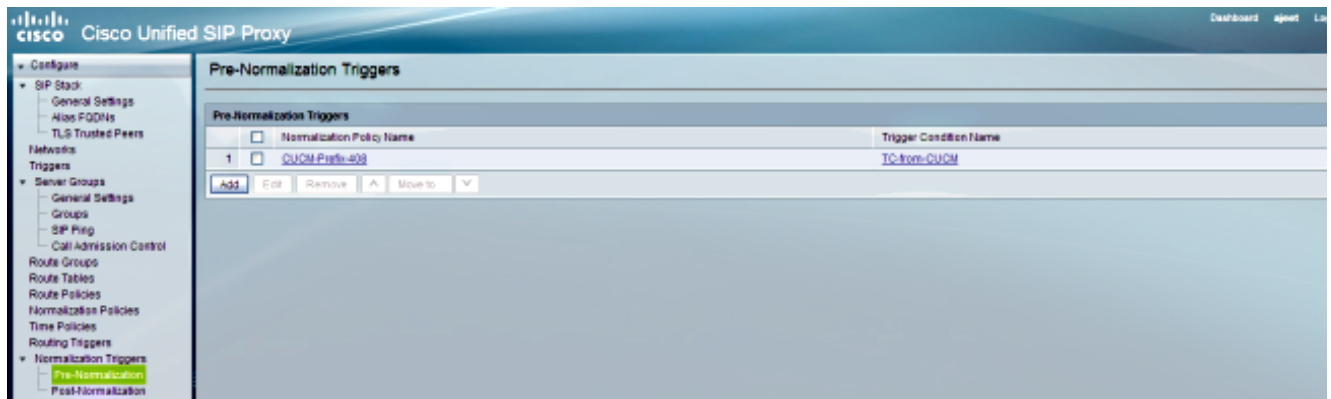
```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250
conditions.RegexCondition - inNetwork='Net-PSTN'
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250
conditions.RegexCondition - IN_NETWORK: Net-PSTN
```

3. A sequência da PRE-normalização é executada.

CLI

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

GUI



DEBUGAR

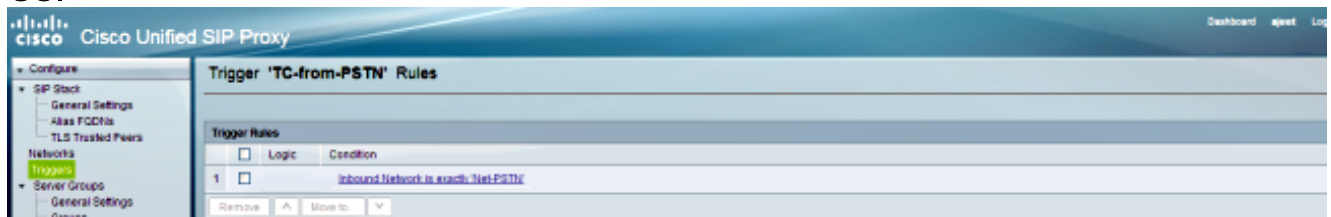
```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 util.Normalization -
Entering Normalization(moduleRequest:pre-normalize)
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.RegexCondition -
inNetwork='Net-PSTN'
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.RegexCondition -
IN_NETWORK: Net-PSTN
[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. A condição do disparador (TC--PSTN) é combinada.

CLI

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

GUI



DEBUGAR

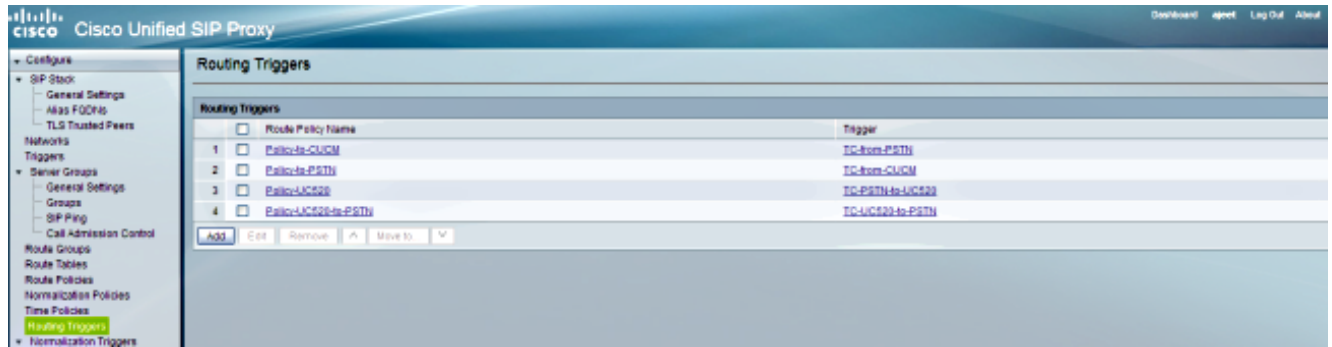
```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.RegexCondition -
inNetwork='Net-PSTN'
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.RegexCondition -
IN_NETWORK: Net-PSTN
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:250 conditions.AbstractRegexCondition -
pattern(^QNet-PSTN\E$), toMatch(Net-PSTN)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

5. A configuração do disparador do roteamento é verificada a fim encontrar a política da rota (Política-a-CUCM) essa os fósforos baseados na condição do disparador (TC--PSTN).

CLI

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

GUI



DEBUGAR

```
[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. A configuração da política da rota (Política-a-CUCM) é verificada a fim encontrar a tabela de rota (RT-CUCM) essa fósforos.

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



DEBUGAR

```

[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. A configuração da tabela de rota (RT-CUCM) é verificada a fim encontrar o destino do alvo (SG-CUCM.ajeet.com).

CLI

```

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

```

GUI

The top screenshot shows the 'Route Table RT-CUCM Routes' configuration page. It features a table with columns for State, Key, Route Group, Target Destination, Next Hop, Response, Lookup Route Policy, Default SIP Route, and Network. A single route is listed with Key '1111' and Target Destination 'SG-CUCM.ajeet.com'. Below the table are buttons for 'Add', 'Remove', 'Revert', 'Import', and 'Export Active Routes'. A 'Notes' section provides instructions for New, Modified, Deleted, and Active records.

The bottom screenshot shows the 'Route Table RT-CUCM Route' configuration page. It displays the 'Active Value' section with fields for Key (1111), Route Type (destination), Host / Server Group (SG-CUCM.ajeet.com), Port, Transport Type, and Network (Net-CUCM). The 'Candidate Value' section includes radio buttons for Key (1111) and Route Type (destination), and a dropdown for Target Destination (SG-CUCM.ajeet.com). The 'Target Destination' section has fields for Host / Server Group (SG-CUCM.ajeet.com), Port, and Transport Type (none). The 'Network' section has a dropdown for Net-CUCM. 'Update' and 'Cancel' buttons are at the bottom.

DEBUGAR

```

[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. A sequência da Cargo-normalização é executada.

Nota: Esta encenação não usa a Cargo-normalização, que é porque a Cargo-normalização é saltada no debuga.

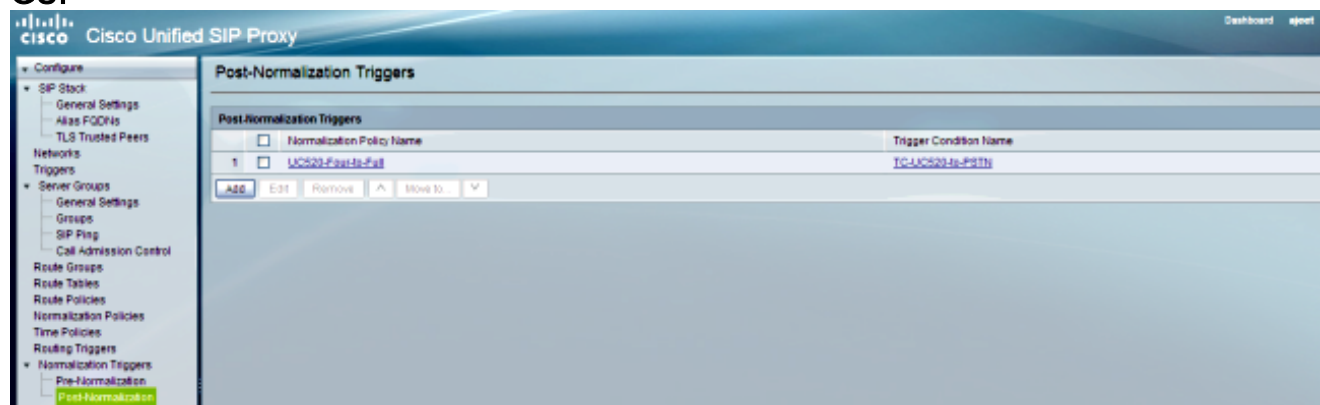
CLI

```

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

```

GUI



DEBUGAR

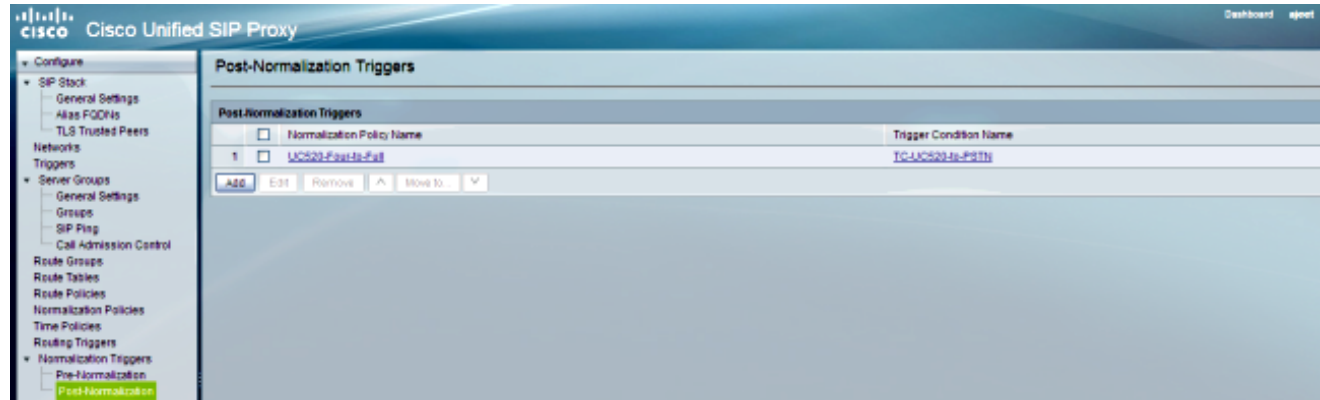
```
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 util.Normalization -
Entering Normalization(moduleRequest:post-normalize)
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 conditions.RegexCondition -
inNetwork='Net-PSTN'
[REQUESTI.12] DEBUG 2013.02.27 19:15:59:254 conditions.RegexCondition -
IN_NETWORK: Net-PSTN
[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. A configuração do grupo de servidor é verificada a fim encontrar o IP address do elemento, e o atendimento é distribuído ao possível da melhor ruta baseado no Q-valor e na configuração do peso.

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



DEBUGAR

```
[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. O SORVO CONVIDA é enviado ao elemento selecionado.

```
[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: Alguns dispositivos, tais como CUCM, validam o identificador de recurso uniforme (URI) dos pedidos antes que os processem, assim que significa que o dispositivo final pôde precisar de ser configurado com o nome de domínio totalmente qualificado (FQDN) a fim permitir isto.

No caso de CUCM, **CUCM > o sistema > o parâmetro empresarial > da configuração de domínio > do conjunto do clusterwide nome de domínio totalmente qualificado** devem ser o mesmo que o nome de grupo de servidor.

- Clusterwide Domain Configuration	
Organization Top Level Domain	<input type="text"/>
Cluster Fully Qualified Domain Name	SG-CUCM.ajeet.com

Cenário 2

Fluxo de chamadas: **Telefone IP 1 -- CUCM -- SORVO -- LIMITE -- SORVO -- CME -- Telefone IP 2**

Discar 202 2222 do telefone IP 2. 408 deve ser prefixado com a PRE-normalização a fim alcançar o telefone IP 1.

O CME atua como o PSTN nesta encenação.

1. O SORVO CONVIDA vem ao LIMITE 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 ---

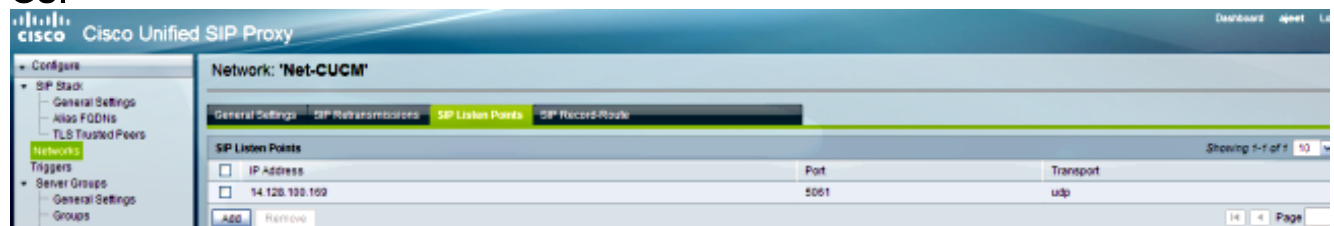
2. O atendimento é aceitado na configuração da rede (rede-CUCM) que combina.

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



DEBUGAR

```
[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. A sequência da PRE-normalização é executada.

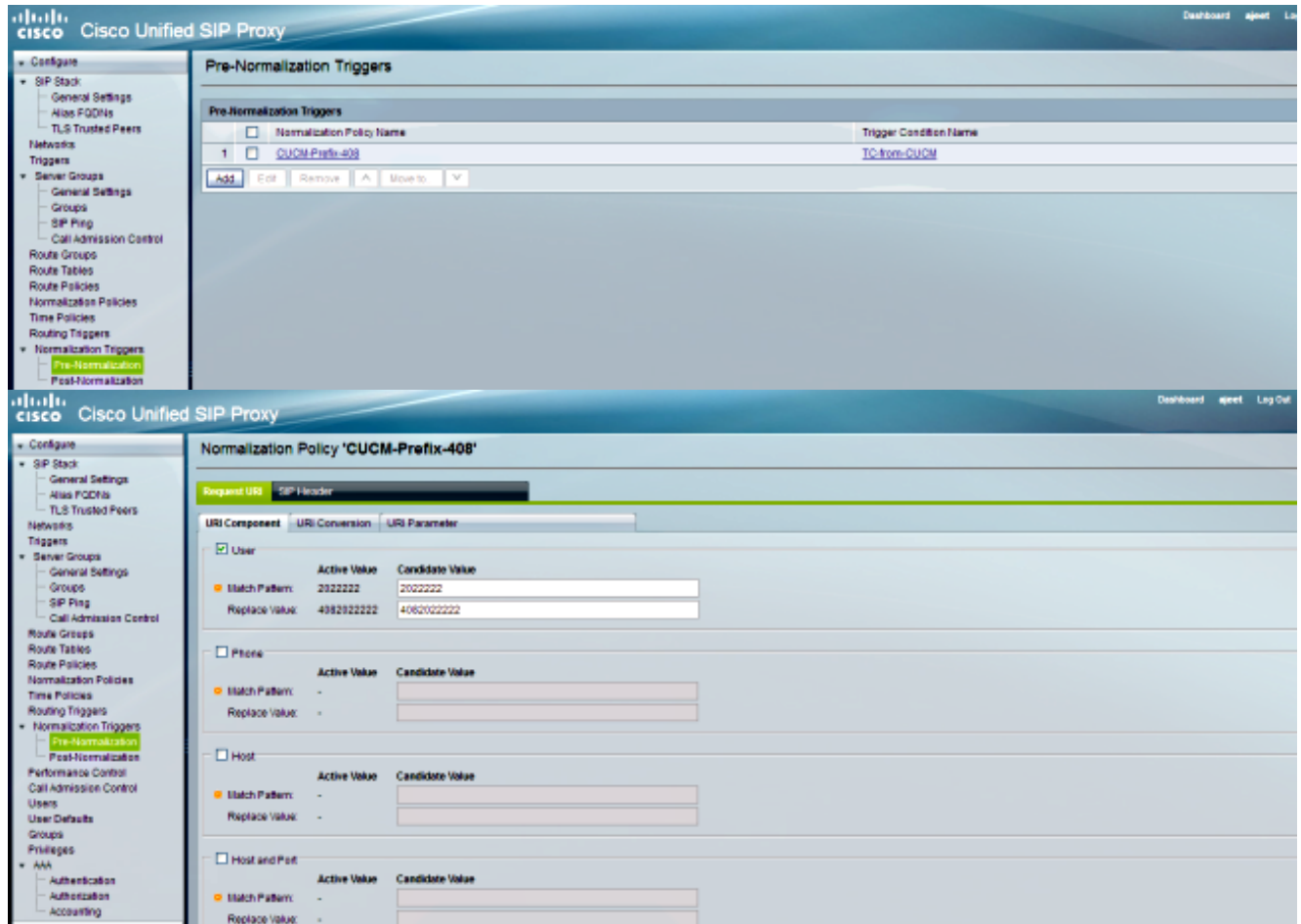
CLI

```
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



DEBUGAR

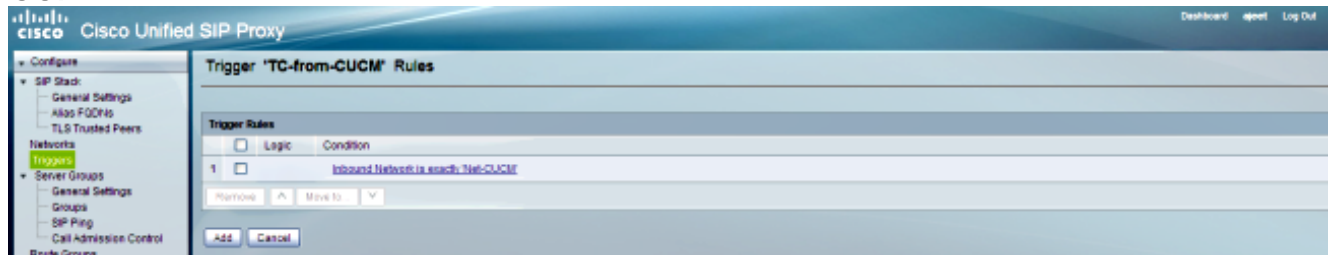
```
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:373 util.Normalization -  
Entering Normalization(moduleRequest:pre-normalize  
) [REQUESTI.12] DEBUG 2013.02.28 00:34:03:373 conditions.RegexCondition -  
inNetwork='Net-CUCM'  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:373 conditions.RegexCondition -  
IN_NETWORK: 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. A condição do disparador (TC-de-CUCM) é combinada.

CLI

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

GUI



DEBUGAR

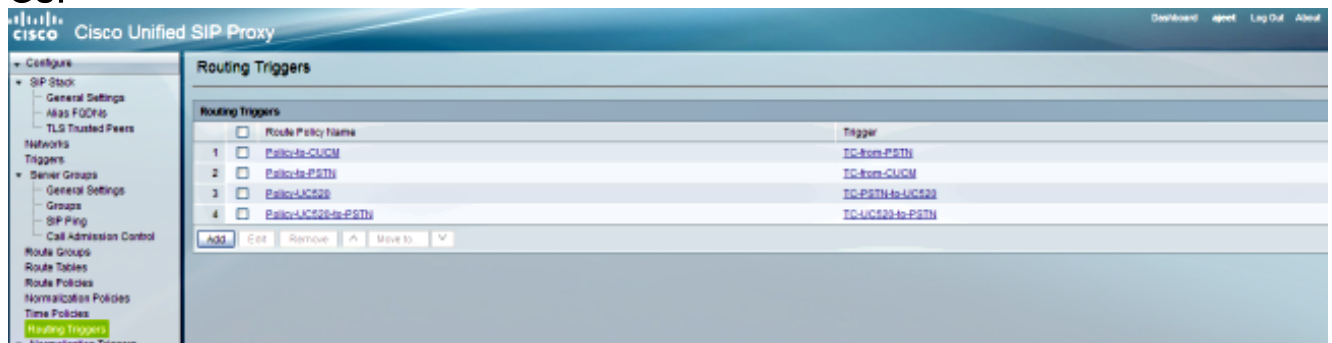
```
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.RegexCondition -  
inNetwork='Net-CUCM'  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.RegexCondition -  
IN_NETWORK: Net-CUCM  
[REQUESTI.12] DEBUG 2013.02.28 00:34:03:374 conditions.AbstractRegexCondition -  
pattern(^\\QNet-CUCM\\E$),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

5. A configuração do disparador do roteamento é verificada a fim descobrir a política da rota (Política-à-PSTN) essa os fósforos baseados na condição do disparador (TC-de-CUCM).

CLI

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

GUI



DEBUGAR

```
[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 -
```

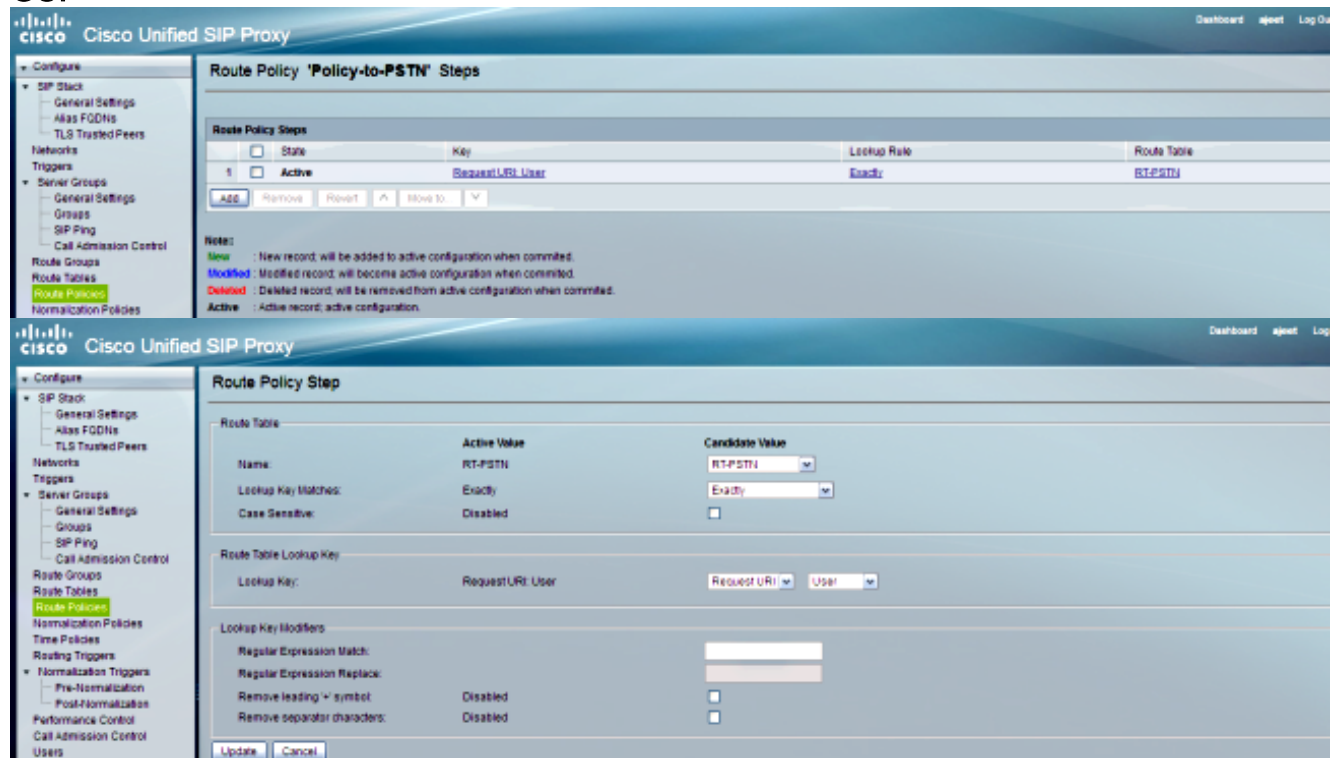
ModuleTrigger.eval() got the policy, executing it ...

6. A configuração da política da rota (Política-à-PSTN) é verificada a fim encontrar a tabela de rota (RT-PSTN) essa fósforos.

CLI

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

GUI



DEBUGAR

```
[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:408202222@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 408202222  
[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=408202222  
[REQUESTI.12] INFO 2013.02.28 00:34:03:376 modules.XCLLookup -  
table is RT-PSTN
```

7. A configuração da tabela de rota (RT-PSTN) é verificada a fim encontrar o destino do alvo (SG-PSTN).

CLI

```

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

```

GUI

The top screenshot shows the 'Route Table 'RT-PSTN' Routes' configuration page. It features a table with columns: State, Key, Route Group, Target Destination, Next Hop, Response, Lookup Route Policy, Default SIP Route, and Network. A single route is listed with Key '4082022222', Route Group '-', Target Destination 'SG-PSTN', Next Hop '-', Response '-', Lookup Route Policy '-', Default SIP Route '-', and Network 'Net-PSTN'. Below the table are buttons for 'Add', 'Remove', 'Revert', 'Import', and 'Export Active Routes'. A note section explains the status of records: New (added), Modified (becomes active), Deleted (removed), and Active (active).

The bottom screenshot shows the 'Route Table 'RT-PSTN' Route' configuration page for a specific route. It displays the 'Active Value' and 'Candidate Value' for the route. The 'Active Value' shows: Key: 4082022222, Route Type: destination, Host/Server Group: SG-PSTN, Port: (empty), Transport Type: (empty), Network: Net-PSTN. The 'Candidate Value' shows: Key: 4082022222, Route Type: destination, Target Destination: (radio buttons for Target Destination, Next Hop, Both), Target Destination: Host/Server Group: SG-PSTN, Port: (empty), Transport Type: none, Network: Net-PSTN. Buttons for 'Update' and 'Cancel' are at the bottom.

DEBUG

```

[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,
lookupplengt=-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. A sequência da Cargo-normalização é executada.

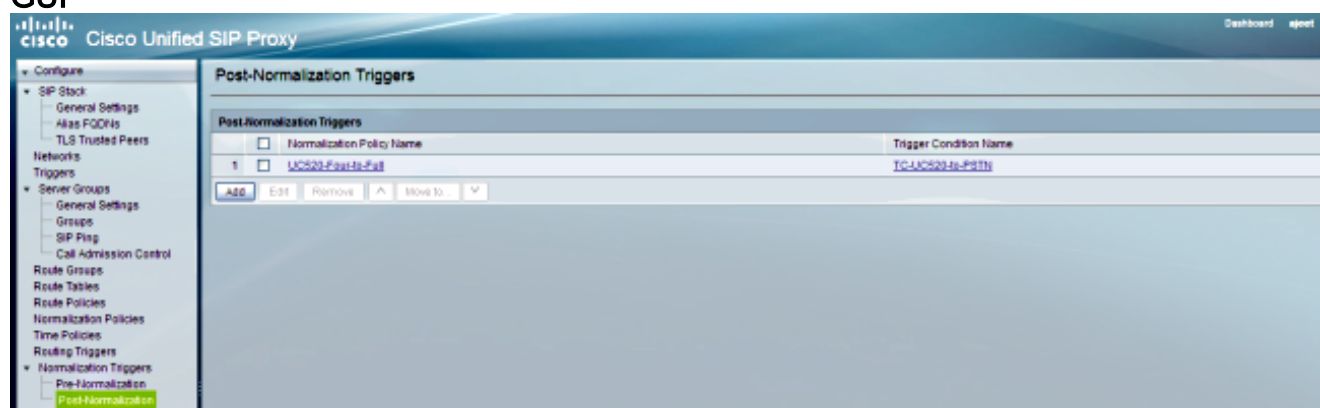
CLI

```

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

```

GUI



DEBUGAR

```

[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. A configuração do grupo de servidor (SG-PSTN) é verificada a fim encontrar o IP address do elemento, e o atendimento é distribuído ao possível da melhor ruta baseado no Q-valor e na configuração do peso.

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



DEBUGAR

```
[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. O SORVO CONVIDA é enviado ao elemento selecionado.

```
[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~clb77ee1-4af9-4a41-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

Cenário 3

Fluxo de chamadas: **Telefone IP 1 -- CME 1 -- SORVO -- LIMITE -- SORVO -- CME 2 -- Telefone IP 2**

Discar 4001 ou 4002 do telefone IP 1 a fim alcançar Ramais no telefone IP 2.

O CME 2 é UC520 nesta encenação e o CME 1 atua como o PSTN.

1. O SORVO CONVIDA vem ao LIMITE 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 ---

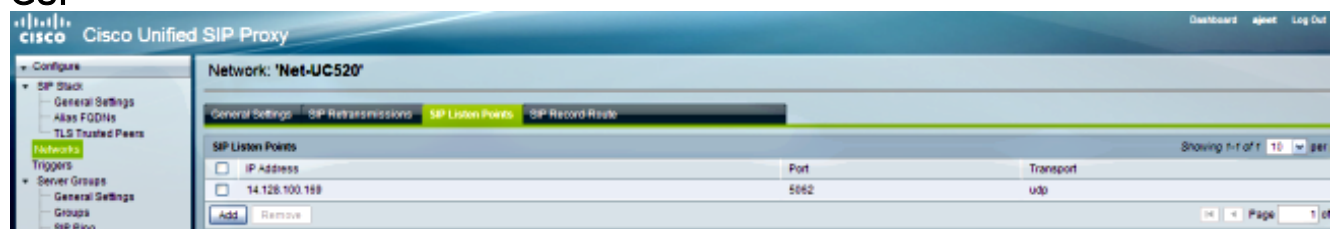
2. O atendimento é aceitado na configuração da rede (Net-UC520) que combina.

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



DEBUGAR

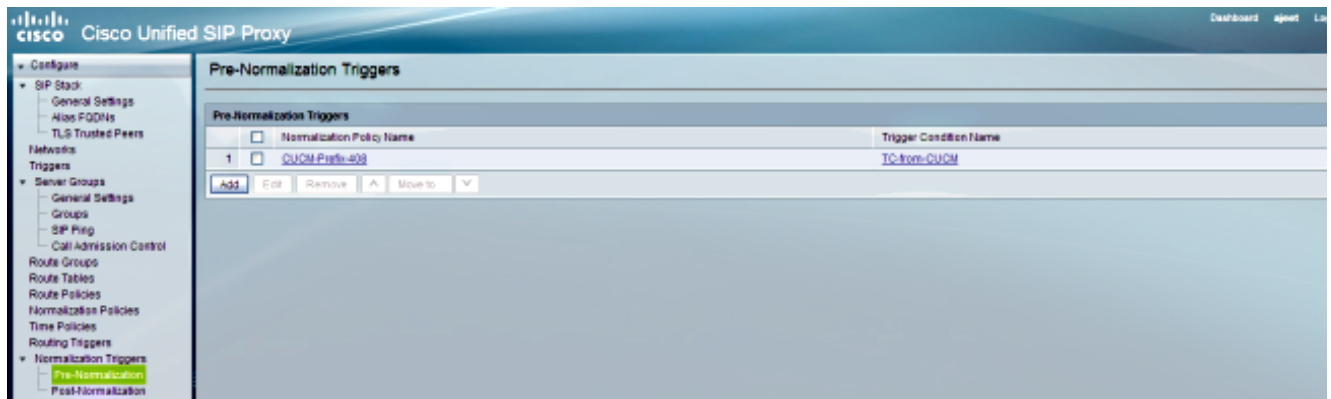
```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 conditions.RegexCondition -
inNetwork='Net-UC520'
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 conditions.RegexCondition -
IN_NETWORK: Net-UC520
```

3. A sequência da PRE-normalização é executada.

CLI

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

GUI



DEBUGAR

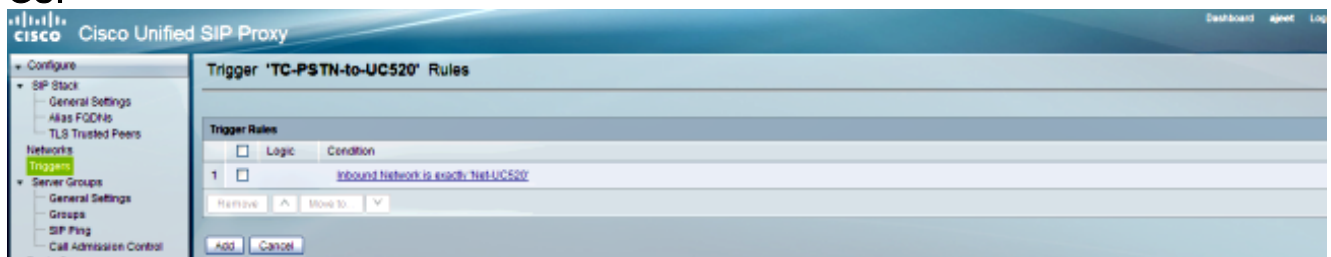
```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 util.Normalization -
Entering Normalization(moduleRequest:pre-normalize)
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 conditions.RegexCondition -
inNetwork='Net-UC520'
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:362 conditions.RegexCondition -
IN_NETWORK: Net-UC520
[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. A condição do disparador (TC-PSTN-to-UC520) é combinada.

CLI

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

GUI



DEBUGAR

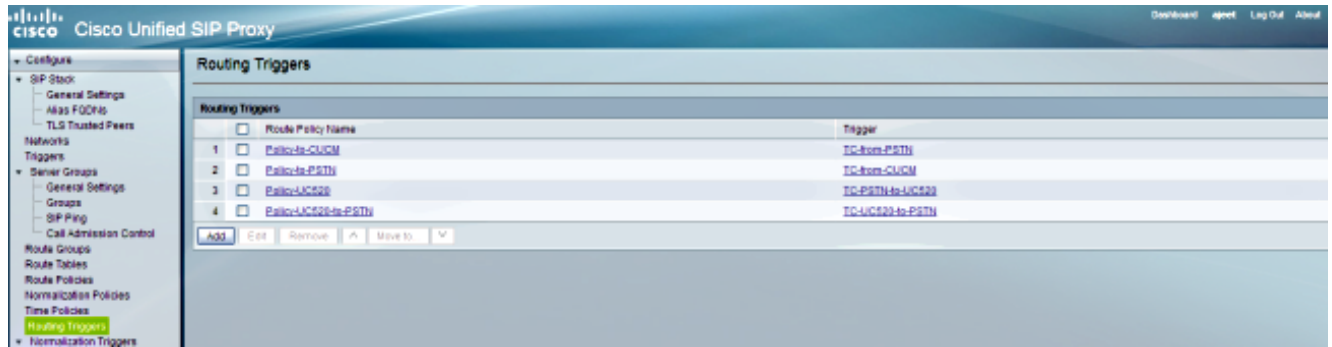
```
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 conditions.RegexCondition -
inNetwork='Net-UC520'
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 conditions.RegexCondition -
IN_NETWORK: Net-UC520
[REQUESTI.10] DEBUG 2013.02.28 05:28:57:363 conditions.AbstractRegexCondition -
pattern(`QNet-UC520\E$), toMatch(Net-UC520)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

5. A configuração do disparador do roteamento é verificada a fim encontrar a política da rota (Policy-UC520) essa os fósforos baseados na condição do disparador (TC-PSTN-to-UC520).

CLI

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

GUI



DEBUGAR

```
[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. A configuração da política da rota (Policy-UC520) é verificada a fim encontrar a tabela de rota (RT-UC520) essa fósforos.

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



DEBUGAR

```

[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. A configuração da tabela de rota (RT-UC520) é verificada a fim encontrar o destino do alvo (RG-UC520).

CLI

```

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

```

GUI

The top screenshot shows the 'Route Table 'RT-UC520' Routes' configuration page. It features a table with columns: State, Key, Route Group, Target Destination, Next Hop, Response, Lookup Route Policy, Default SIP Route, and Network. The table contains one active route with Key '2222' and Route Group 'RG-UC520'. Below the table are buttons for 'Add', 'Remove', 'Reset', 'Import', and 'Export Active Routes'. A note section explains the status of records: New (added to active), Modified (becomes active), Deleted (removed from active), and Active (active configuration).

The bottom screenshot shows the 'Route Table 'RT-UC520' Route' configuration page. It displays the configuration for a specific route with the following details: Active Value (Key: 2222), Route Type (route-group), and Route Group (RG-UC520). The Candidate Value section shows the selected values: Key: 2222, Route Type: route-group, and Route Group: RG-UC520. Buttons for 'Update' and 'Cancel' are at the bottom.

DEBUGAR

```

[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. A sequência da Cargo-normalização é executada.

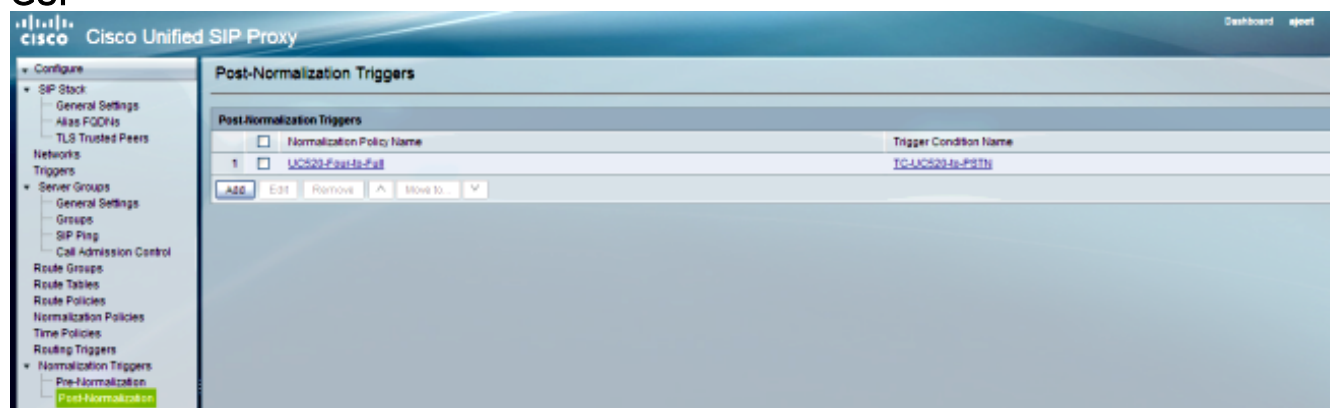
CLI

```

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

```

GUI



DEBUGAR

```

[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. A configuração do grupo de rotas é verificada a fim encontrar o IP address do elemento, e o atendimento é distribuído ao possível da melhor ruta baseado no Q-value e na configuração 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

The image displays three screenshots of the Cisco Unified SIP Proxy GUI, illustrating the configuration process for a Route Group and its associated Server Group.

Top Screenshot: Route Group 'RG-UC520'
 This screenshot shows the configuration page for the Route Group 'RG-UC520'. The 'Group Settings' tab is active. A table titled 'Route Group Elements' lists the configured elements:

State	Host / Server Group	Port	Transport	Next Hop	Network	Q-Value	Weight	Time Policy	Fallover Response Codes
<input checked="" type="checkbox"/>	SG-UC520	-	-	-	Net-UC520	1.0	0	-	{502, 503}

Below the table, there are 'Add', 'Remove', and 'Reset' buttons. A 'Notes' section provides instructions for adding, modifying, deleting, and activating records.

Middle Screenshot: Route Group 'RG-UC520' Element
 This screenshot shows the configuration page for an element within the Route Group 'RG-UC520'. The 'Target Destination' section is filled with the following values:

- Host / Server Group: SG-UC520
- Port: [Empty]
- Transport Type: none (default)

The 'Options' section shows the following values:

- Network: Net-UC520 (Active Value) / Net-UC520 (Candidate Value)
- Q-Value: 1.0 (Active Value) / 1.0 (Candidate Value)
- Weight: 0 (Active Value) / 0 (Candidate Value)
- Time Policy: None (Active Value) / None (Candidate Value)
- Fallover Response Codes: 502, 503 (Active Value) / 502, 503 (Candidate Value)

'Update' and 'Cancel' buttons are visible at the bottom.

Bottom Screenshot: Server Group 'SG-UC520'
 This screenshot shows the configuration page for the Server Group 'SG-UC520'. The 'Group Settings' tab is active. A table titled 'Server Group Elements' lists the configured elements:

State	IP Address	Port	Transport	Nested Server Group	Q-Value	Weight
<input checked="" type="checkbox"/>	14.128.100.161	5060	udp	-	1.0	0

'Add', 'Remove', and 'Reset' buttons are visible below the table.

DEBUGAR

```

[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. O SORVO CONVIDA é enviado ao elemento selecionado.

```

[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
```

Cenário 4

Fluxo de chamadas: **Telefone IP 1 -- CME 1 -- SORVO -- LIMITE -- SORVO -- CME 2 -- Telefone IP 2**

Discar 4444 do telefone IP 2 que é mudado a 415 240 4444 com Cargo-normalização a fim alcançar o telefone IP 1.

O CME 2 é UC520 nesta encenação e o CME 1 atua como o PSTN.

1. O SORVO CONVIDA vem ao LIMITE 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

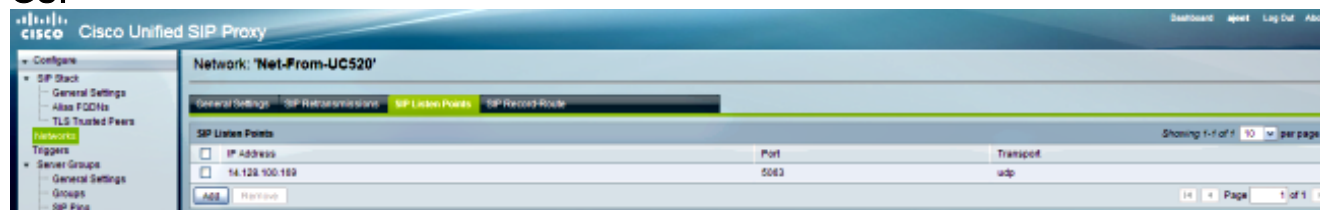
--- end of packet ---
```

2. O atendimento é aceitado na configuração da rede (Net-From-UC520) que combina.

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



DEBUGAR

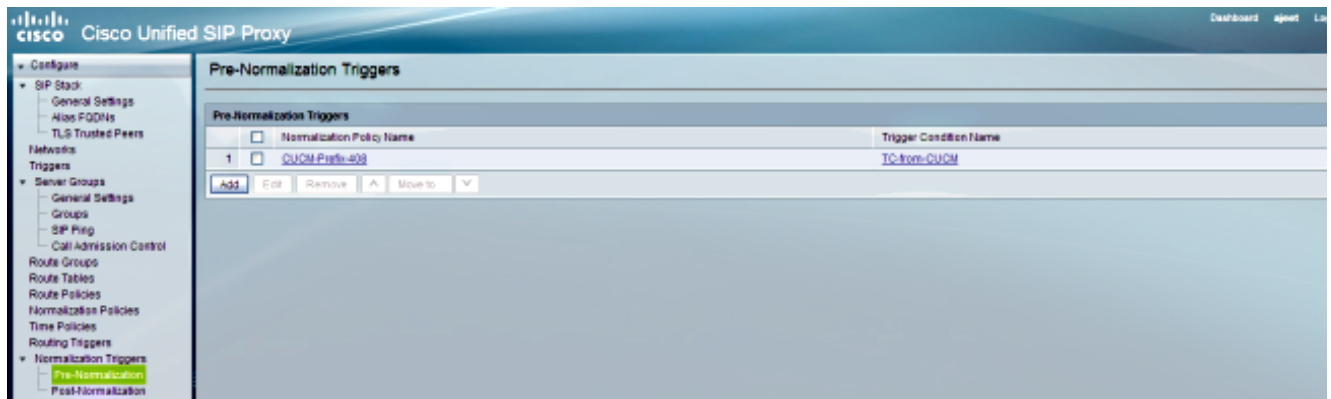
```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
inNetwork='Net-From-UC520'
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
IN_NETWORK: Net-From-UC520
```

3. A sequência da PRE-normalização é executada.

CLI

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

GUI



DEBUGAR

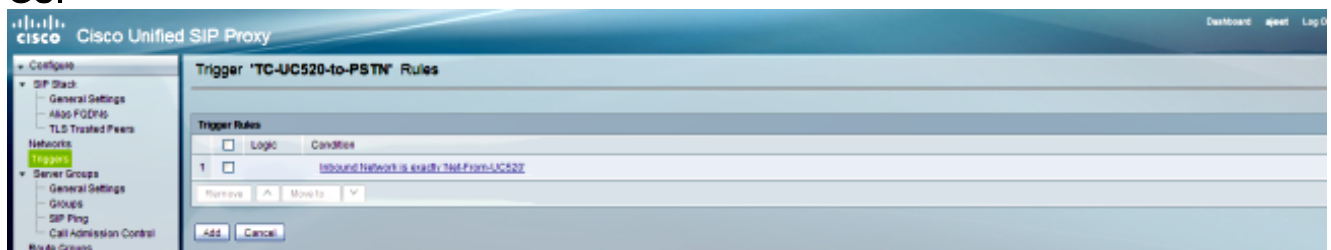
```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 util.Normalization -
Entering Normalization(moduleRequest:pre-normalize)
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
inNetwork='Net-From-UC520'
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
IN_NETWORK: 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. A condição do disparador (TC-UC520-to-PSTN) é combinada.

CLI

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

GUI



DEBUGAR

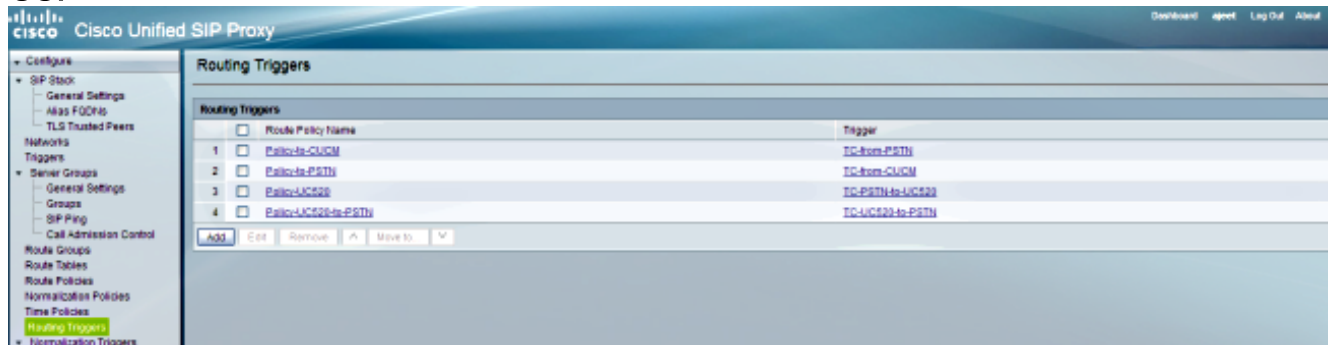
```
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
inNetwork='Net-From-UC520'
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:229 conditions.RegexCondition -
IN_NETWORK: Net-From-UC520
[REQUESTI.5] DEBUG 2013.02.28 07:06:57:230 conditions.AbstractRegexCondition -
pattern(`\QNet-From-UC520\E$),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

5. A configuração do disparador do roteamento é verificada a fim encontrar a política da rota (Policy-UC520-to-PSTN) essa os fósforos baseados na condição do disparador (TC-UC520-to-PSTN).

CLI

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

GUI



DEBUGAR

```
[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. A configuração da política da rota (Policy-UC520-to-PSTN) é verificada a fim encontrar a tabela de rota (RT-UC520-PSTN) essa fósforos.

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



DEBUGAR

```

[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. A configuração da tabela de rota (RT-UC520-PSTN) é verificada a fim encontrar o destino do alvo (RG-UC520).

CLI

```

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

```

GUI

The top screenshot shows the 'Route Table 'RT-UC520-PSTN' Routes' configuration page. It features a table with columns: State, Key, Route Group, Target Destination, Next Hop, Response, Lookup Route Policy, and Default SIP Route. A single route is listed with Key '3333' and Route Group 'RG-UC520to-PSTN'. Below the table are buttons for 'Add', 'Remove', 'Reset', 'Import', and 'Export Active Routes'. A notice section indicates that new records will be added to active configuration when committed, modified records will become active, and deleted records will be removed.

The bottom screenshot shows the 'Route Table 'RT-UC520-PSTN' Route' configuration page. It displays the 'Active Value' section with fields for Key (3333), Route Type (route-group), and Route Group (RG-UC520-to-PSTN). The 'Candidate Value' section shows a list of candidates with 'Key 3333' selected. Below are 'Update' and 'Cancel' buttons.

DEBUGAR

```

[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, lookuplenght=-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. A sequência da Cargo-normalização é executada.

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

The top screenshot shows the 'Post-Normalization Triggers' configuration page in the Cisco Unified SIP Proxy GUI. The left sidebar shows the navigation tree with 'Post-Normalization' selected. The main area displays a table of triggers:

Post-Normalization Triggers	Trigger Condition Name
1 <input type="checkbox"/> UC520-Four-to-Full	TC-UC520-to-PSTN

The bottom screenshot shows the 'Normalization Policy 'UC520-Four-to-Full'' configuration page. The left sidebar shows the navigation tree with 'Post-Normalization' selected. The main area displays the policy configuration:

Request URI: SIP Header

URI Component: User

URI Component	URI Conversion	URI Parameter
<input checked="" type="checkbox"/> User		
Match Pattern:	Active Value: 4444	Candidate Value: 4444
Replace Value:	85224044444	85224044444

DEBUGAR

```
[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. A configuração do grupo de rotas é verificada a fim encontrar o IP address do elemento, e o atendimento é distribuído ao possível da melhor rota baseado no Q-valor e na configuração 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

The top screenshot shows the Cisco Unified SIP Proxy GUI configuration page for the Route Group 'RG-UC520-to-PSTN'. The 'Route Group Elements' table is as follows:

State	Host/Server Group	Port	Transport	Next Hop	Network	Q-value	Weight	Time Policy	Fallover Response Codes
<input checked="" type="checkbox"/>	14.128.100.150	-	-	-	Net-From-UC520	1.0	0	-	{502, 503}

The bottom screenshot shows the configuration for a Route Group Element. The 'Target Destination' section includes 'Host/Server Group' (14.128.100.150), 'Port' (empty), and 'Transport Type' (None (Default)). The 'Options' section includes 'Network' (Net-From-UC520), 'Q-Value' (1.0), 'Weight' (0), 'Time Policy' (None), and 'Failover Response Codes' (502,503).

DEBUGAR


```
[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. O SORVO CONVIDA é enviado ao elemento selecionado.

```
[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
```

Configuração para todas as quatro encenações

Está aqui a configuração completa do LIMITE para todos os quatro cenários de chamada descritos neste original:

```
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)#
```

Verificar

No momento, não há procedimento de verificação disponível para esta configuração.

Troubleshooting

Atualmente, não existem informações disponíveis específicas sobre Troubleshooting para esta configuração.

Informações Relacionadas

- [O guia de configuração de CLI para Cisco unificou a liberação 8.5 do proxy do SORVO](#)
- [O guia da administração de GUI para Cisco unificou a liberação 8.5 do proxy do SORVO](#)
- [Processamento de chamadas do LIMITE](#)
- [Suporte Técnico e Documentação - Cisco Systems](#)