

SBC 8.2 - Configure SBC for Forking

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Configure the SBC for Forking

The SBC supports the forking functionality, where it can fork the calls to Microsoft Teams and Enterprise PBX (for example, Cisco or Avaya). This functionality provisions the user to migrate the traffic from the Enterprise PBXs to the Microsoft Teams.

The following section defines the additional configurations that need to be performed in addition to the standard Teams DR configuration.



Note

This forking functionality is supported only for the calls that are originated from the PSTN side, and not from the Teams side since the main intention is to facilitate the migration between Enterprise PBXs and the Microsoft Teams. If a Teams user dials a number, the routing sends the call out to the PSTN leg/PBX leg, which does not result in both PSTN and Teams user ringing. It is expected that the Teams user "clicks" on someone's name in the Teams client window to call them directly in teams.

Common SBC Configurations

Configuration at the Forked Non-Teams leg

Zone

Create a Zone that groups the set of objects that are used for the communication to the PSTN.

```
set addressContext default zone CISCO_ZONE id 6
commit
```

SIP Signaling Port

Create a SIP Signaling Port (the logical address permanently bound to a specific zone) to send and receive SIP call signaling packets.



Note

Replace "x.x.x.x" with the actual IP address.

```
set addressContext default zone CISCO_ZONE id 6 sipSigPort 2 ipInterfaceGroupName LIF1 ipAddressV4 x.x.x.x
portNumber 5060 transportProtocolsAllowed sip-tcp,sip-udp,sip-tls-tcp
set addressContext default zone CISCO_ZONE id 6 sipSigPort 2 mode inService state enabled
commit
```

IP Static Route

Create a default route for the destination IP to enter into the network through a particular interface.



Note

Replace "x.x.x.x" with the destination IP, "Y" with the prefix length, and "z.z.z.z" with the PKT0 gateway IP address.

```
set addressContext default staticRoute X.X.X.X Y Z.Z.Z.Z LIF1 PKT0_V4 preference 100
commit
```

SIP Trunk Group

Create a SIP Trunk Group towards the forked non-Teams side.



You must use capital letters to configure the Trunk Group names.



Do not configure any 'media toneAndAnnouncementProfile' on this Trunk Group.

Use the DLRBT only on the PSTN and Teams trunk group sides as per the standard Teams DR configuration.

```
set addressContext default zone CISCO_ZONE sipTrunkGroup CISCO_TG media mediaIpInterfaceGroupName LIF1
set addressContext default zone CISCO_ZONE sipTrunkGroup CISCO_TG media sdpAttributesSelectiveRelay enabled
set addressContext default zone CISCO_ZONE sipTrunkGroup CISCO_TG signaling rel100Support enabled
set addressContext default zone CISCO_ZONE sipTrunkGroup CISCO_TG signaling relayNonInviteRequest enabled
set addressContext default zone CISCO_ZONE sipTrunkGroup CISCO_TG signaling honorMaddrParam enabled
set addressContext default zone CISCO_ZONE sipTrunkGroup CISCO_TG services dnsSupportType a-only
set addressContext default zone CISCO_ZONE sipTrunkGroup CISCO_TG mode inService state enabled
commit
```

Configure the ERE for Forking

Create AoR Group Profile

Create The AoR Group Profile ID. The following URI's go out to the forked Egress legs.

- sip.pstnhub.microsoft.com: The domain towards the Teams.
- 172.16.100.69: The IP address of the other forked leg.

```
set profiles aorGroupProfile TEAMS_FORK_82 aorDataList sip:+19990001001@sip.pstnhub.microsoft.com;0;0;
user=phone,sip:+19990001001@172.16.100.69;0;0;user=phone
set profiles aorGroupProfile TEAMS_FORK_82 aorDialogAttribute useFirst18x
set profiles aorGroupProfile TEAMS_FORK_82 waitForAnswer 0
commit
```

Create VOIP Subscriber

Create the VOIP Subscriber entry. This number is the called number from the PSTN side and host part is the SIP Signaling IP of the side towards Ingress leg.

```
set profiles voipSubscriber sip:9990001001@172.16.106.132 aorGroupProfile TEAMS_FORK_82 egressRURIAttribute
aorEgress
```

IP-PEER towards Forked Non-Teams Leg

Create an IP-Peer towards forked non-Teams leg.

```
set addressContext default zone CISCO_ZONE ipPeer CISCO_IPP ipAddress x.x.x.x ipPort yyyy
commit
```

Routing Label Towards Forked Non-Teams Leg

Create a Routing Label with a single Routing Label Route to bind the PSTN Trunk Group with the PSTN IP Peer.

```
set global callRouting routingLabel CISCO_RL routingLabelRoute 1 trunkGroup CISCO_TG ipPeer CISCO_IPP inService
inService
commit
```

Call Routing

SIP Domain

Add one more global SIP domain entry. Ensure this entry is the IP address or domain name of the forked non-Teams leg. This will be used in case of call routing towards the forked non-Teams leg.

```
set global sipDomain 172.16.100.69
commit
```

Add two routes per called number:

- Towards the forked non-Teams leg with the domain name as the PSTN end point IP/domain which is defined in the above SIP domain section.
- Towards the forked Teams leg with domain name as the Teams domain.

Routing label towards forked non-Teams leg:

```
set global callRouting route none Sonus_NULL Sonus_NULL username +19990001001 Sonus_NULL all all ALL none
172.16.100.69 routingLabel CISCO_RL
commit
```

Routing label towards forked Teams leg:

```
set global callRouting route none Sonus_NULL Sonus_NULL username +19990001001 Sonus_NULL all all ALL none SIP.
PSTNHUB.MICROSOFT.COM routingLabel TEAMS_RL
commit
```

Configure the PSX for Forking

Softswitch

Enable the call forking flag in the Softswitch screen.

Figure 1: Softswitch 1/1

- Enable SSG For Emergency
- Enable SSG For Government Emergency
- Execute Services After Trigger
- Include Accept RPH In 417 Responses
- Ingress Local Ring Back Tone Preferred Over Egress Local Ring Back Tone
- Populate Final Routing Label ID In Billing CDR
- Use Incoming ETS Resource Value For Generated Response
- Populate Primary and Final Routing Label Id in Billing CDR
- Do Not Use Default Port In 300 Contact
- Fallback to DEFAULTSIPSERVER to pick SMM Profile
- Skip Security Check For SIPE
- Truncate Trailing dot in HostName
- Enable Call Forking
- Use Terminating Domain Port in R-URI

Create AoR Group Profile

Create AoR Group Profile ID. The following URI's go out in the forked Egress legs.

Figure 2: AoR Group Profile creation 1/1

AoR Group Profile Id:

Address Of Records

URI Scheme:

User Part:

Host Part:

Delay Before Ringing:

Answer Too Soon:

user=phone

Address of Record	URI Scheme	Delay Before Ringing	Answer Too Soon	User Params
+19990001001@sip.pstnhub.microsoft.com	sip	0	0	
+19990001001@172.16.100.69	sip	0	0	

Preferred Identity

URI Scheme:

User Part:

Host Part:

Active Early Dialog Selection Behavior

Use First 18x Use Last 18x

Wait for Answer:

Create VOIP Subscriber

Create the VOIP Subscriber entry. This number is the called number from the PSTN side and host part is the SIP Signaling IP of the side towards Ingress leg.

Figure 3: VOIP Subscriber creation 1/1

VOIP Subscriber

VOIP Subscriber

*SQL Search Criteria (6 entries)

User Name: *

Domain Name: *

URI Scheme: <All>

Search More...

URI Scheme	User Name	Domain Name	Sequence Num...
sip	9550912968	172.16.108.138	141
sip	9550912969	172.16.108.138	142
sip	9990001001	172.16.108.132	81
sip	9990001001	172.16.108.138	123
sip	9990001002	172.16.108.132	101
sip	9990001002	172.16.108.138	124

URI Scheme: sip

User Part: 9990001001

Host Part: 172.16.108.132

VoR Group Profile: TEAMS_FORK_82

Egress RURI:

Send AoR in Egress RURI Send CalledURI in Egress RURI

SIP Domain

Create a SIP Domain. This is the forked non-Teams leg IP.

Figure 4: SIP Domain creation 1/1

SIP Domain

SIP Domain

*SQL Search Criteria (1 entries)

SIP Domain: *100.69*

Search More...

SIP Domain	Domain Name
172.16.100.69	172.16.100.69

DOMAIN: 172.16.100.69

DOMAIN NAME (Unique): 172.16.100.69

Ingress Processing:

Default Gateway: TEAMS

Default Trunk Group: PSTN_TG

Non-Local

Trunk Group

Create a Trunk Group towards the forked non-Teams leg.



Do not provision any 'Tone and Announcement profile' on this Trunk Group.

Use the DLRBT only on the PSTN and Teams trunk group sides as per the standard Teams DR configuration.

Figure 5: Trunkgroup creation 1/3

Trunk Group: CISCO_TC Unrestricted

Gateway: NATSWE

Description:

Auto Recall Profile: <None>

Call Processing Localization Variant: North America

Calling Area: <None>

Carrier: 0000

Carrier Selection Priority: <None>

Country: 1 - USA, Canada and Caribbean

DDI Range Profile: <None>

Destination Switch Type: Access

Direction: Two Way

Element Routing Priority Profile: TEAMS

Feature Control Profile: DEFAULT_SIP_FC_ACCESS

IP Signaling Profile: PSTN_IPSP

LATA: <None>

Local Recursion Profile: <None>

Maximum Satellite Hops: Three or More Satellite Hops

Network Data Partition: 0

Network Data Net: 0

Next Hop Domain: <None>

Number Analysis Profile: <None>

Number Length Enforcement: <None>

Originating Carrier: <None>

PPR Profile: <None>

Figure 6: Trunkgroup creation 2/3

Pseudo Carrier: <None>

Remote Sip Peer Type: None

Region: <None>

Routing Criteria Profile: <None>

SCP Business Service Group: 0

Signaling Profile: DEFAULT_IP_PROFILE

Signaling Flag: SIP

SIP Domain: <None>

SIP Response Code Profile: <None>

TDM Type: Other

Tone And Announcement Profile: <None>

Trunk Group COS:

Trunk Group COS Profile: <None>

Trunk Group Domain: <None>

Trunk Number:

Zone Index Profile: DEFAULT

ZZ Profile: <None>

Charge Band Profile: <None>

Enum Domain Profile: <None>

Flexible Variable Rule: <None>

STI Profile: <None>

Figure 7: Trunkgroup creation 3/3

IPTG

IP Signaling Peer Group: <None>

IP Peer Supported

Packet Service Profile ID Group: PSTN_PSP

Egress IP Signaling Profile: PSTN_IPSP

Routing Label

Routing Label Towards the Teams Leg

Figure 8: Route creation 1/2

Routing Label: NATSWE_TEAMS

Use Entity Type <None>

Partition: Ignore

Destination: Ignore

Route Prioritization Type: Sequence

Route Prioritization Type For Equal:

TAR Route Prioritization Type: Sequence

Route Prioritization Type For Equal:

Local Routes: Pass Only Local Routes

Flags: Cont

Route

Type: GSX Gateway

Gateway: NATSWE

Trunk Group: TEAMS_TG

IP Peer: TEAMS_PEER1

Sequence: 1

Proportion: 0

Cost: 1000000

TAR Action: Normal

TAR Location: 0

DM/PM Rule: <None> Apply Later

Testing: Normal Test Non-Test

In Service Skip Local Recursion

Signing Local Tagging Verification

OK Cancel

Use

Use

Least Cost Routing

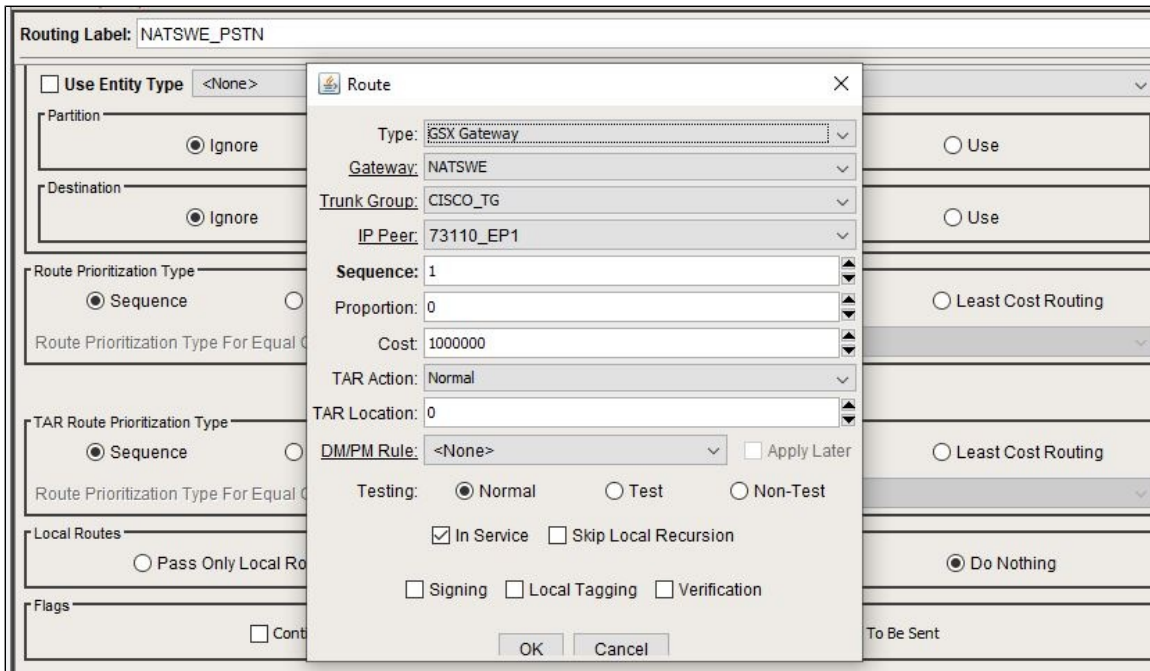
Least Cost Routing

Do Nothing

To Be Sent

Routing Label Towards the Forked PSTN Leg

Figure 9: Route creation 2/2



Call Routing

Add two routes per called number.

- Towards the forked PSTN leg with the domain name as the PSTN end point IP/domain.
- Towards the forked Teams leg with domain name as the Teams end point domain.

Username Routing

Figure 10: Routing creation 1/2

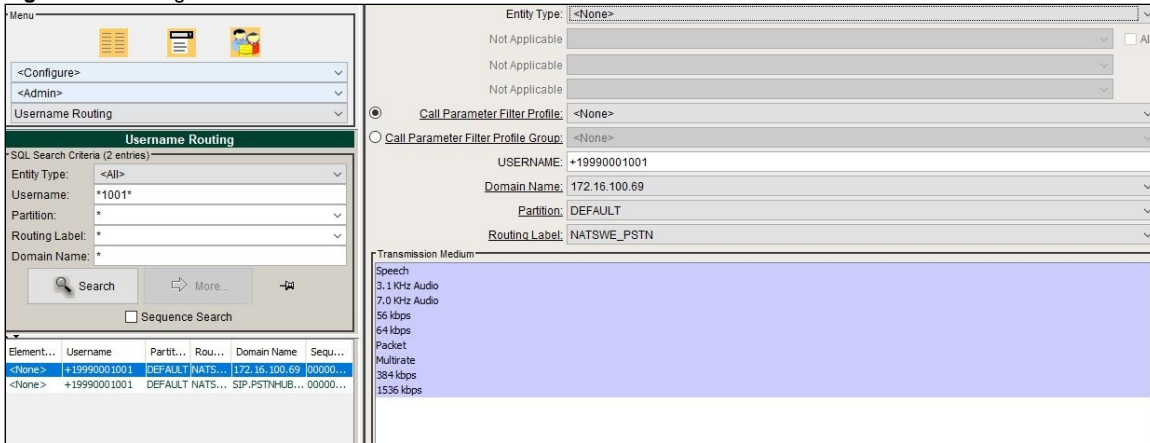


Figure 11: Routing creation 2/2

Menu

- <Configure>
- <Admin>
- Username Routing

Username Routing

SQL Search Criteria (2 entries)

Entity Type: <All>

Username: *1001*

Partition: *

Routing Label: *

Domain Name: *

Sequence Search

Element...	Username	Partit...	Rou...	Domain Name	Sequ...
<None>	+19990001001	DEFAULT NATS...	172.16.100.69	00000...	
<None>	+19990001001	DEFAULT NATS...	SIP.PSTNHUB...	00000...	

Entity Type: <None>

Not Applicable All

Not Applicable

Not Applicable

Call Parameter Filter Profile: <None>

Call Parameter Filter Profile Group: <None>

USERNAME: +19990001001

Domain Name: SIP.PSTNHUB.MICROSOFT.COM

Partition: DEFAULT

Routing Label: NATSWE_TEAMS

Transmission Medium

Speech

3.1 KHz Audio

7.0 KHz Audio

56 kbps

64 kbps

Packet

Multirate

384 kbps

1536 kbps