



Grandstream Networks, Inc.

Guide on Interconnecting Multiple
UCM6100 series IPPBX

OVERVIEW

This document describes basic configuration to interconnect two UCM6100s. In this example, we will be using two UCM6102. The two locations that will be used in this example are Boston, MA and Los Angeles, Ca. The following methodology can be used for the UCM6104/6108/6116 as well. This is typically applied to the scenario where users would like to have UCM6100s share trunks as well as call from one UCM6102 extension to the other.

CONNECTING TWO UCM6102 USING PEER SIP TRUNK

CREATE PEER SIP TRUNK FOR UCM6102

On the Los Angeles UCM6102 web GUI, create an a Peer SIP Trunk by navigating to **PBX->Call Features->VoIP Turnks** and click on “Create New SIP/IAX Trunk”.

In the “Create New SIP/IAX Trunk” screen:

- Select “Peer SIP Trunk” for *Type*
- Enter a reference name for *Provider Name*. This is mainly for reference. In this example Boston is used.
- For *Host Name* enter the IP address/domain of the UCM2. In this case bostonucm.com is the domain of the other UCM6102.
- Click **Save** when done.

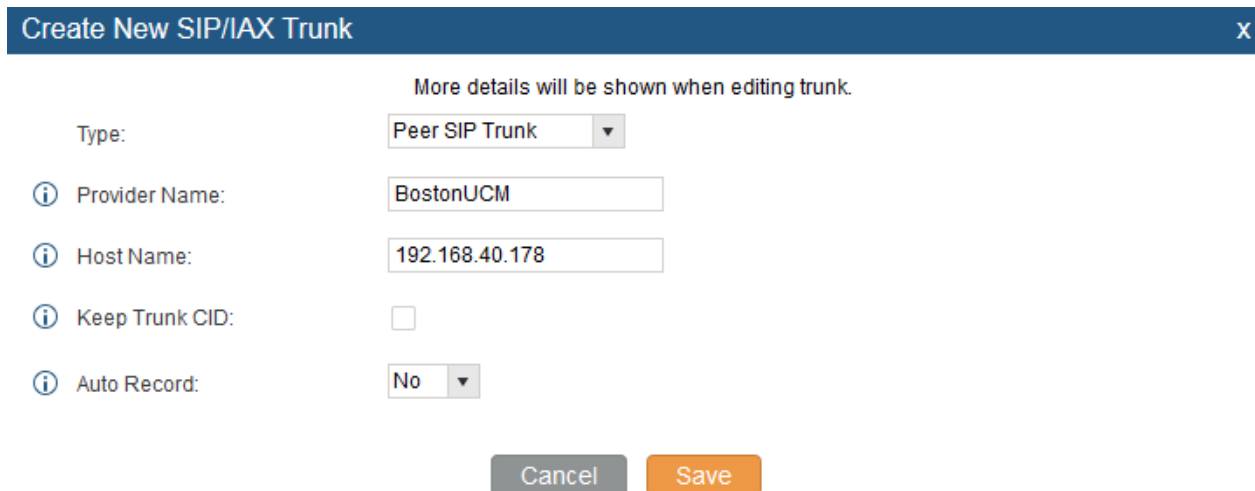
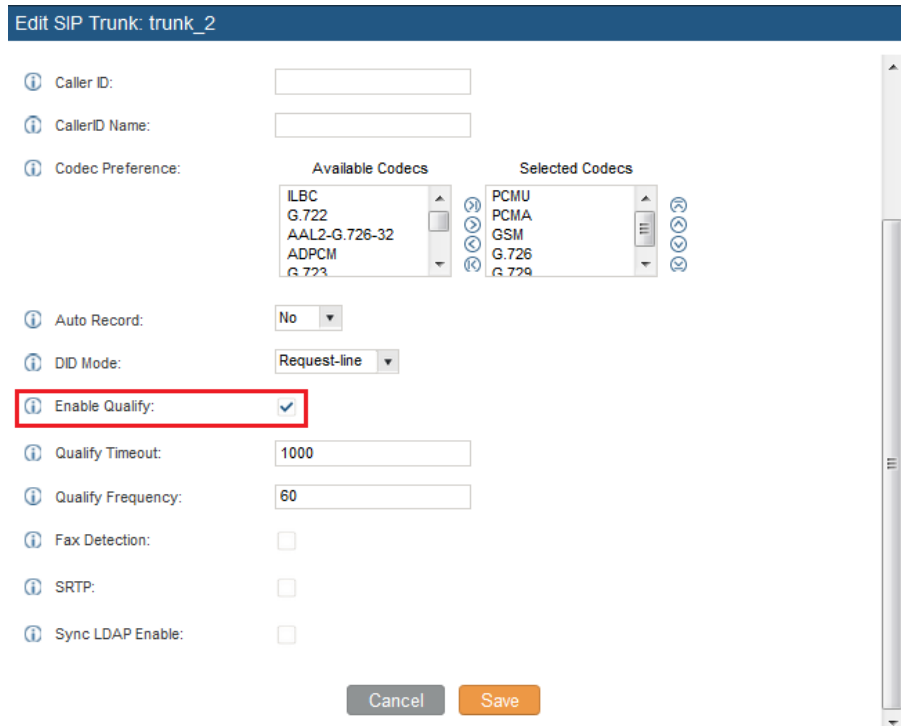


Figure 1: SIP Trunk: Create New SIP Trunk

- After clicking **Save** the new VoIP trunk will be displayed under **PBX->Call Features->VoIP Turnks**.

Click the edit pen 

- Locate the option labeled *Enable Qualify* and enable this option by clicking the check box. This is a SIP option that allows UCM1 to monitor the status of UCM2.



Edit SIP Trunk: trunk_2

Caller ID:

CallerID Name:

Codec Preference:

Available Codecs	Selected Codecs
ILBC	PCMU
G.722	PCMA
AAL2-G.726-32	GSM
ADPCM	G.726
G.723	G.729

Auto Record:

DID Mode:

Enable Qualify: ☒

Qualify Timeout:

Qualify Frequency:

Fax Detection: ☐

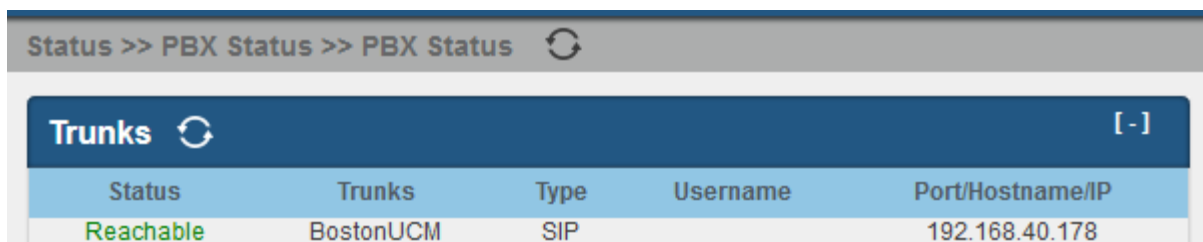
SRTP: ☐

Sync LDAP Enable: ☐

Figure 2: SIP Trunk: Set Enable Qualify

- Click **Save** when done.

Once the trunk has been created and *Enable Qualify* is set, users can view the status of the peered trunk by navigating to the **Status** page.



Status	Trunks	Type	Username	Port/Hostname/IP
Reachable	BostonUCM	SIP		192.168.40.178

Figure 3: SIP Trunk: Trunk Status

If the status of the trunk displays “Unreachable” it means that Los Angeles UCM6102 and Boston UCM6102 are unable to reach each other. Ensure physical connectivity of both devices. Also verify that from the Los Angeles network the Boston UCM6102 is responding to ping and vice versa.

Note: The steps above will need to be performed on The Boston UCM6102 as well. When configuring the Boston UCM6102, set the Peered SIP Trunk host name as the Los Angeles UCM6102 IP or domain.

CONFIGURE OUTBOUND RULE ON UCM6100

On the Los Angeles UCM6102 web GUI, go to **PBX->Basic/Call Routes->Outbound Routes** to create a new outbound rule. This would allow the extension on the Los Angeles UCM6102 to reach extensions on Boston UCM6102.

Here's what to configure:

- Calling Rule Name: This is for reference purposes so we chose to use "toBostonUCM".
- Pattern: the pattern used in this example was 1XX since the Boston UCM6102 is using an extension range of 100-199.
- Privilege Level: configured as "Internal". This can be changed to regulate which users can make outbound calls through this particular route.
- User Trunk: Since we are configuring the Los Angeles UCM6102, we'll select the SIP Peer Trunk –BostonUCM
- Click on Save.

Create New Outbound Rule

Calling Rule Name:

toBostonUCM

Pattern:

1XX

Privilege Level:

Internal

Warning: Setting privilege level at 'Internal' has potential security risks.

Password:

Send this call through trunk

Use Trunk:

SIP Peer Trunks -- BostonUCM

Strip:

Prepend:

Use Failover Trunk:

Trunks	Strip	Prepend	Options
Click to add failover trunk			

Cancel

Save

Figure 4: Outbound Rule: Create New Outbound Rule

In this example "1XX" means that when a user on the Los Angeles UCM6102 dials a 3 digit number that has a leading "1" it will use this route and send the call out to the Boston UCM6102.

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Note: These steps will also apply when configuring the outbound route from Boston UCM6102 to the Los Angeles UCM6102. The only difference in the configuration is the Pattern and the Use Trunk. Since the Los Angeles UCM6102 has an extension range of 200-299, then the Boston UCM6102 would configure the outbound route Pattern as “2XX”.

CONFIGURE INBOUND RULE ON UCM6100

To configure the Inbound Rule navigate to the web GUI, go to **PBX->Basic/Call Routes->Inbound Routes** to create a new inbound rule.

For this example, the Los Angeles UCM6102 inbound rule needs be configured so that when Boston's UCM dials a Los Angeles UCM extension it will be routed to the specified user.

On the Los Angeles UCM6102 configure the following:

- Trunks: Select the BostonUCM trunk
- DID Pattern: Enter in the patter 2XX
- Privilege Level: Internal
- Default Destination: By DID

Create New Inbound Rule X

Trunks: SIP Peer Trunks -- BostonUCM ▼

i DID Pattern: 2XX /

i Privilege Level: Internal ▼

i Default Destination: By DID ▼

Strip:

Time Condition:

Time	Destination	Options
Click to add Time Condition		

Cancel
Save

Figure 4: Inbound Rule: Create New Inbound Rule

With this inbound rule configured, if a user from Boston dials an extension anywhere between 200-299, it will send it over to the Los Angeles UCM, then the Los Angeles UCM will use the inbound rule above to

determine where to route the call. In this case the default destination is set to “By DID”, which will route the call based on the digits dialed by the Boston user.

These steps will also be used to create an inbound rule on the Boston UCM6102 so that when a Los Angeles user dials a number that ranges from 100-199(Boston extensions range), it will be routed to a Boston user.

Here's what to configure on the Boston UCM6102 Inbound Rule:

- Trunks: Select the LosAngelesUCM
- DID Pattern: Enter in the pattern 1XX
- Privilege Level: Internal
- Default Destination: By DID