M1 SIP Trunk Configuration with Beronet Telephone Appliance

About M1

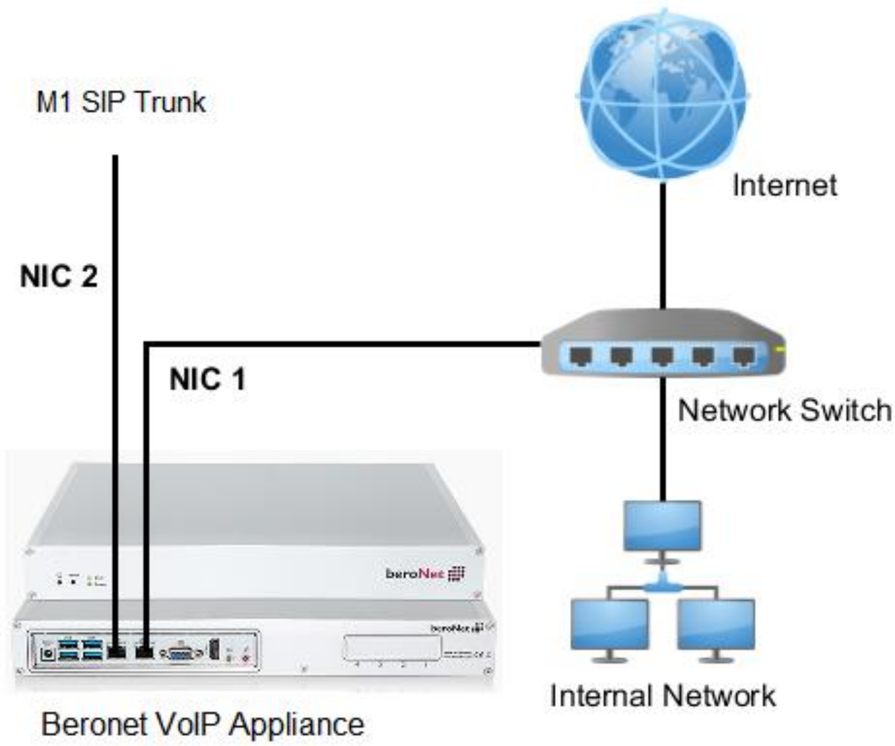
M1 is one of the three major full-service communications providers in Singapore. It offers a suite of mobile voice-and-data communication services over its 3G/3.5G/4G/LTE-A network, including international-call services to both mobile- and fixed-line customers.

These include SMS, MMS, WAP, GPRS, 3G, 3.5G and 4G and was the first Singapore operator to launch a nationwide 4G LTE and 4G LTE-A network. It also offers prepaid mobile services, such as prepaid data plans, under its M Card brand. It is one of the operators in Singapore to offer a prepaid 4G service. Singapore's 2G networks, including M1's, was turned off in April 2017.

System Preparation

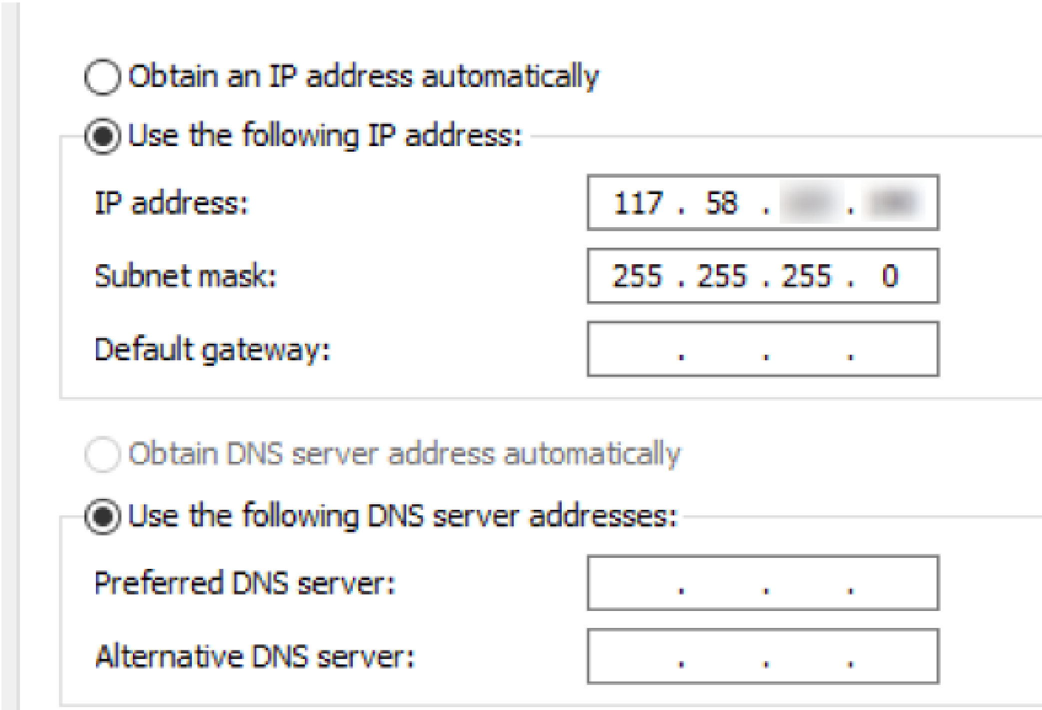
Network Topology

In order to use a M1 SIP Trunk with 3CX, the 3CX Server needs to have a second network card which will only be used for traffic from and to the M1 servers. The network topology should look similar to the following:



NIC 1 should connect to the main LAN through which the 3CX Server will have access to the internet and will also be the LAN on which Extensions are connected to.

NIC 2 will only cater for traffic from/to the M1 servers.



Important! NIC 2 must not have a Default Gateway configured and the DNS servers must be blank.

Adding Static Routes

Next you must add a static route so that the traffic from the 3CX server towards the M1 servers is routed out through the correct Gateway. To do this on a Windows OS, you would open a command prompt using the **"Run as Administrator"** option, then run the following command:

route -p add 172.16.126.0 mask 255.255.255.0 METRIC 1 *[Gateway IP given by Provider]*

e.g.:

route -p add 172.16.126.0 mask 255.255.255.0 METRIC 1 117.58.169.189

The Gateway IP that you need to configure should be given to you by M1.

3CX Server NIC Setup

For NIC 1, apply the necessary network settings required by your network.

For NIC 2, you must manually configure the M1 WAN IP address that has be given to you and as per the instruction by M1, e.g.:

3CX Version

Some providers gained support and compatibility with 3CX on a specific product version. It is advisable to always run the latest version of 3CX to ensure ongoing compatibility.

Minimum 3CX Version: 3CX Phone System 15.5

Provider Capabilities

Below is a short overview of the provider's capabilities and services and whether they're supported or not:

1) CLNS (Clip No Screening): No
2) Catch All Routing: Yes, static SI per trunk
3) Fax in T38: No
4) CLIR (Number Suppression): No
5) DTMF via RFC 2833: Yes
6) Codec Order: G711A,G729, G711U, -
7) NAT Support: Yes
8) Other: SRTP is not supported, TLS is not supported

Collecting 3CX Configuration Settings

In order to configure M1 with 3CX, you should first make sure you have the following information available which must be provided to you by your M1 representative:

- Your DID numbers
- The M1 SIP Server IP address
- Your M1 WAN IP Address

With the above information you can proceed to the next section which explains how you use this information to configure the Trunk in 3CX.

Configuring the Trunk with 3CX

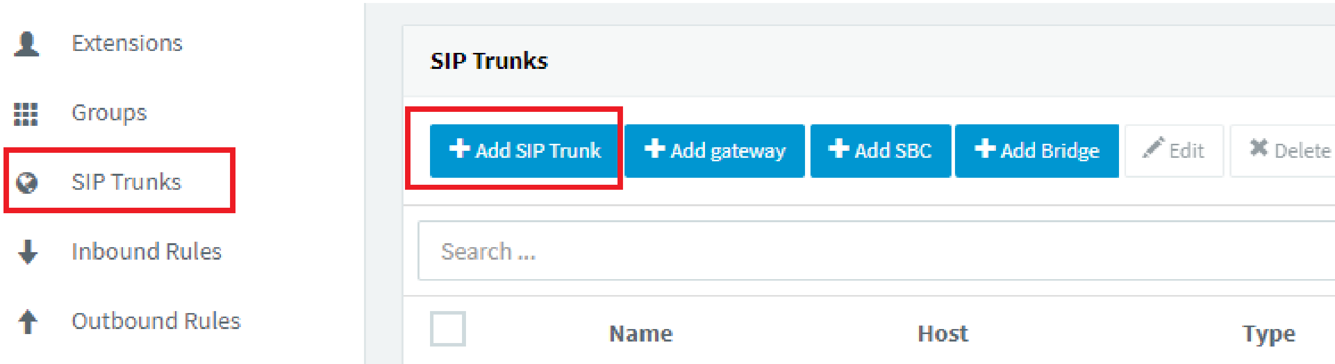
Adding the Trunk

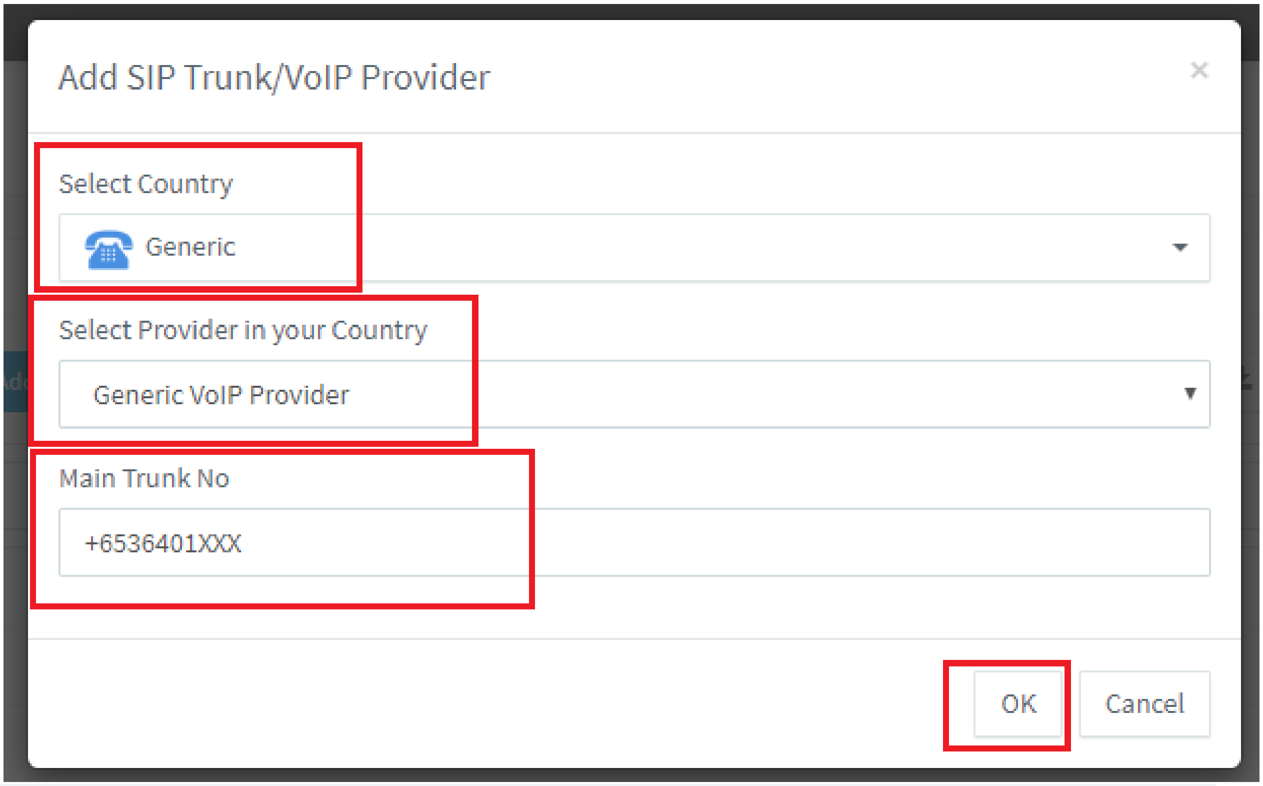
The general instructions outlining how to add a new SIP Trunk to your 3CX

Additionally, for M1, you must also have a dedicated NIC for the traffic from/to the Provider. The instructions for this are provided in section “System Preparation” and must be done prior to the following.

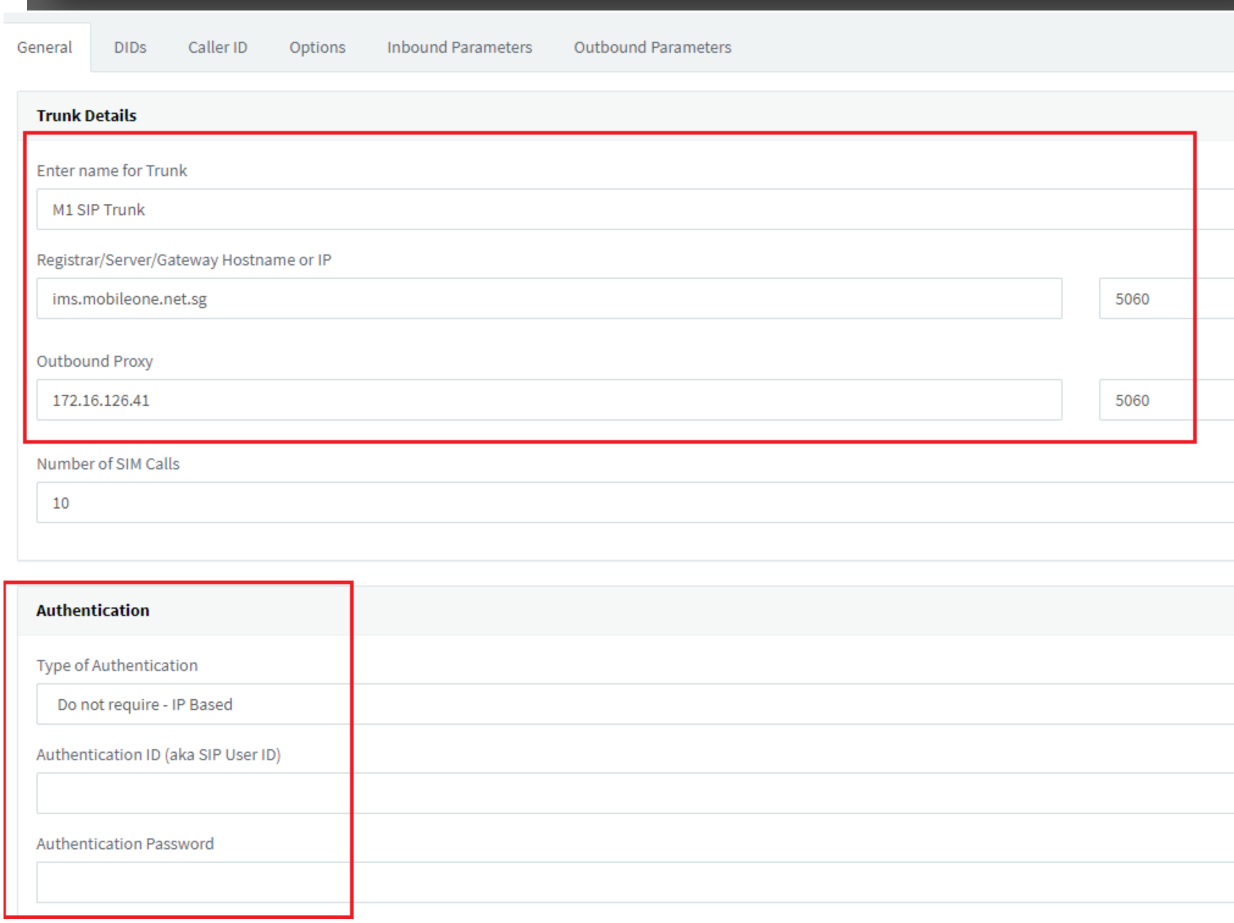
To add M1 to your 3CX system, open the Management Console and navigate to **“SIP Trunks”**. Press the **“Add SIP Trunk”** button and select **“Generic”** as the country and then **“VoIP Trunk Provider”** from the following drop-down.

In the **“Main Trunk No”** field, enter one of your DID numbers, then press OK.

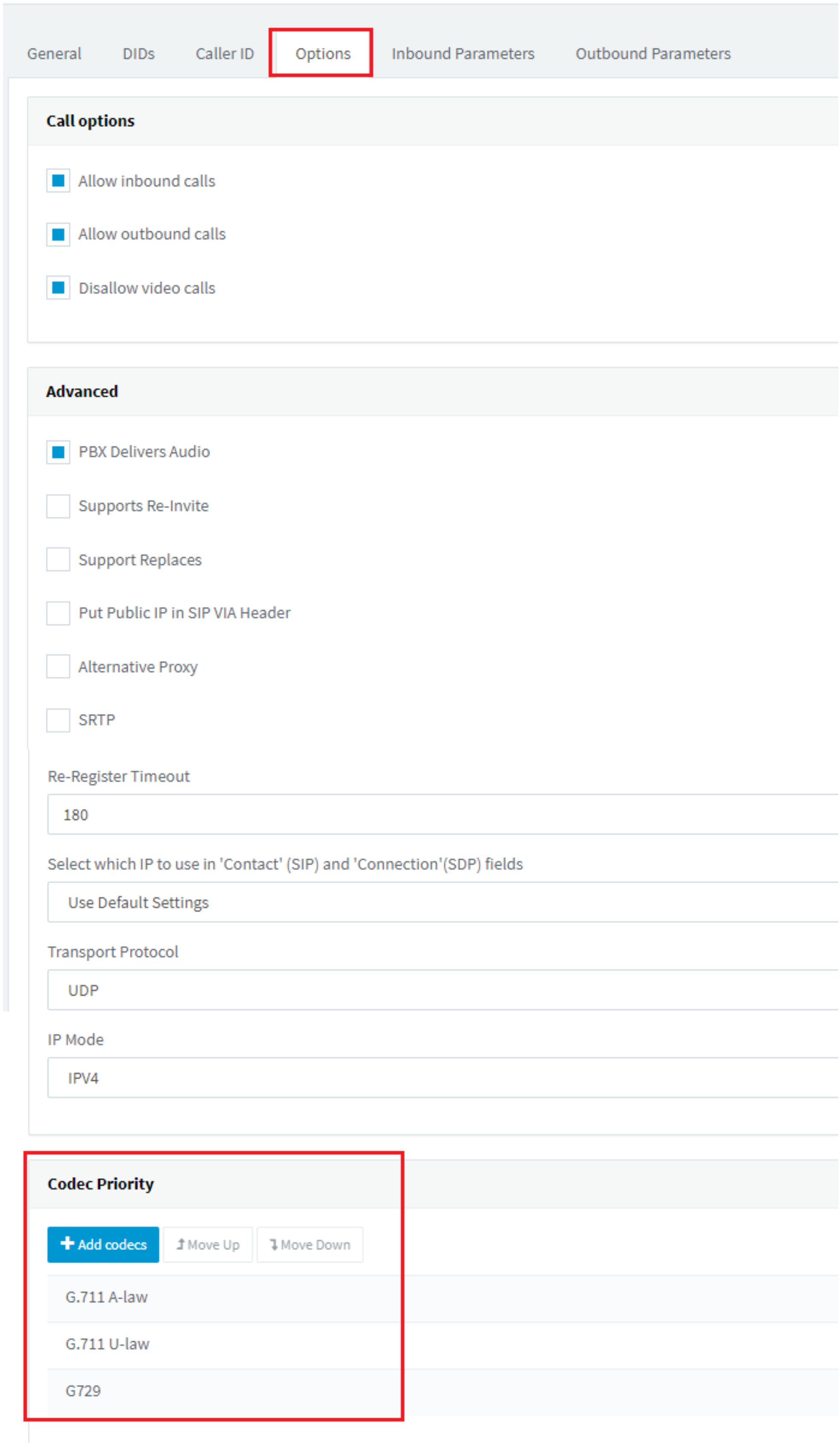


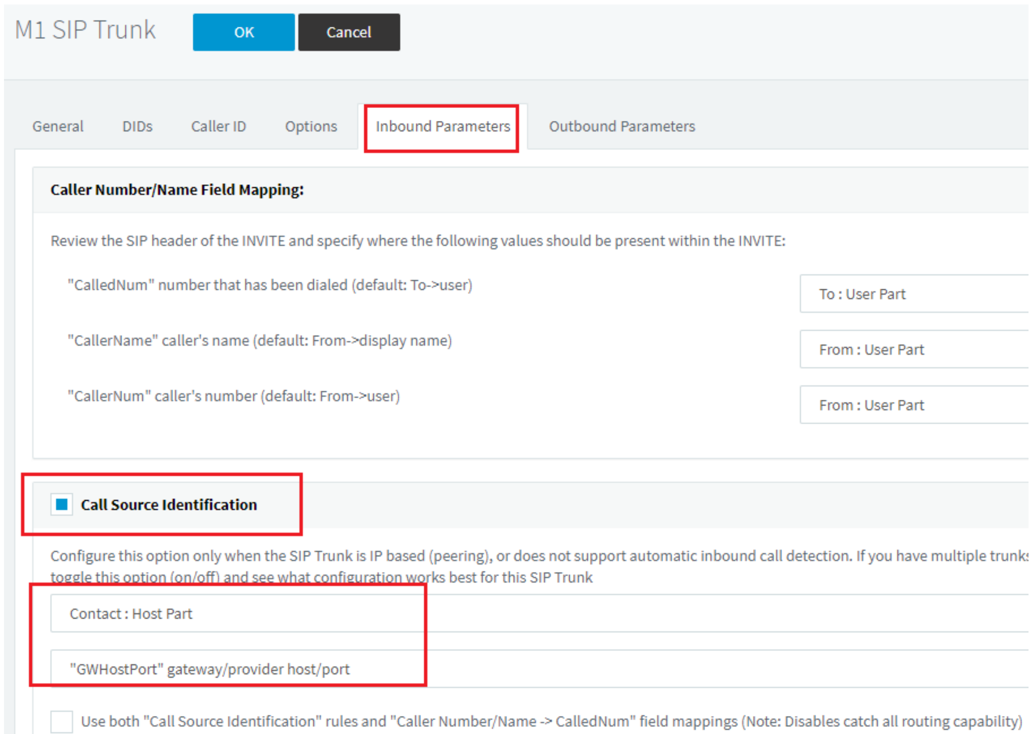


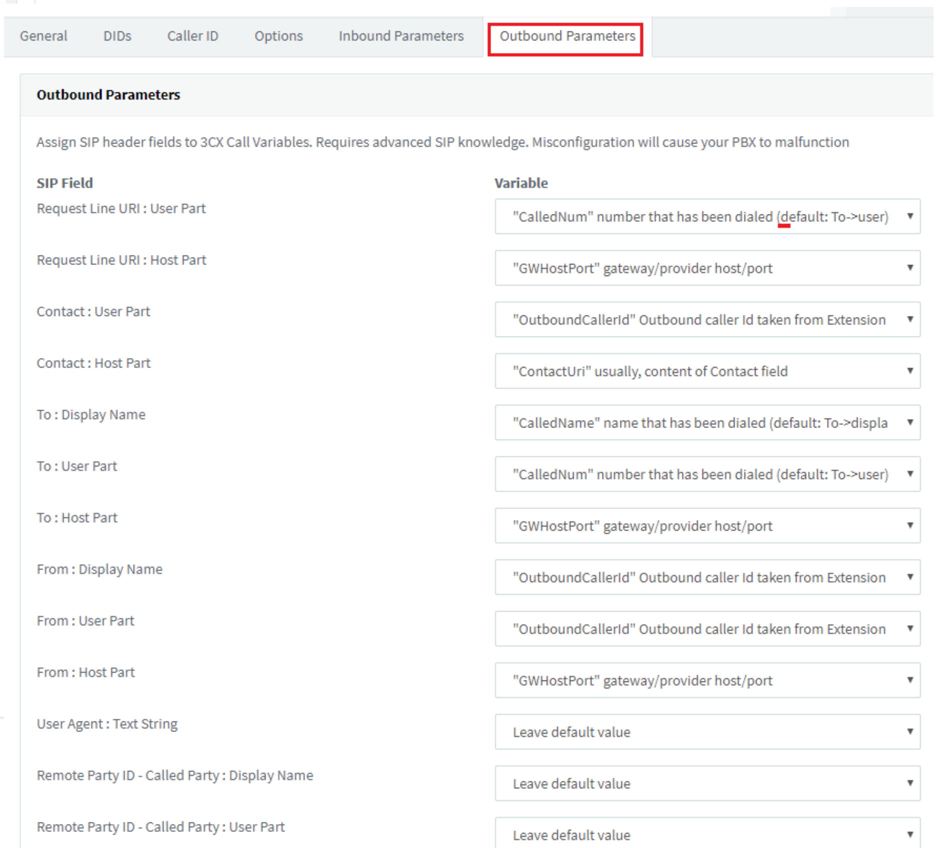
Add SIP Trunk/VoIP Provider
Select Country
Generic
Select Provider in your Country
Generic VoIP Provider
Main Trunk No
+6536401XXX
OK
Cancel



General
DIDs
Caller ID
Options
Inbound Parameters
Outbound Parameters
Trunk Details
Enter name for Trunk
M1 SIP Trunk
Registrar/Server/Gateway Hostname or IP
ims.mobileone.net.sg
5060
Outbound Proxy
172.16.126.41
5060
Number of SIM Calls
10
Authentication
Type of Authentication
Do not require - IP Based
Authentication ID (aka SIP User ID)
Authentication Password


General
DIDs
Caller ID
Options
Inbound Parameters
Outbound Parameters
Call options
Allow inbound calls
Allow outbound calls
Disallow video calls
Advanced
PBX Delivers Audio
Supports Re-Invite
Support Replaces
Put Public IP in SIP VIA Header
Alternative Proxy
SRTP
Re-Register Timeout
180
Select which IP to use in 'Contact' (SIP) and 'Connection'(SDP) fields
Use Default Settings
Transport Protocol
UDP
IP Mode
IPV4
Codec Priority
+ Add codecs
Move Up
Move Down
G.711 A-law
G.711 U-law
G729

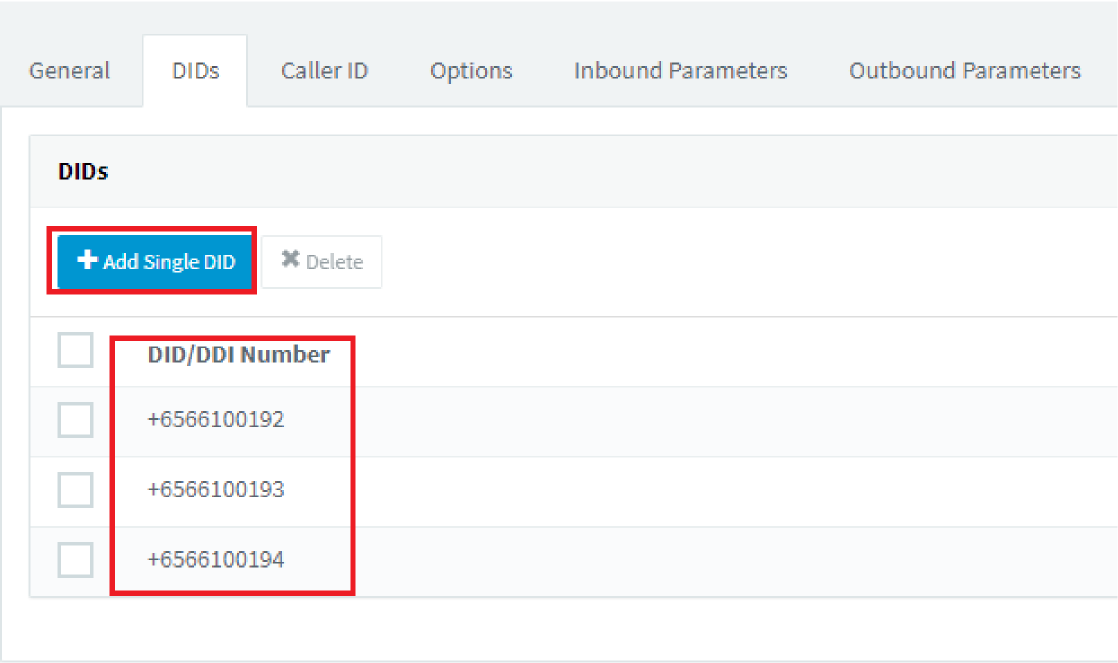




Once you have done the above, press OK and your Trunk will now be configured.

Adding Additional DIDs

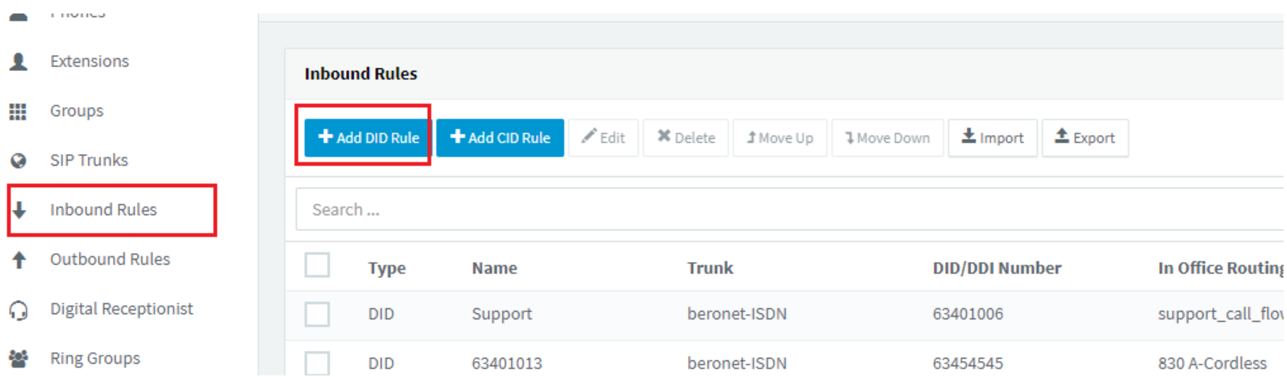
To associate all other DIDs/Numbers you have on your M1 Trunk, what you need to do is go to the Management Console → SIP Trunks, double-click on your M1 Trunk and go to the "DIDs" tab**.**
Here you should already see 1 entry that is the Main Trunk number you have set. Add all other DIDs/Numbers you have to the list in the National Number format.

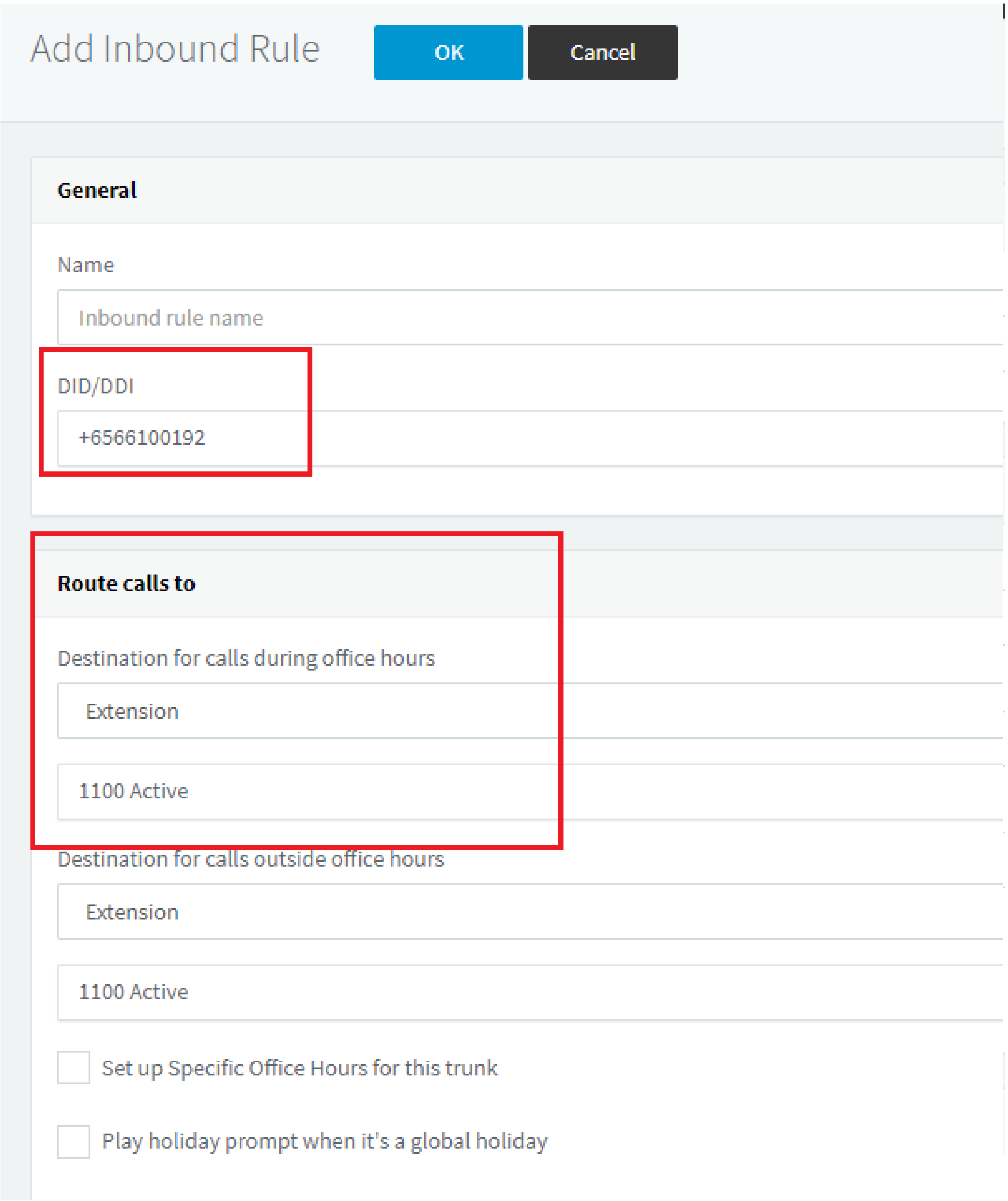


Creating Inbound Rules

Now that you have associated all your DIDs/Number with your SIP Trunk in 3CX, you can create Inbound Rules to set where calls will be routed when those numbers are called.

Go to Inbound rules and create inbound rule.




Add Inbound Rule
OK
Cancel
General
Name
Inbound rule name
DID/DDI
+6566100192
Route calls to
Destination for calls during office hours
Extension
1100 Active
Destination for calls outside office hours
Extension
1100 Active
Set up Specific Office Hours for this trunk
Play holiday prompt when it's a global holiday

Number Format

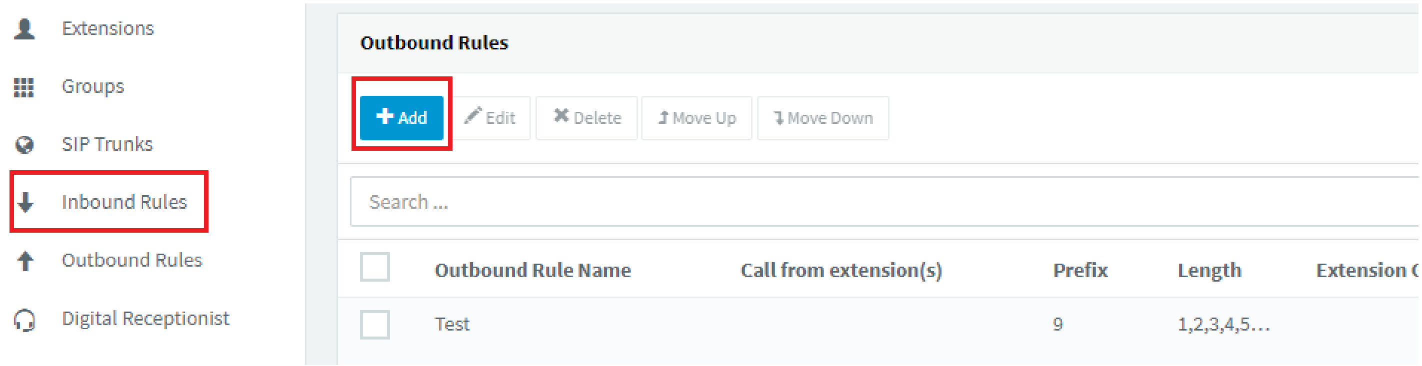
Outbound Caller ID

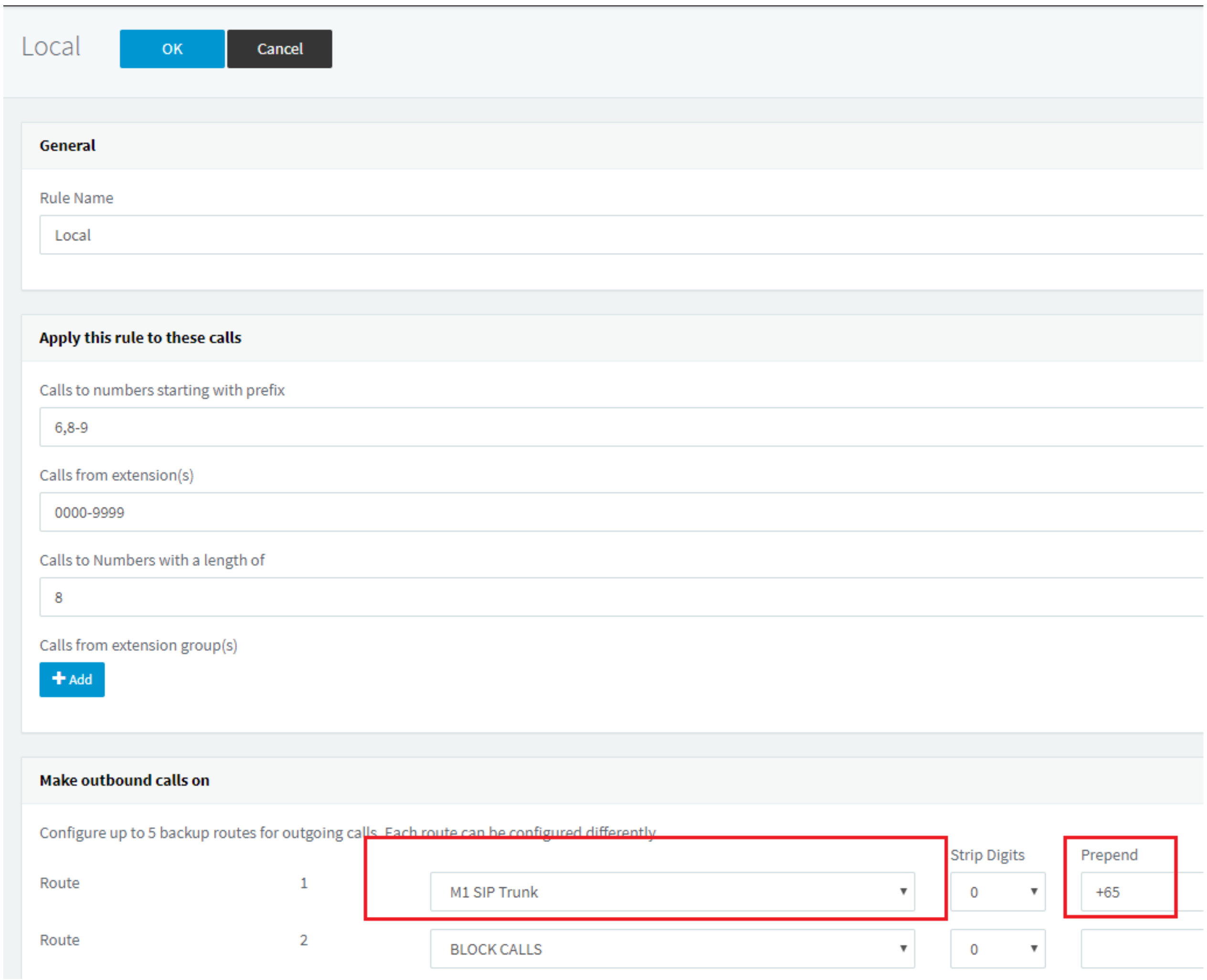
When making Outbound Calls using your M1 SIP Trunk, you can present any of your DIDs as the Outbound Caller ID. Note though that because Clip No Screening is not supported, you cannot present any other number that you don't have associated with your Trunk.

Outbound Rules

There are no special instructions regarding Outbound Rules that are required, numbers can be dialled either in any valid format.

Go to outbound Rules & Add outbound rule





Outbound caller ID should be place in all the extension outbound caller id settings. +656340XXXX..