Remotely Integrate two CooVox IP PBXs

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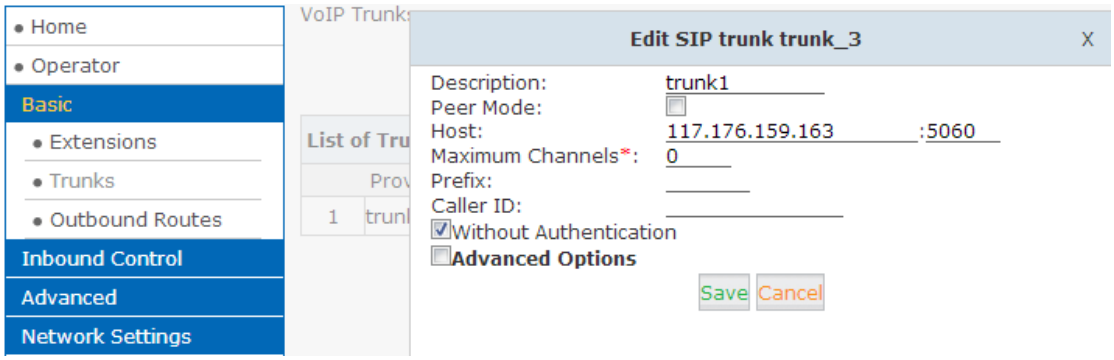
If you have a scenario where you have two CooVox IP PBXs in two different locations then you can integrate them together to make free phone calls between locations. This document describes the procedure required to enable integration.

Integrating

Scenario 1

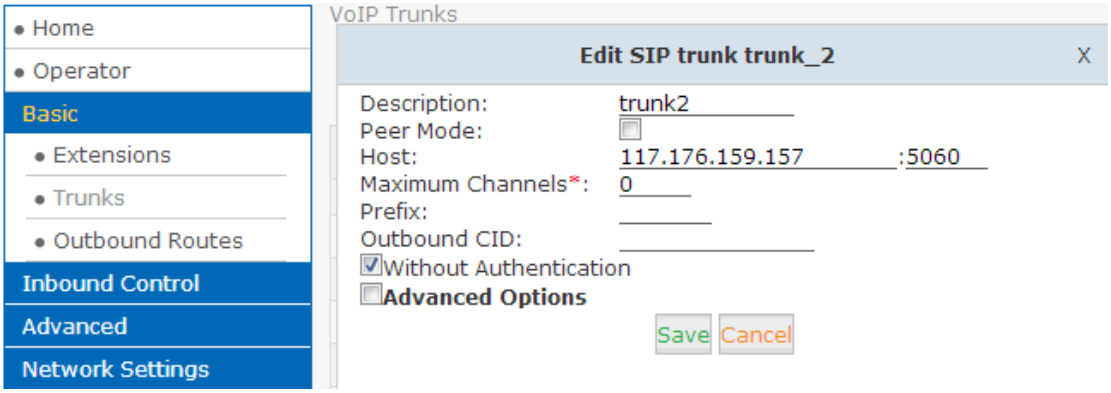
Both IP PBXs are connected directly to the internet with static public IP Addresses. Location A has an IP Address of 117.176.159.157 and location B's IP Address is 117.176.159.163.

Setp1: Create one VoIP trunk on IP PBX A



The Host field should be completed with the public IP address of IP PBX B and must be Without Authentication.

Step 2: Create one VoIP trunk on IP PBX B



The Host field should be completed with public IP address of IP PBX A and must be Without Authentication.

On Operator page of IP PBX A:

VoIP Trunks

Status	Trunk Name	Type	Username	Hostname/IP/Port	Reachability
OK (3 ms)	trunk1	SP-SIP		117.176.159.163:5060	OK (3 ms)

On Operator page of IP PBX B :

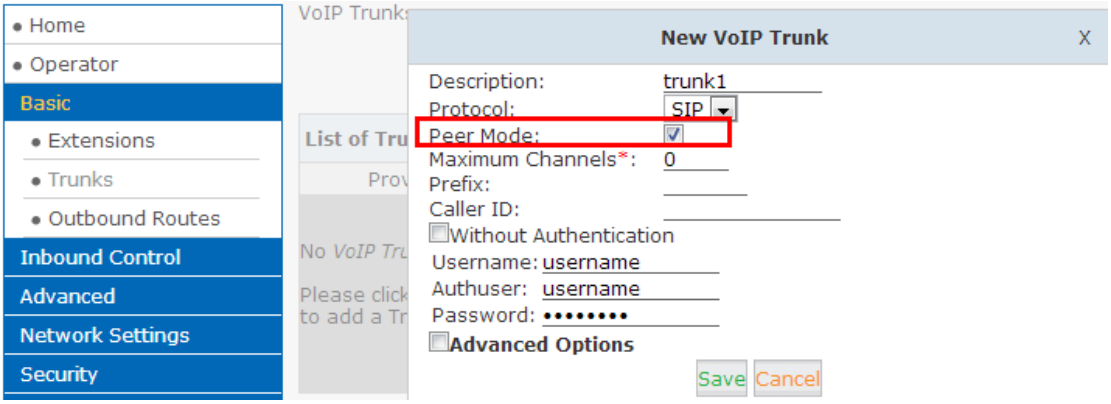
OK (6 ms)	trunk2	SP-SIP		117.176.159.157:5060	OK (6 ms)

If VoIP trunk status shows OK as in the above diagrams on both IP PBXs' Operator page, then they are integrated successfully.

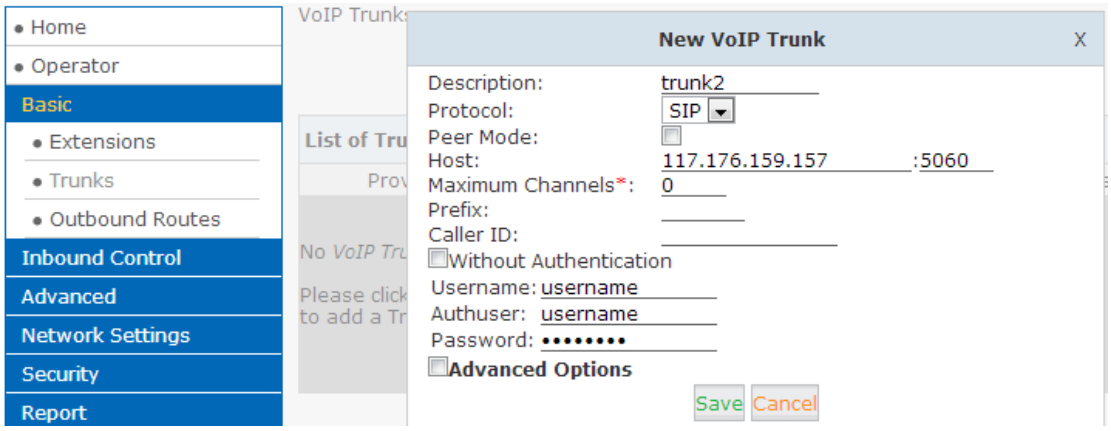
Scenario 2

One of the IP PBX's is connected to the Internet directly with a static public IP address. For example, IP PBX A.

Step 1: Create a peer trunk on IP PBX A



Step 2: Create a VoIP trunk on IP PBX B



Set the Host field to be the public IP Address of IP PBX A. On the Operator page of IP PBX A, the trunk status should show OK as shown in the diagram below if the trunk has been set up successfully:

VoIP Trunks

Status	Trunk Name	Type	Username	Hostname/IP/Port	Reachability
OK (7 ms)	trunk1	SIP	username	dynamic	OK (7 ms)

Check the Operator page of IP PBX B and the trunk status should have a status of registered as detailed in the diagram below:

VoIP Trunks

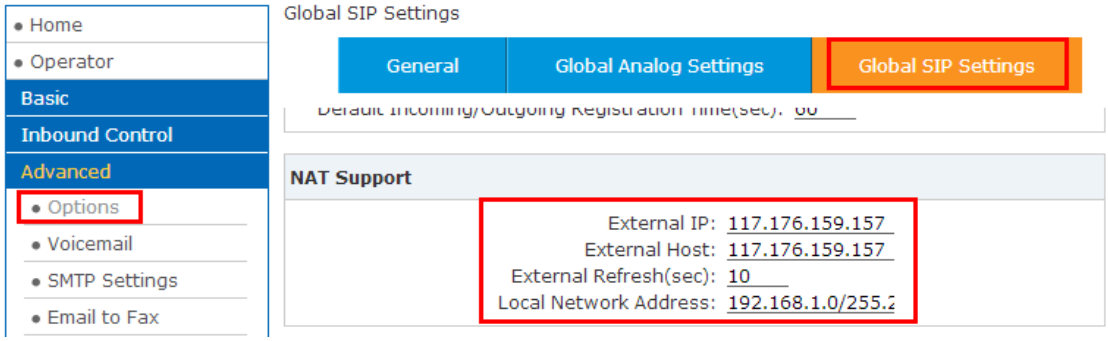
Status	Trunk Name	Type	Username	Hostname/IP/Port	Reachability
Registered	trunk2	SIP	username	117.176.159.157:5060	OK (13 ms)

Once you have successfully undertaken these two steps and both Operator pages show trunk status as in the above diagrams, then integration of the two IP PBX's is now complete.

Scenario 3

IP PBX A is behind NAT and will typically reside on a local LAN protected by an external router/firewall. The public IP address of the IP PBX is 117.176.159.157. In this scenario you need to configure "NAT Support" on IP PBX A, and configure port forwarding on your router to forward traffic to IP PBX A.

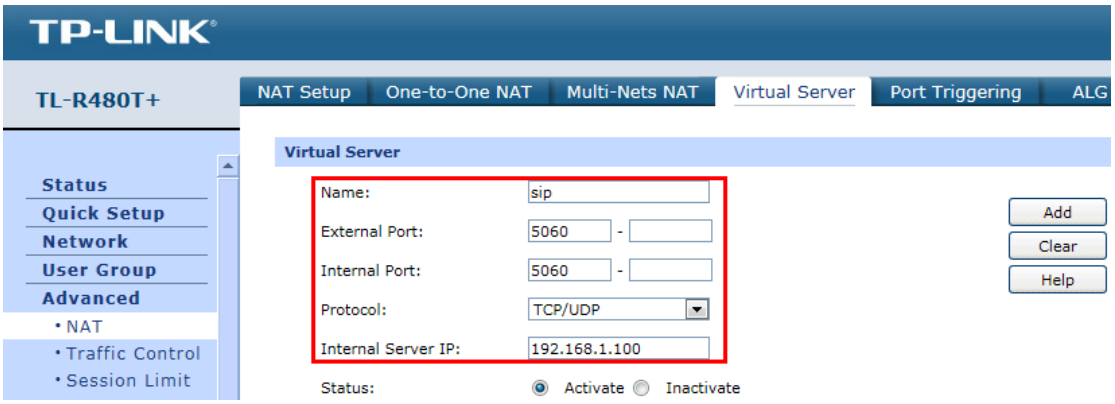
Step 1: Configuring NAT support



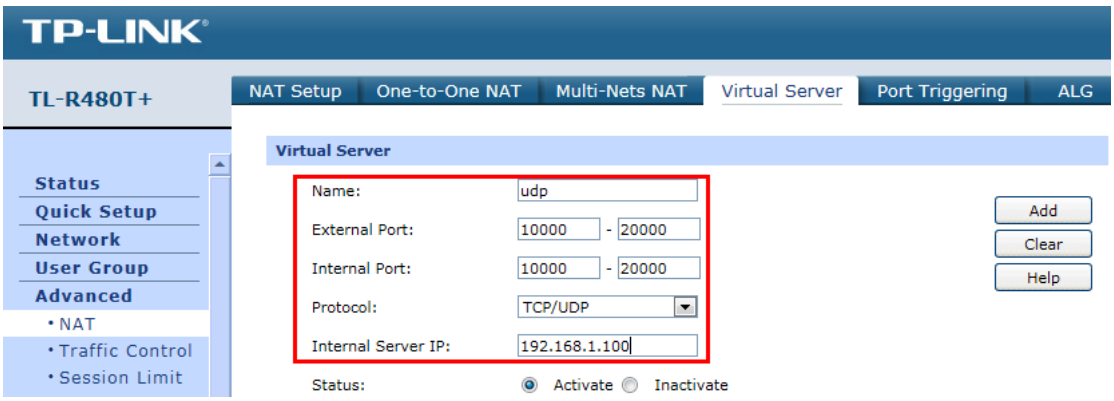
Click【Advanced】→【Global SIP Settings】→【NAT Support】, please input the public IP address in both External IP and External Host. For External Refresh, the default is 10 seconds. Local Network Address should be the LAN address of the network where IP PBX A resides, for example: 192.168.1.0/255.255.255.0.

Step 2: Configure port forwarding on the router

We will use TP-Link router to demonstrate how to configure port forwarding. Open the router GUI, here. Click【Advanced】→【NAT】→【Virtual Server】:



Forward port 5060 for SIP signaling.



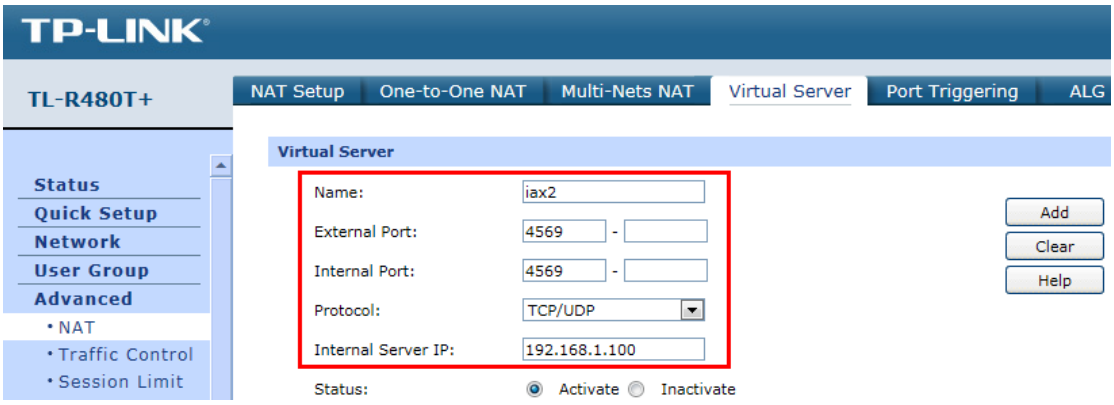
Forward ports 10001-20000 for real time audio stream transmission.

To test if port forwarding works, you can register a remote extension with the public IP address of IP PBX A. If registration fails then please reboot your router and check again.

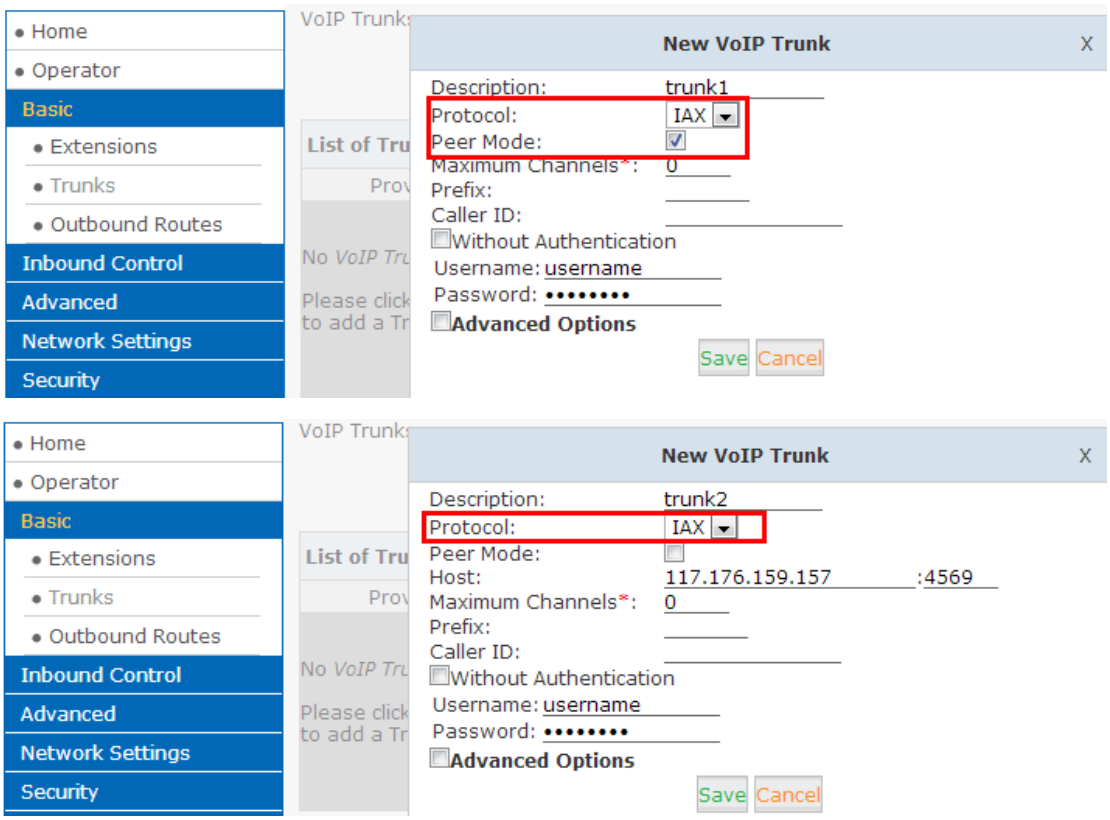
Step 3: Refer to the configurations described in Scenario 2.

Scenario 4

If setting up SIP protocol is proving problematic then you may prefer to use IAX2 protocol as this is typically easier to configure.
IAX2 protocol carries both signaling and media on the same port 4569. So if the IPPBX is behind NAT then you only need to forward port 4569 on your router. Also note that NAT does not need to be configured.



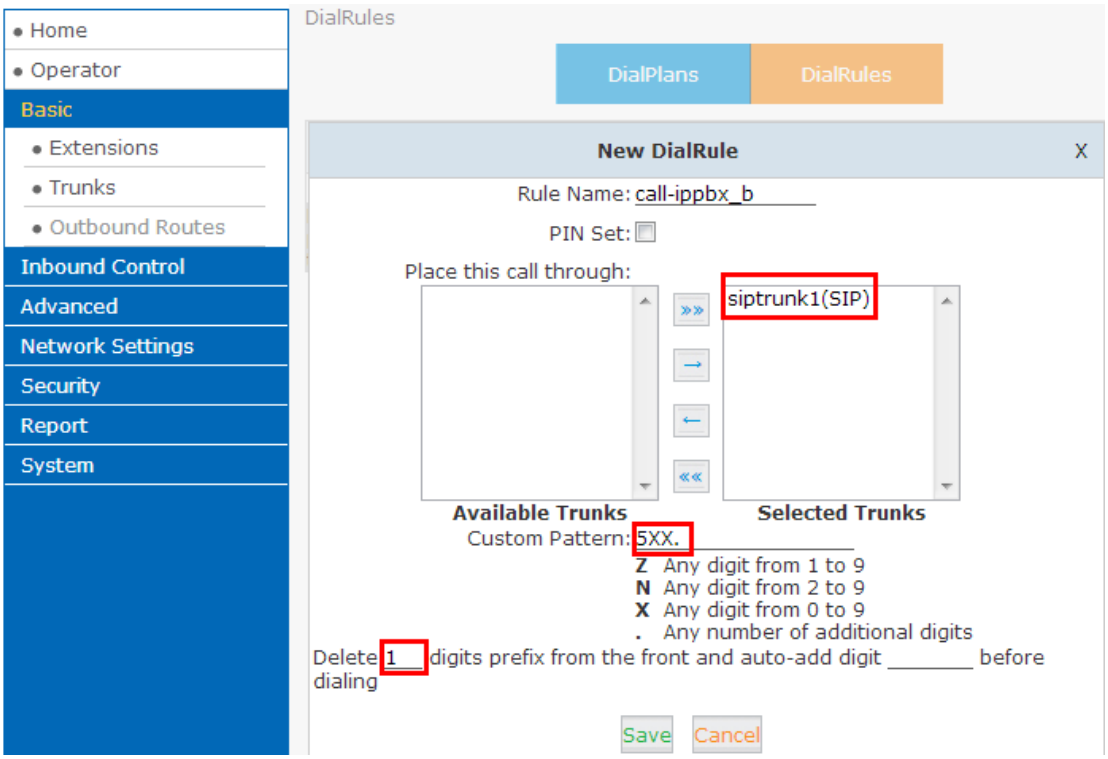
Below are examples for IAX2 peer trunk and IAX2 VoIP trunk for reference.



Except for the fact you are using a different protocol, other settings are almost identical to integration with SIP trunks. Therefore, if the CooVox IP PBXs are connected to the Internet with static public IP then you can refer to Scenario 1 and 2 to integrate them. Please remember to change the protocol to IAX instead of SIP.

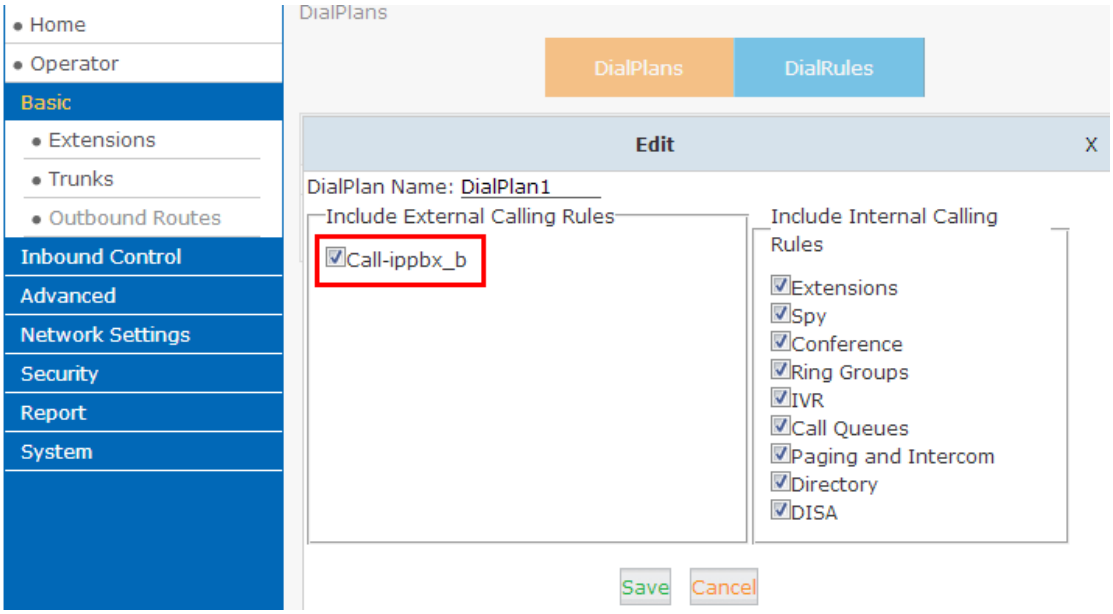
Outbound Routes(Dial Rules)

Step 1: Configure dial rule on IPPBX A



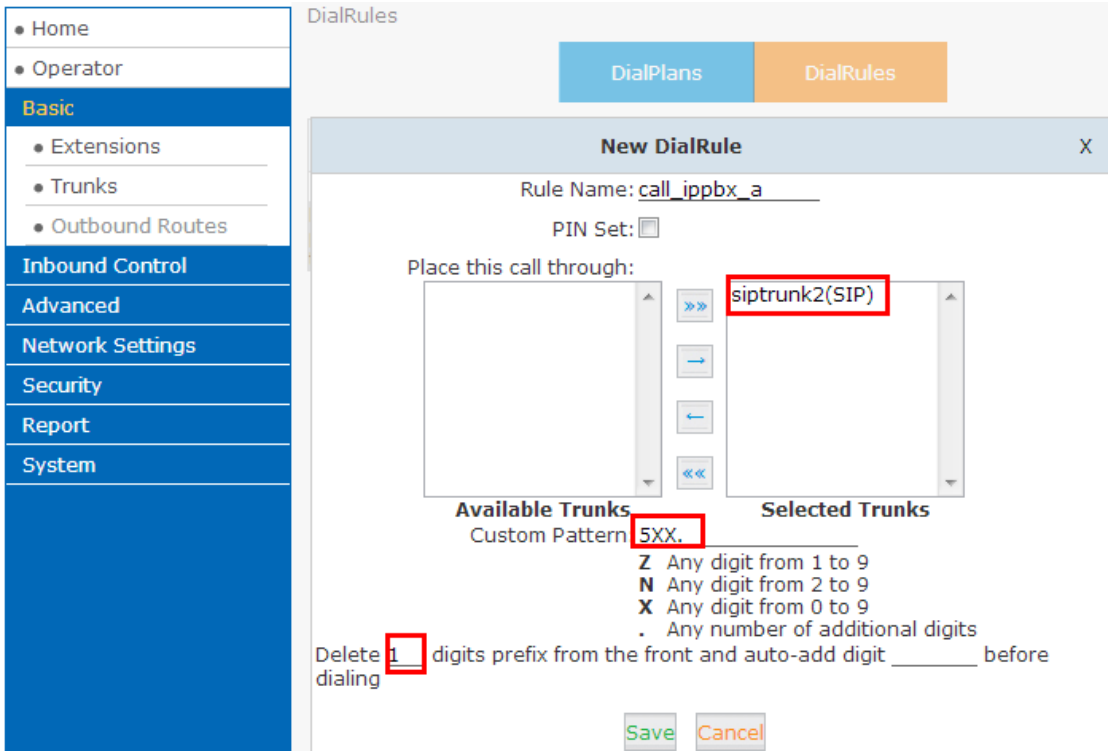
To create a new rule you first need to provide a name for the dialrule. Next select the trunk that this rule will use and finally define a custom pattern and save your settings.

Then enable this dial rule in your dial plan:

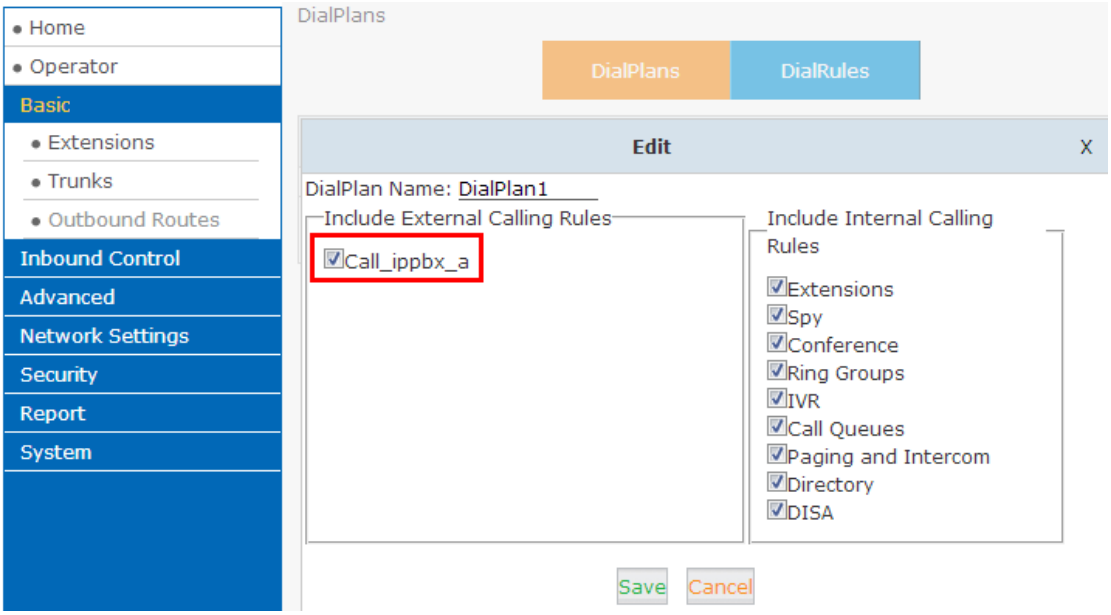


Give a name for this dialplan, and select the dialrule and internal calling rules for this dialplan.

Step 2: Configure dialrule on IPPBX B (Refer to Step 1: Configure dialrule on IPPBX A)



And enable this in dial plan



For all different scenarios, all of the dialrule/dialplan settings are the same. You are just required to choose the trunk for each IP PBX and define the dial pattern. Finally remember to enable this rule in the dialplan.

Making phone calls

Users in each location can dial the extensions in other location with prefix 5.