How to extend Lync 2013 to MyPBX

Version: 1.0

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CONTENTS:

1. Introduction

Brief introduction of the Lync Server installed, and the target achieved in this manual.

Brief Introduction:
This is a standard version of Lync installed in windows 2008 R2 SP1 standard (64bit). It requires two computers to install, one for DC and the other one for Lync. Since TCP/TLS is supported by Lync only, which doesn't match the general trunks we get like PSTN/SIP (UDP)/BRI/GSM or others, a translator like MyPBX is needed.

Basic Information:
IP of DC: 192.168.5.246
IP of Lync: 192.168.5.247
IP of MyPBX: 192.168.4.142
FQDN: lync.yeastar.com (Front end server, SQL and mediation pool are installed here)
Account: harry, extension: 800, UPN:harry@lync.yeastar.com
Extension range in MyPBX: 300-350
Default TCP port: 5060 (MyPBX), 5068(Lync)

Target:
1. Making internal calls between MyPBX and Lync server 2013 by dialing extension number directly without "+".
2. Making outbound calls from Lync via the PSTN trunk of MyPBX directly.
3. Making inbound calls from PSTN trunk and then dial the number of Lync extension number after the second dial tone.

2. Create topology to Lync 2013 and publish it

Open the topology you have got from the builder. If you haven't got one, please create and publish it before adding a new gateway.

This is the window of lync 2013 Topology Buider:
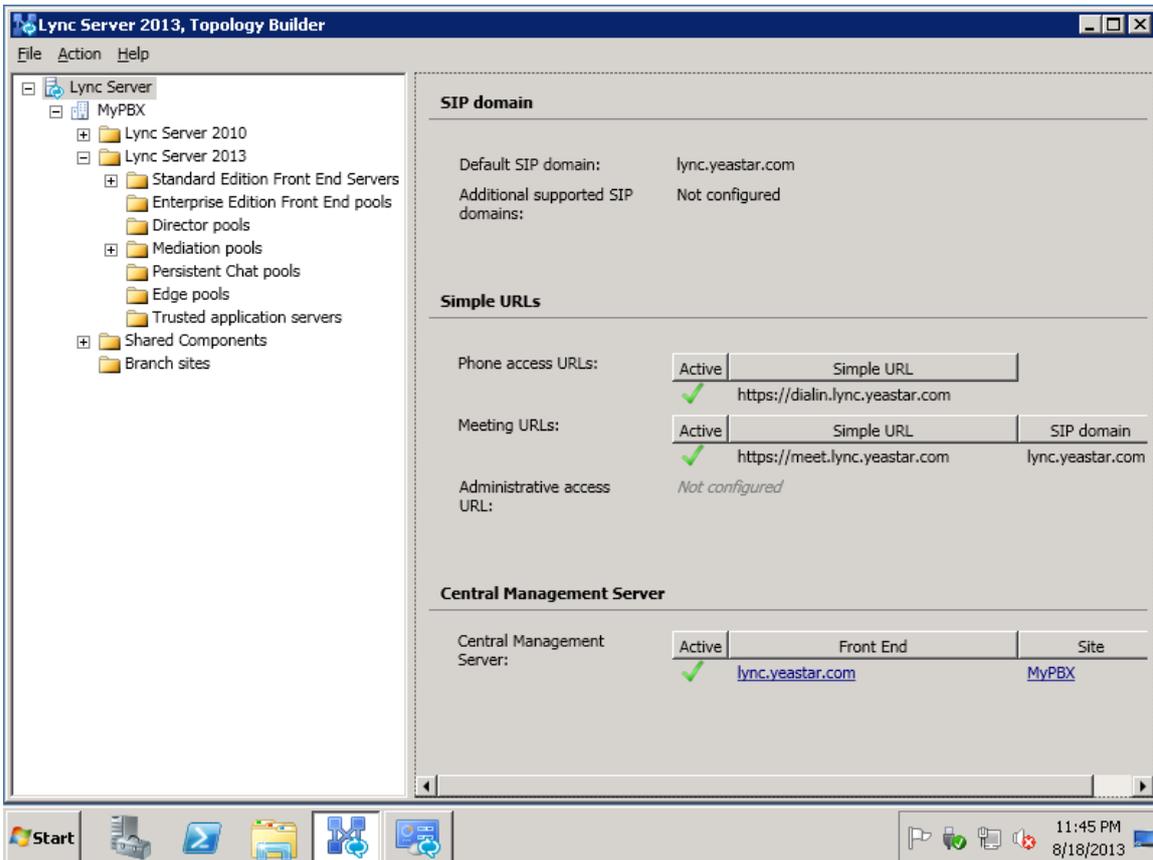
Figure 1

Expand "Shared Compoments", right click "PSTN gateways", choose "New IP/PSTN Gateway".
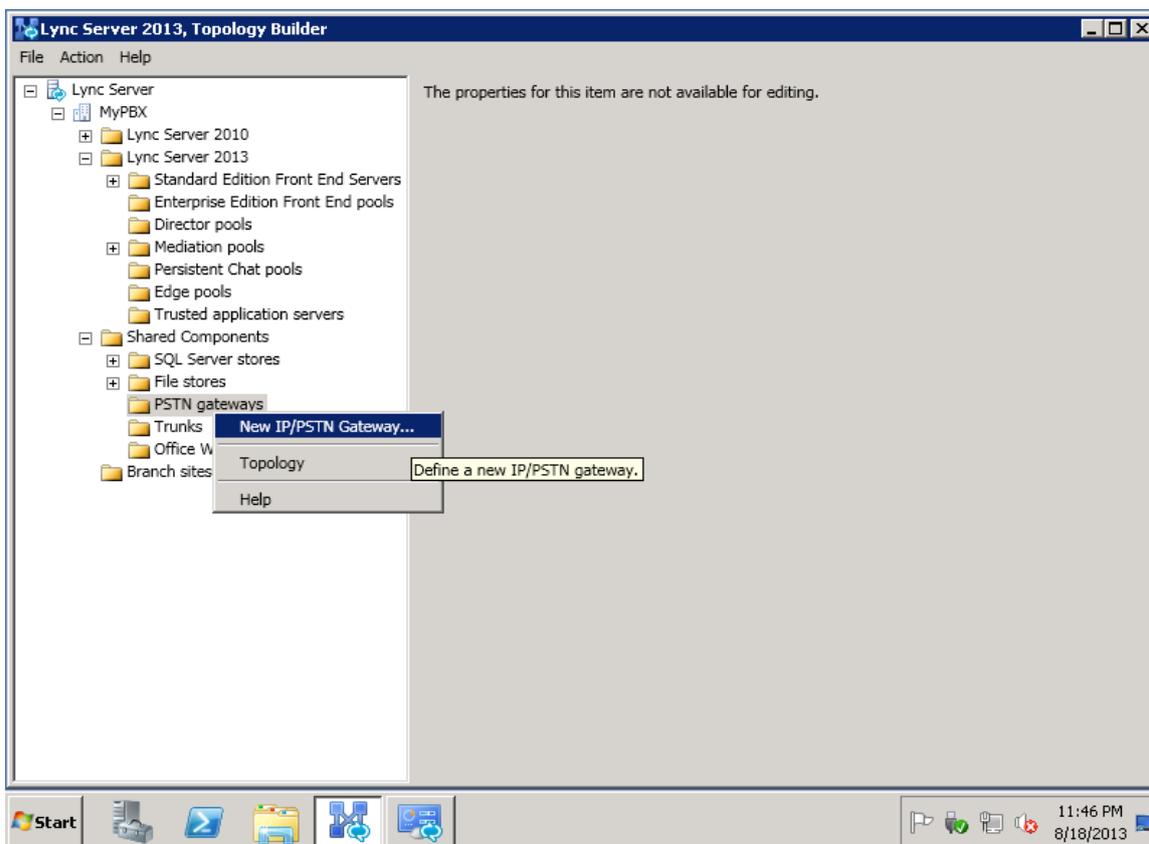
Figure 2

Input the FQDN of IP PBX, in this example, MyPBX's IP addres is 192.168.4.142.
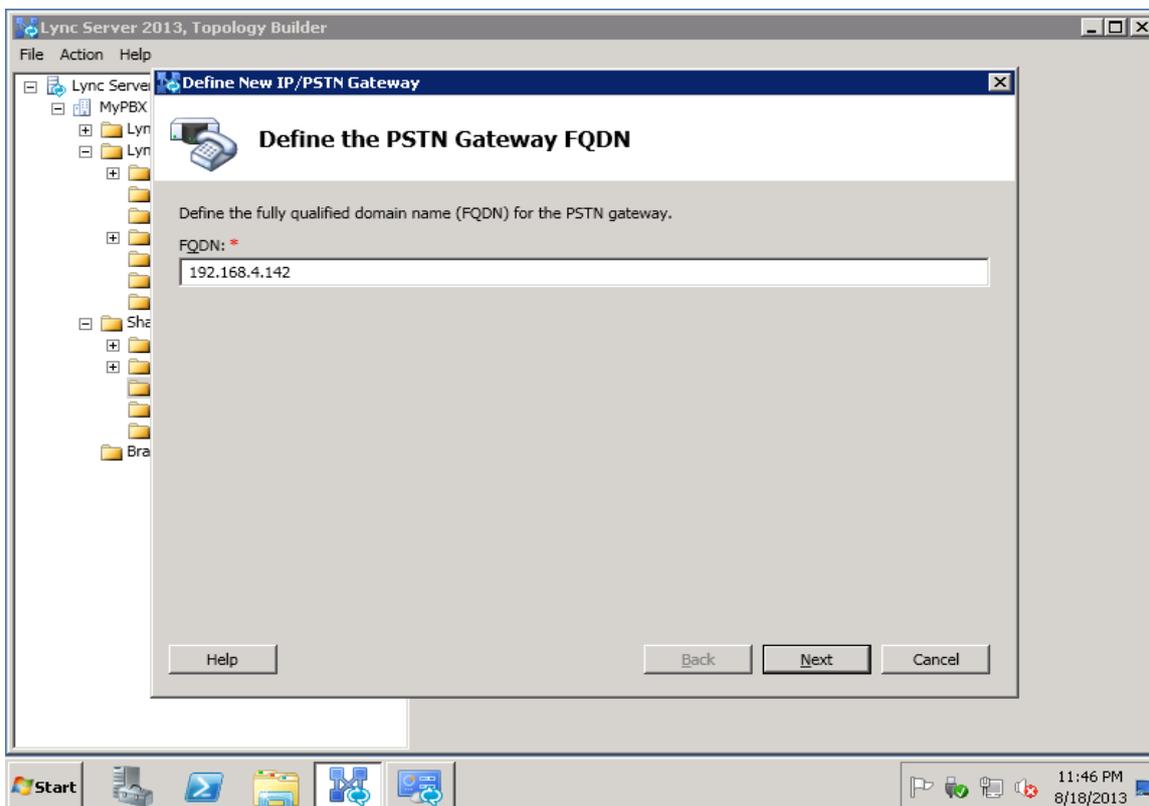
Figure 3

Click "Next", keep the default "Enable IPv4", click "Next".
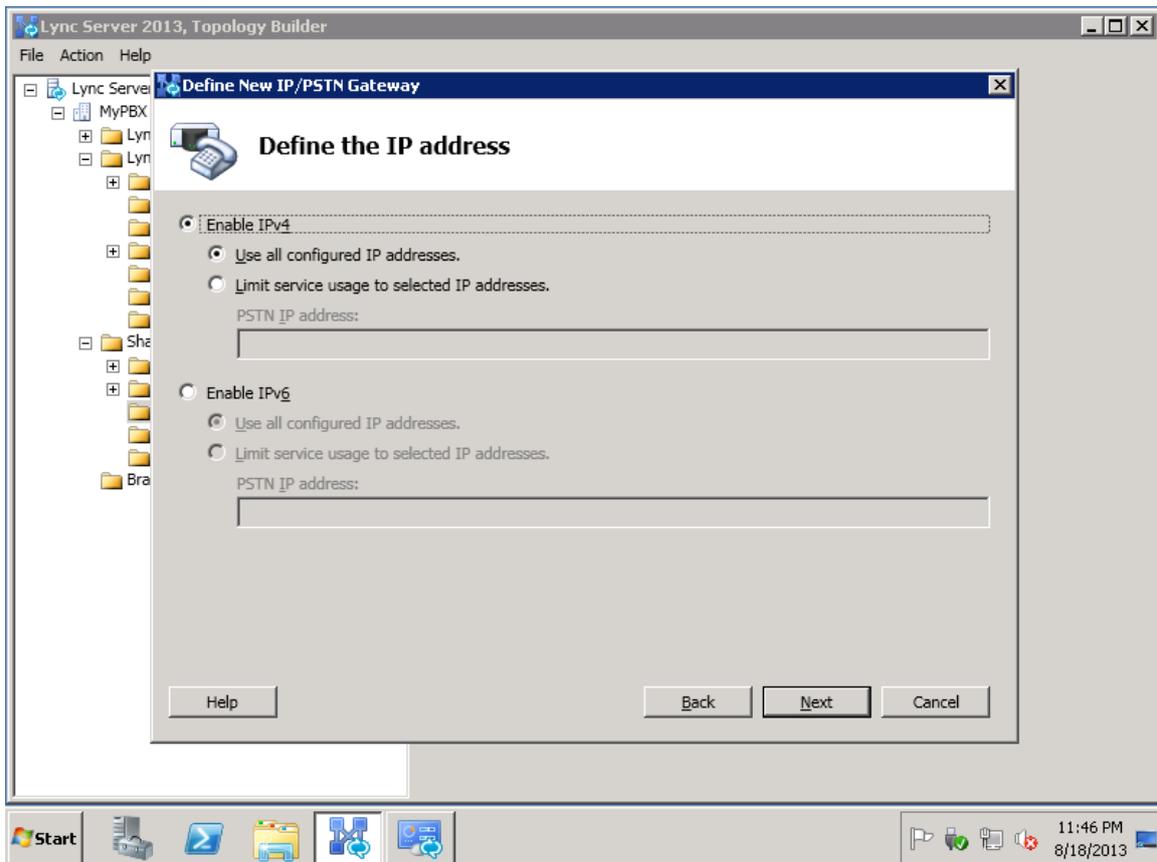
Figure 4

You can change the trunk name to MyPBX, or just keep it.
Listening port of IP/PSTN gateways: 5060
SIP Transport Protocol: TCP
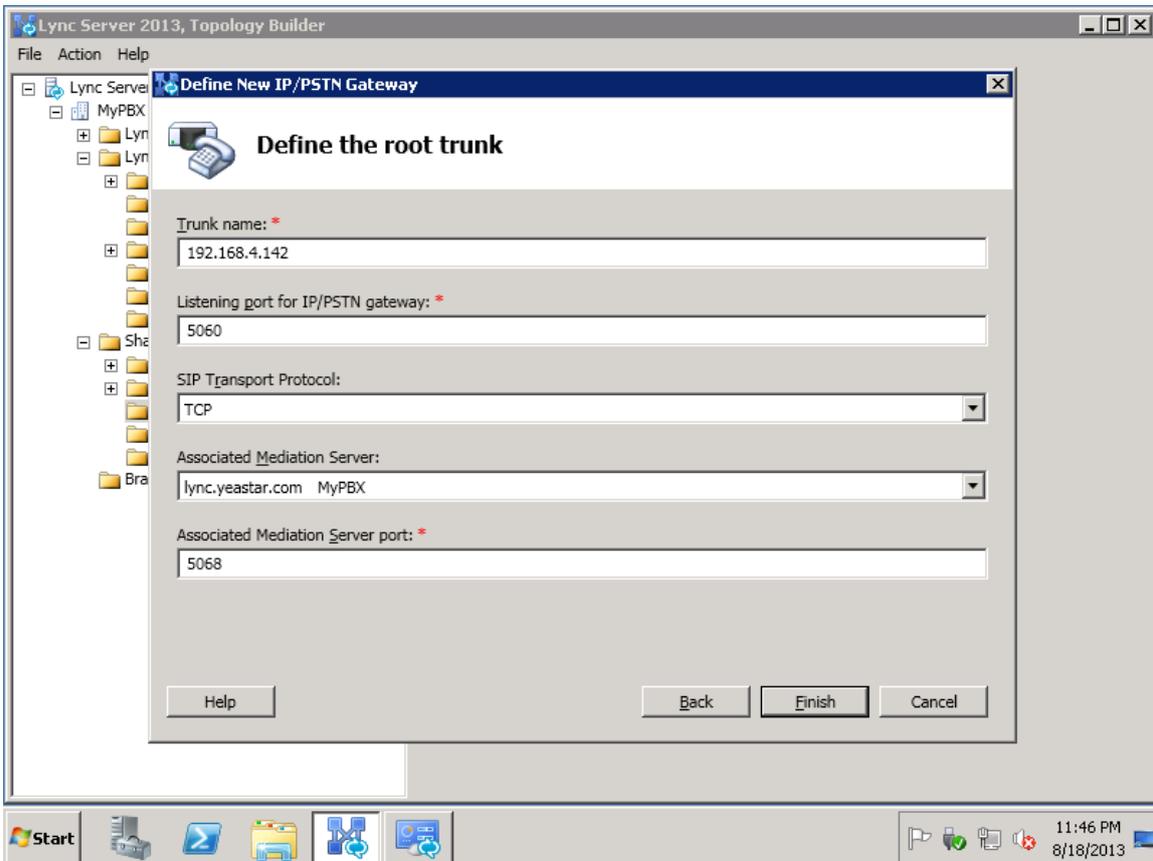
Figure 5
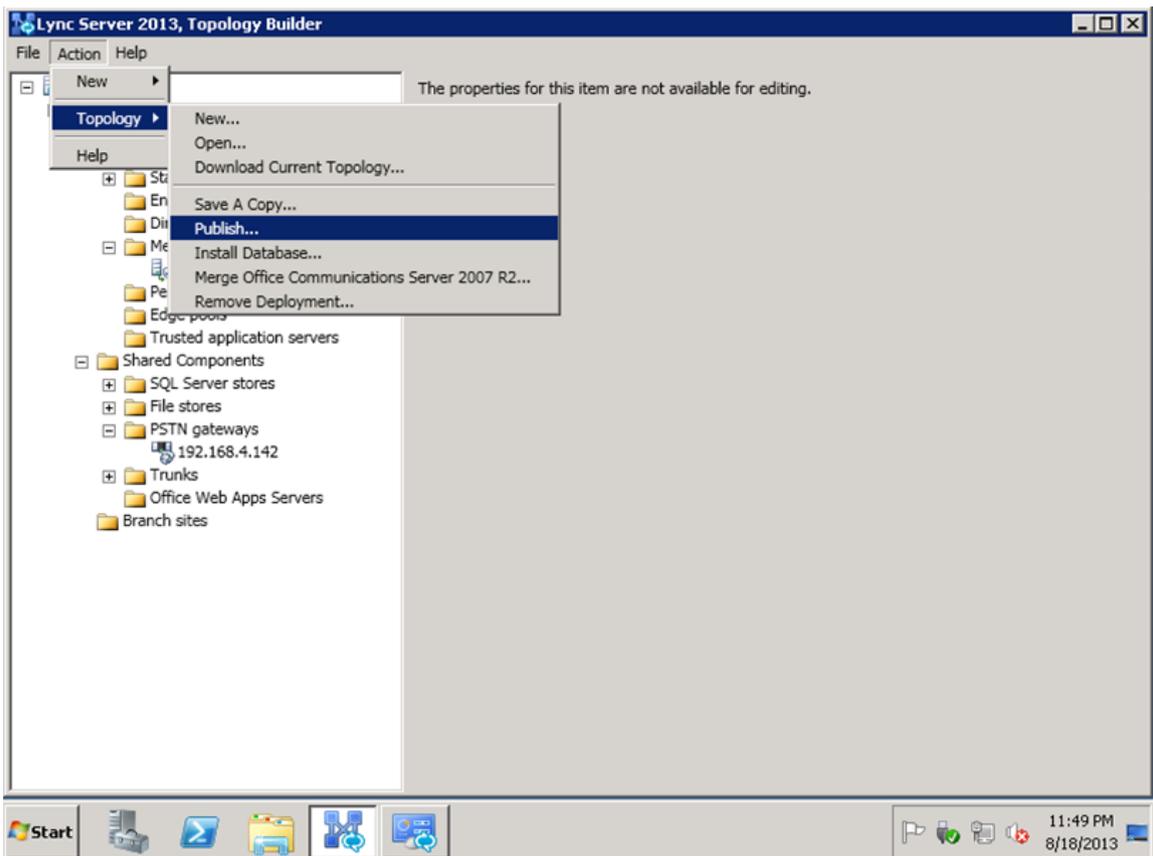
Figure 6

When done, Publish ths new topology directly.

Publishing is progressing as the following pictures show. If there is any error, please check the above steps or re-install the central SQL server.
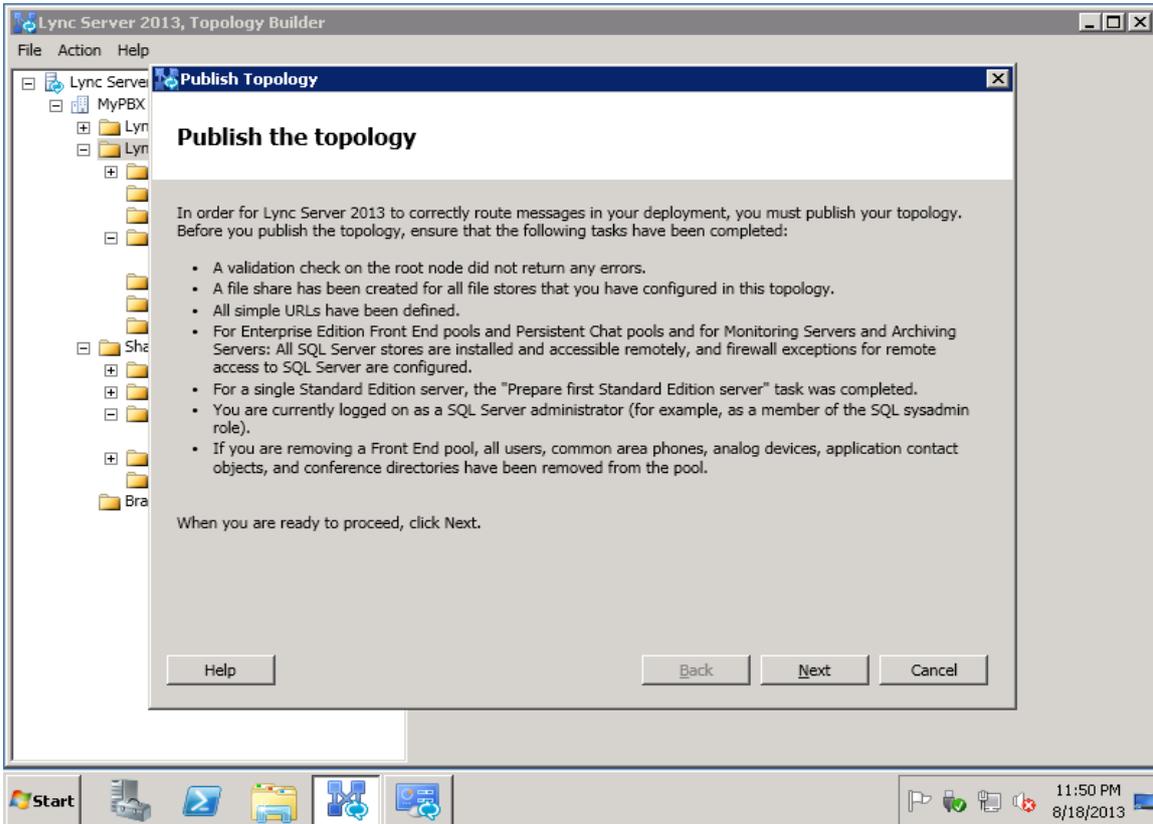
Figure 7
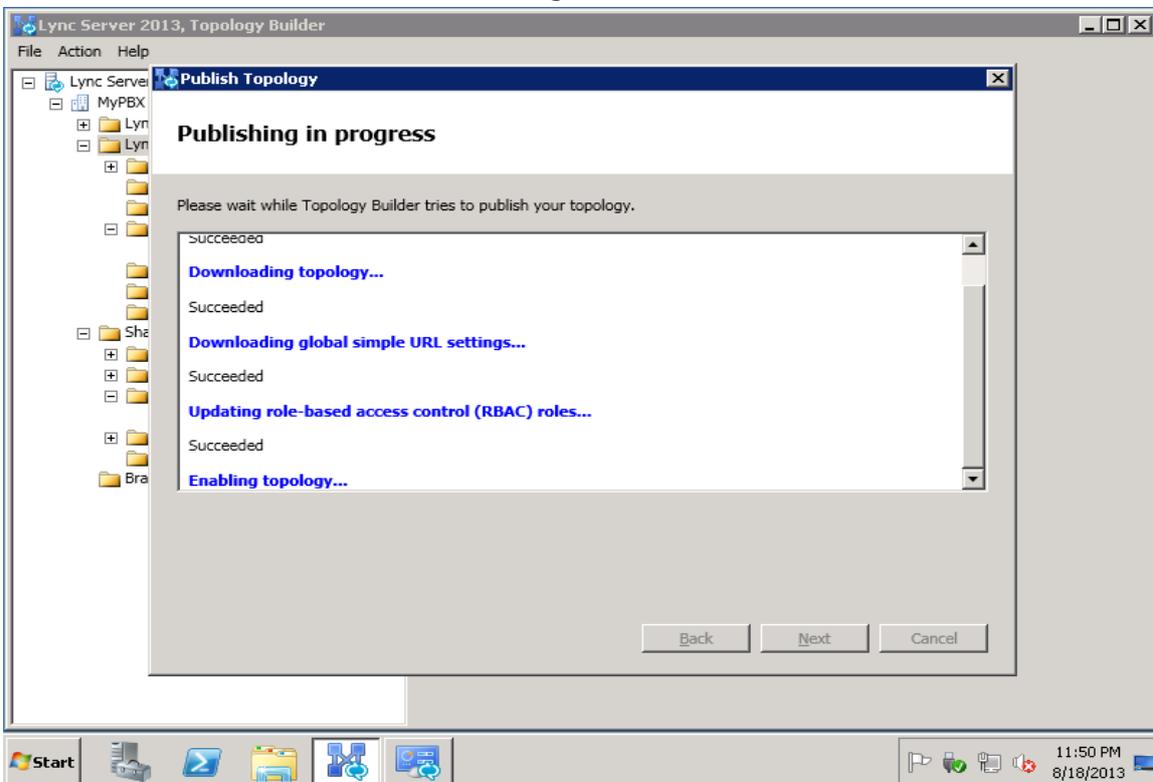
Figure 8
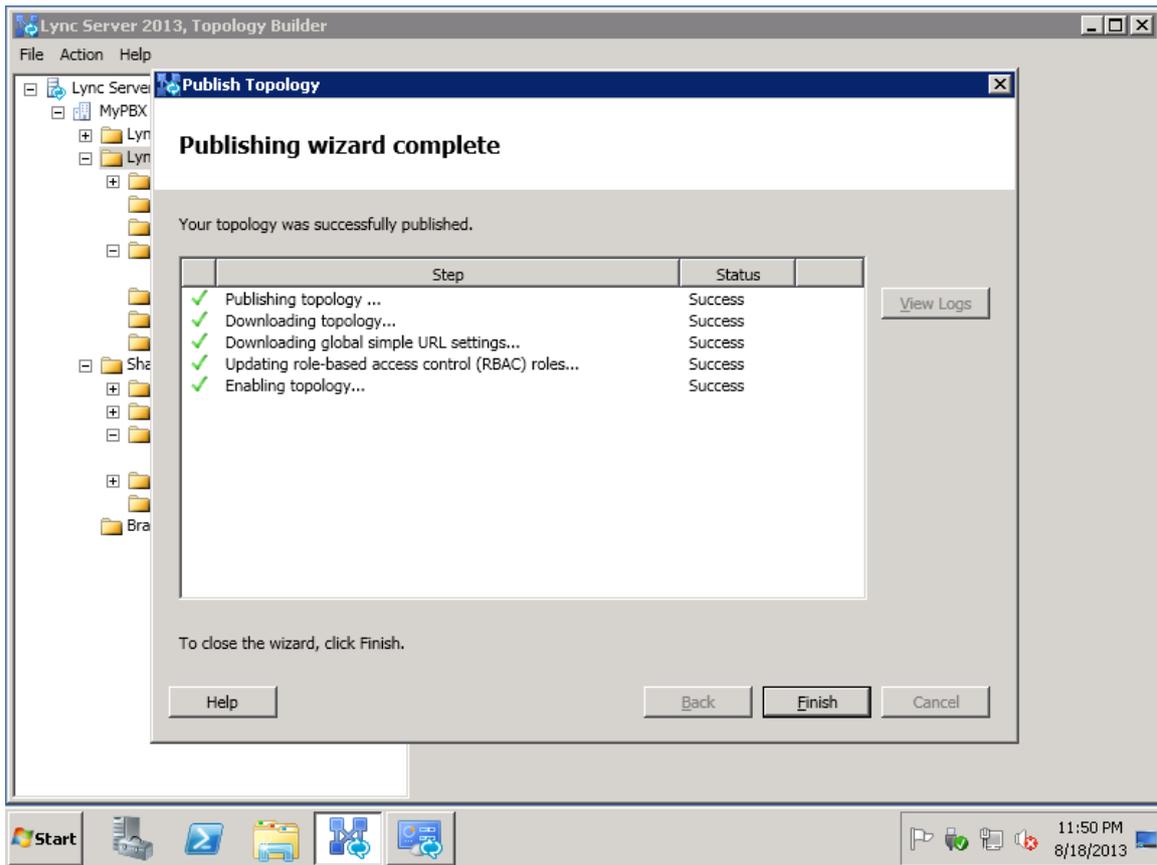
Figure 9

Publishing wizard is completed.

3 Set up rules in Lync Server 2013 Control Panel

3.1 Enable user for Lync Server 2013

Note: please create your account in DC first before adding it into Lync Server.

Enable lync account in "Microsoft Lync Server 2013 Control Panel".
Open "Microsoft Lync Server 2013 Control Panel" and log in.
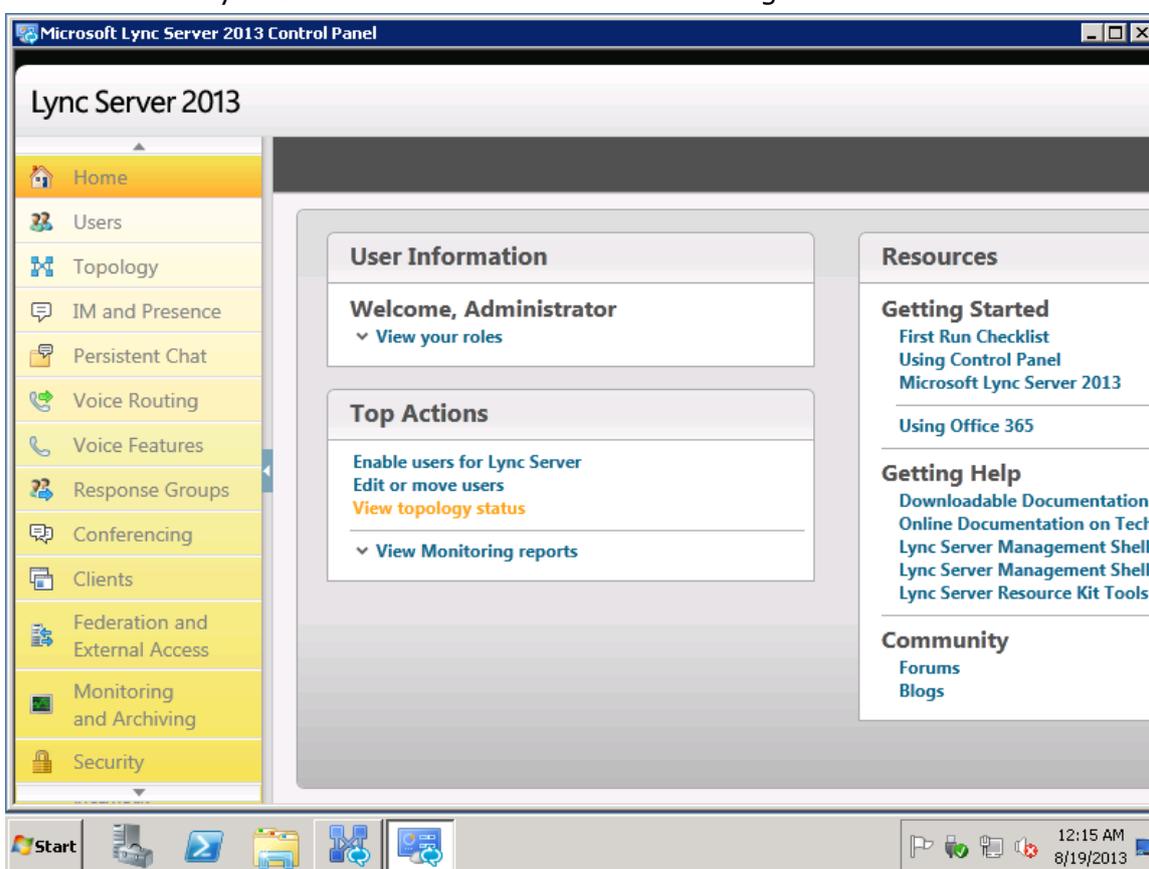
Figure 10

Click "Users" to enable the account and assign a number to the user, in this example:
<u>User: harry</u>
<u>The number is: +800</u>
Click "Enable Users" to start:
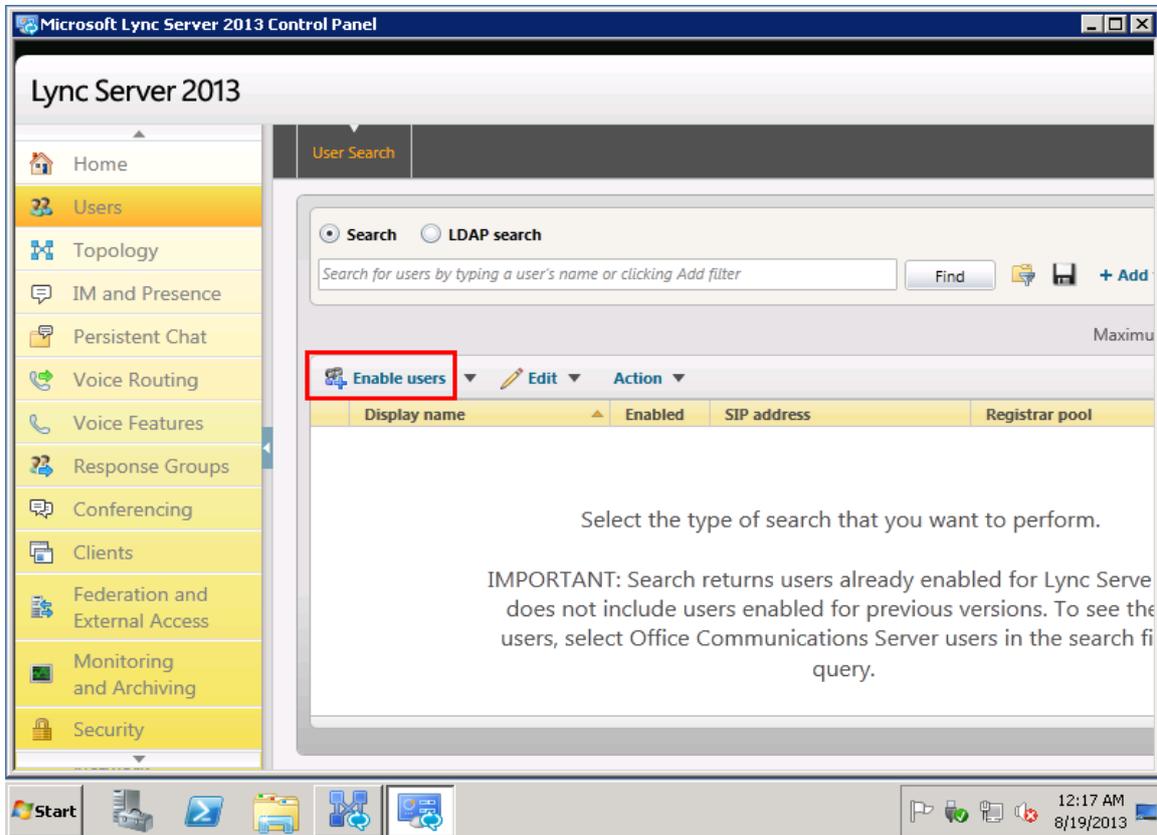
Figure 11

Click "Enable Users".
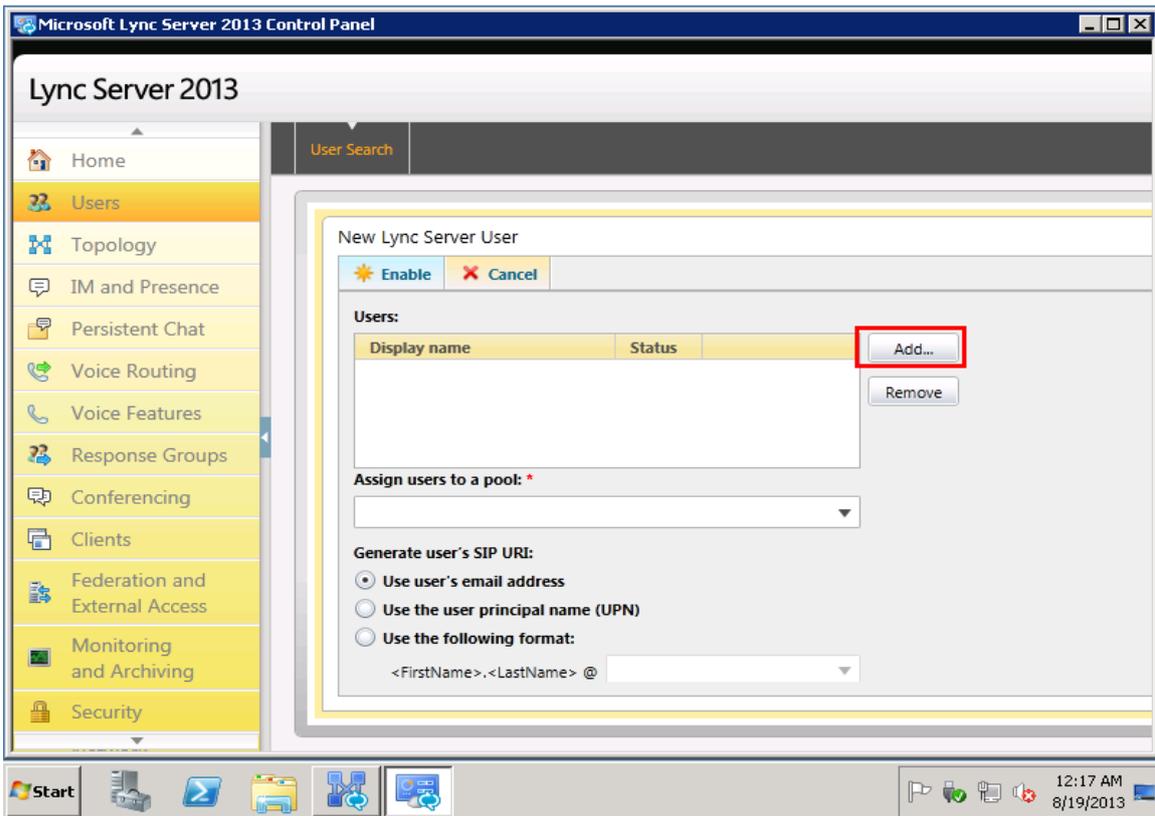
Figure 12

Click "Add".
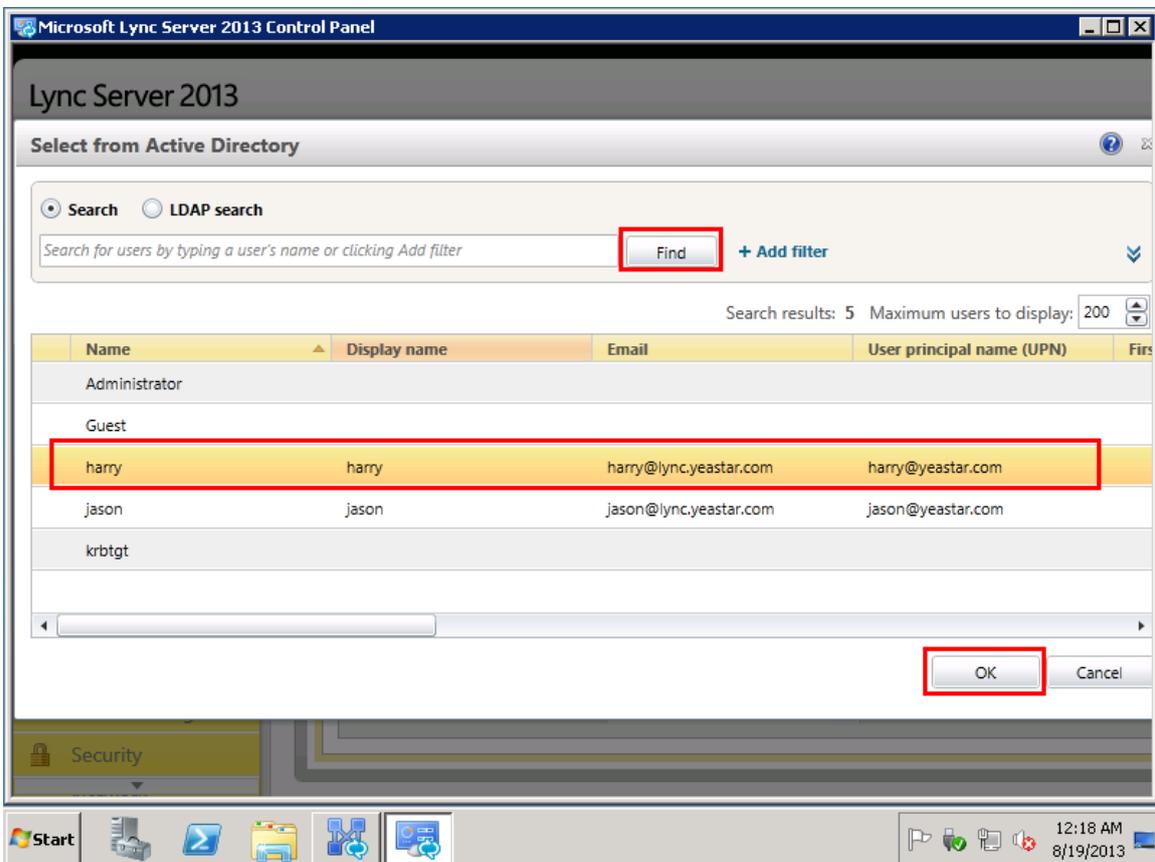
Figure 13

Click "find". Choose the account "harry" before clicking "ok".

Assign user to pool: lync.yeastar.com
For user's SIP URL to log in the client software, we recommend using user's email address
Telephony: Enterprise Voice
Line URL: tel:+800
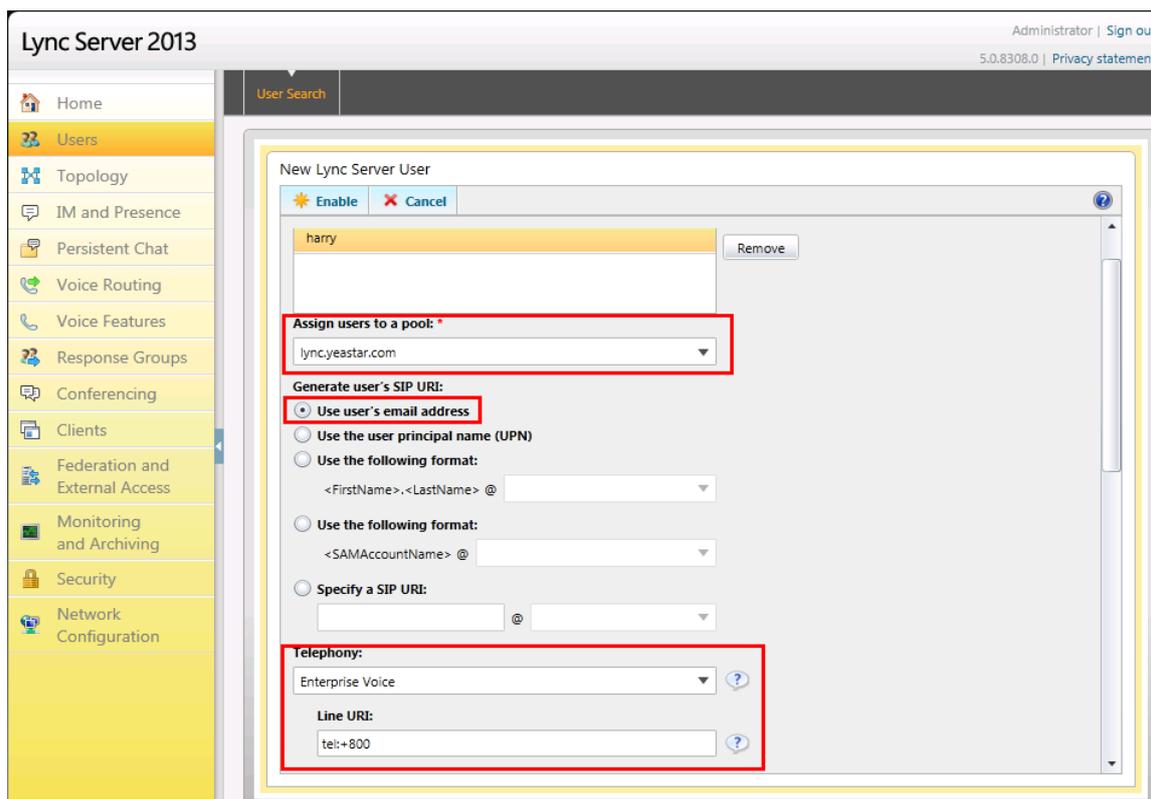
Figure 14

Click "Enable" to save it.
Log in the client software with the new account: harry@lync.yeastar.com to test if it is successfully added as a Lync Server user.
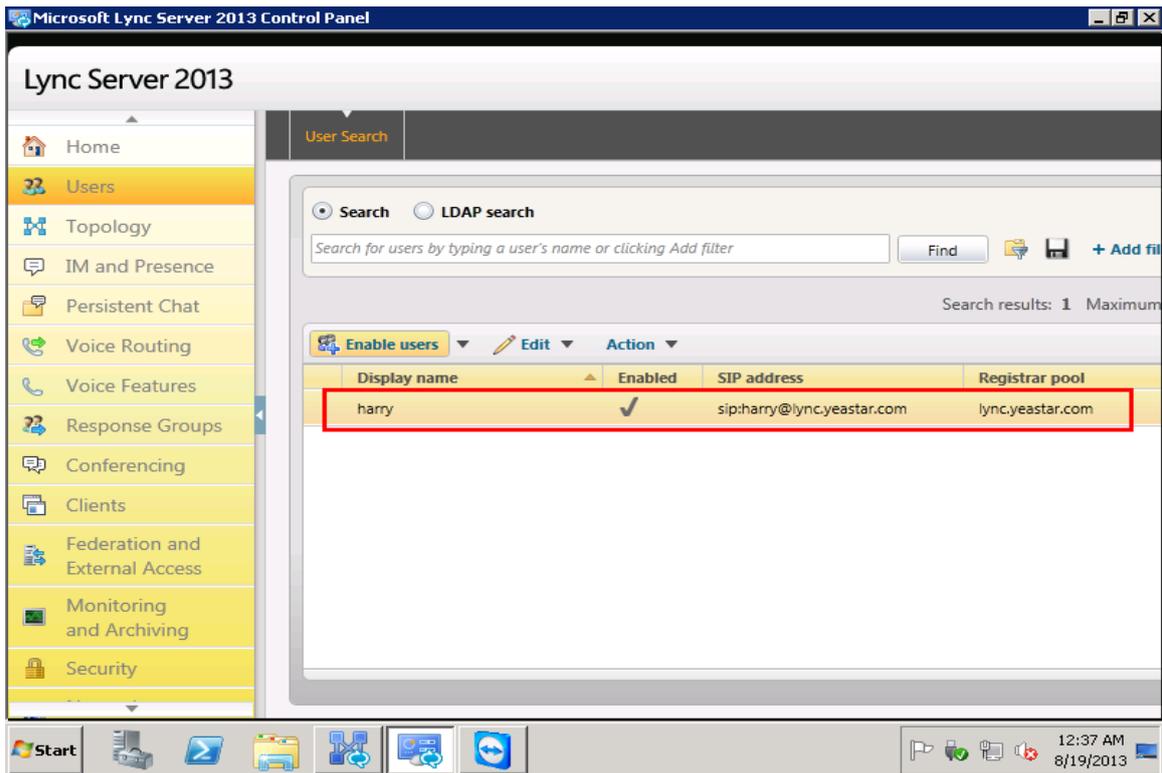
Figure 15

Open Lync client software and log in lync.yeastar.com using "harry@lync.yeastar.com".
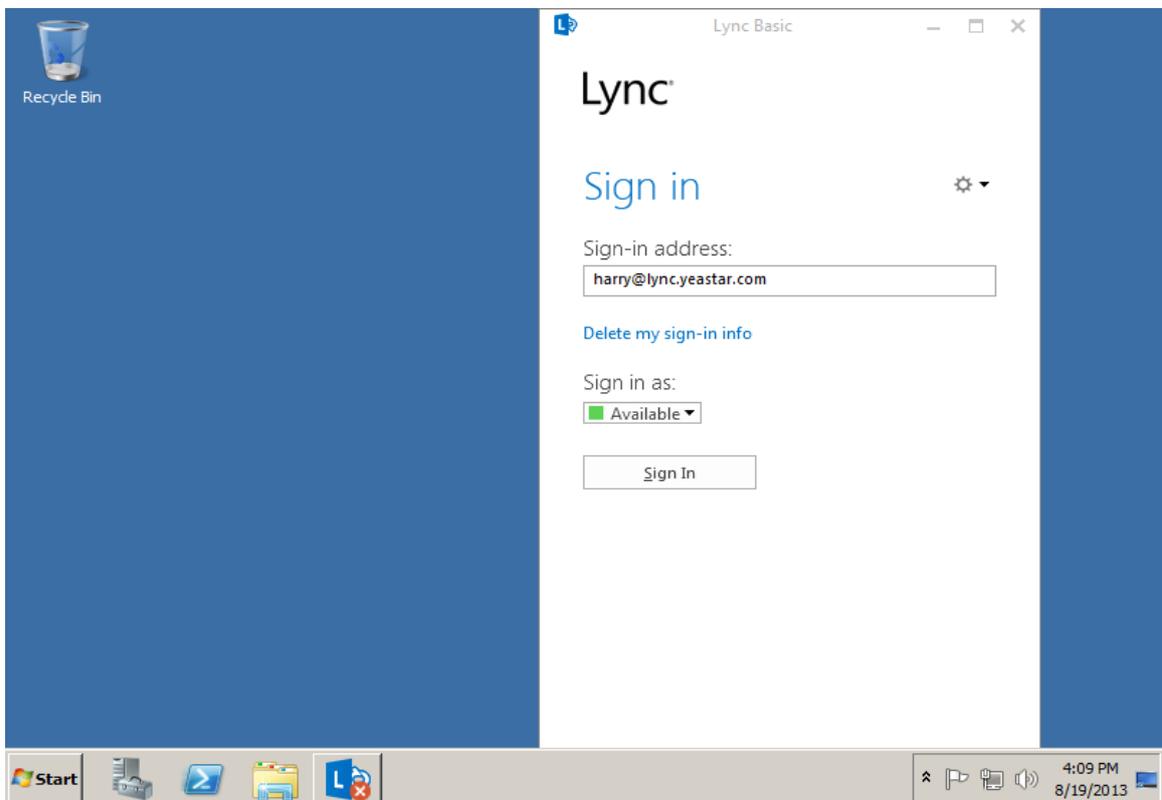
Figure 16
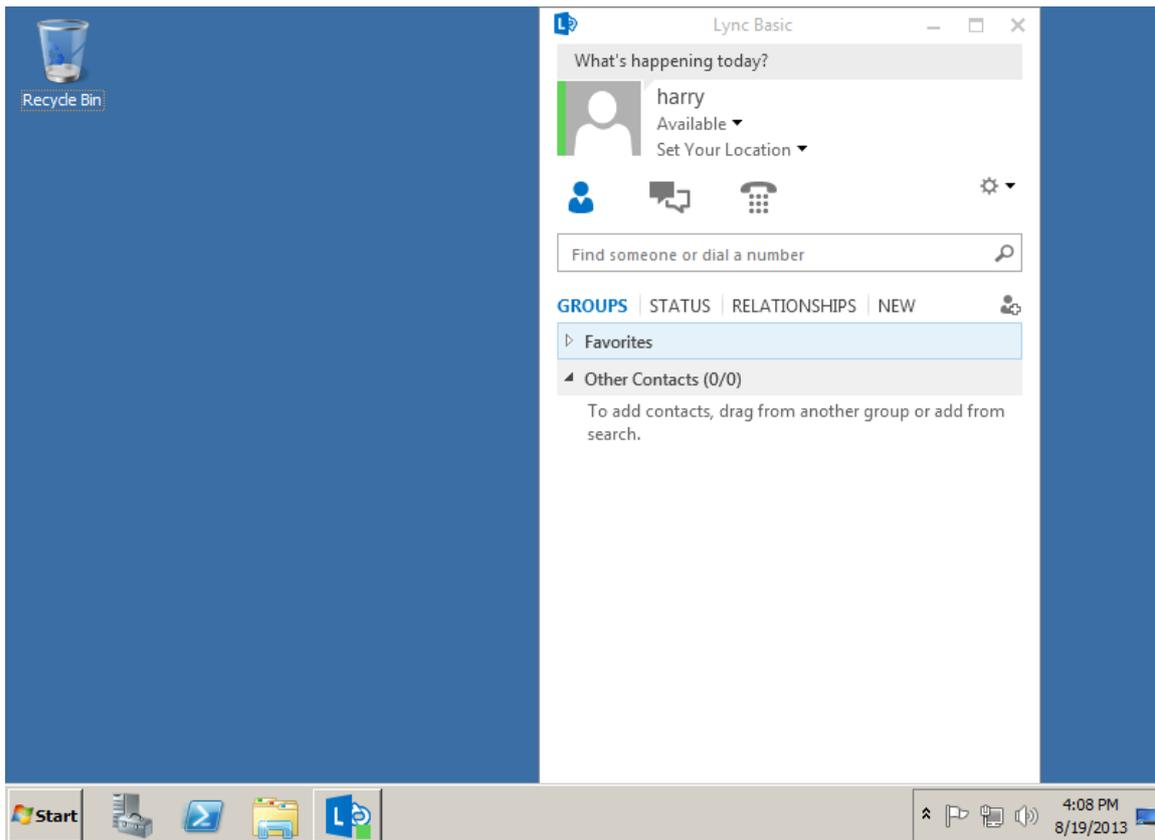
Figure 17

3.2 Create call rules in control panel

Note: the extension number of Lync Server 2013 starts with "+".
Edit the "Global" dial plan.
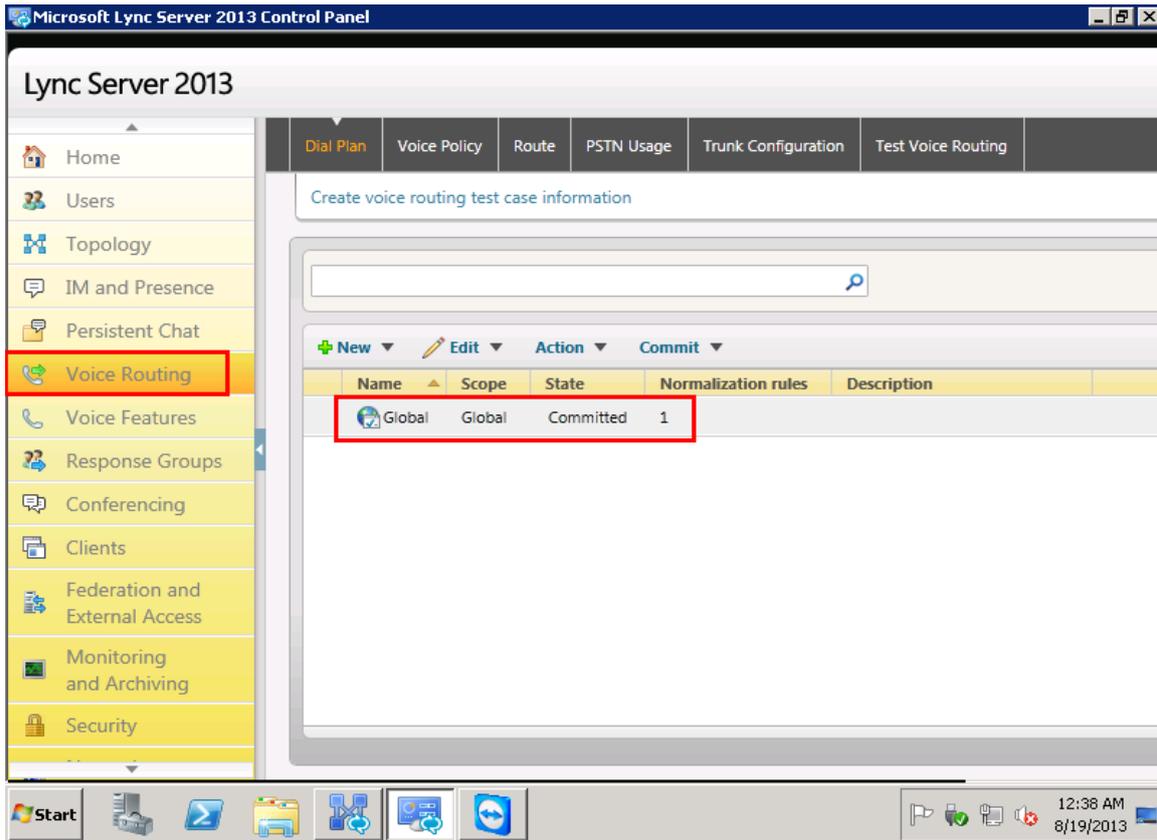
Figure 18

Edit the rule of "Keep All"; we need to add a "+" as the prefix.
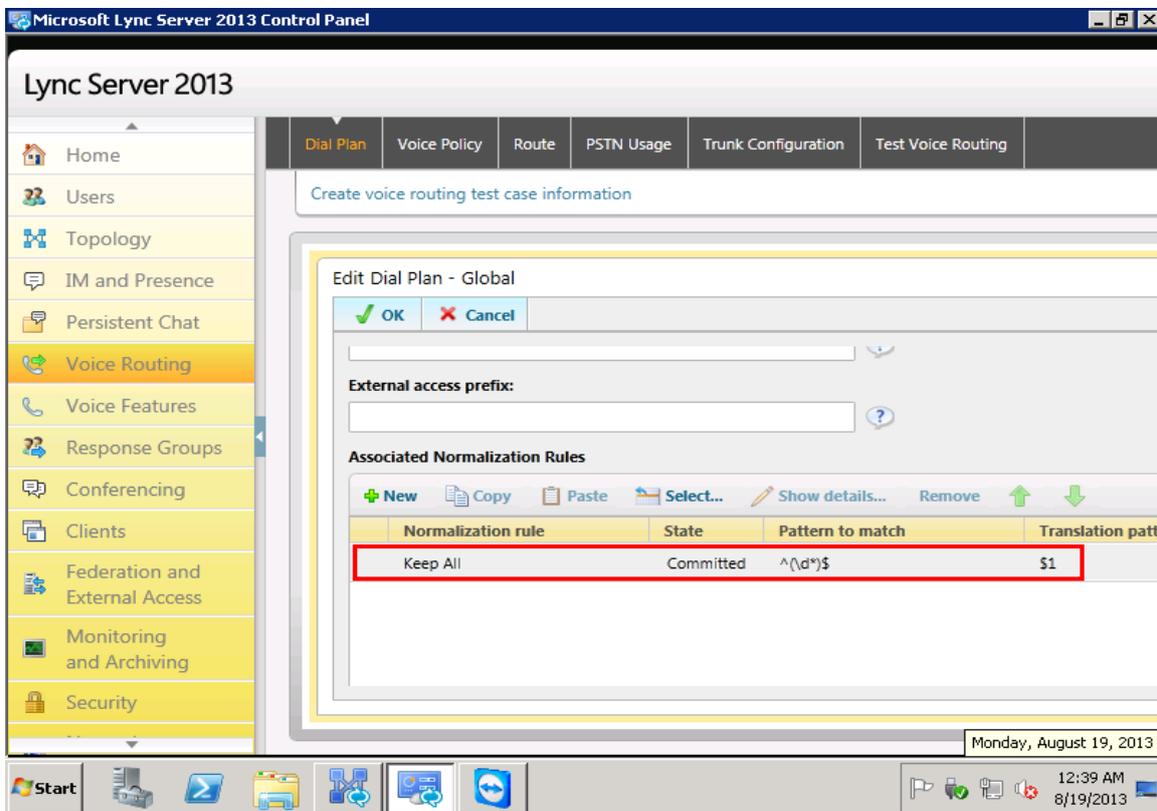
Figure 19

Modify the length to "Any", add "+" in field "Digits to add", then click "Ok" to save it
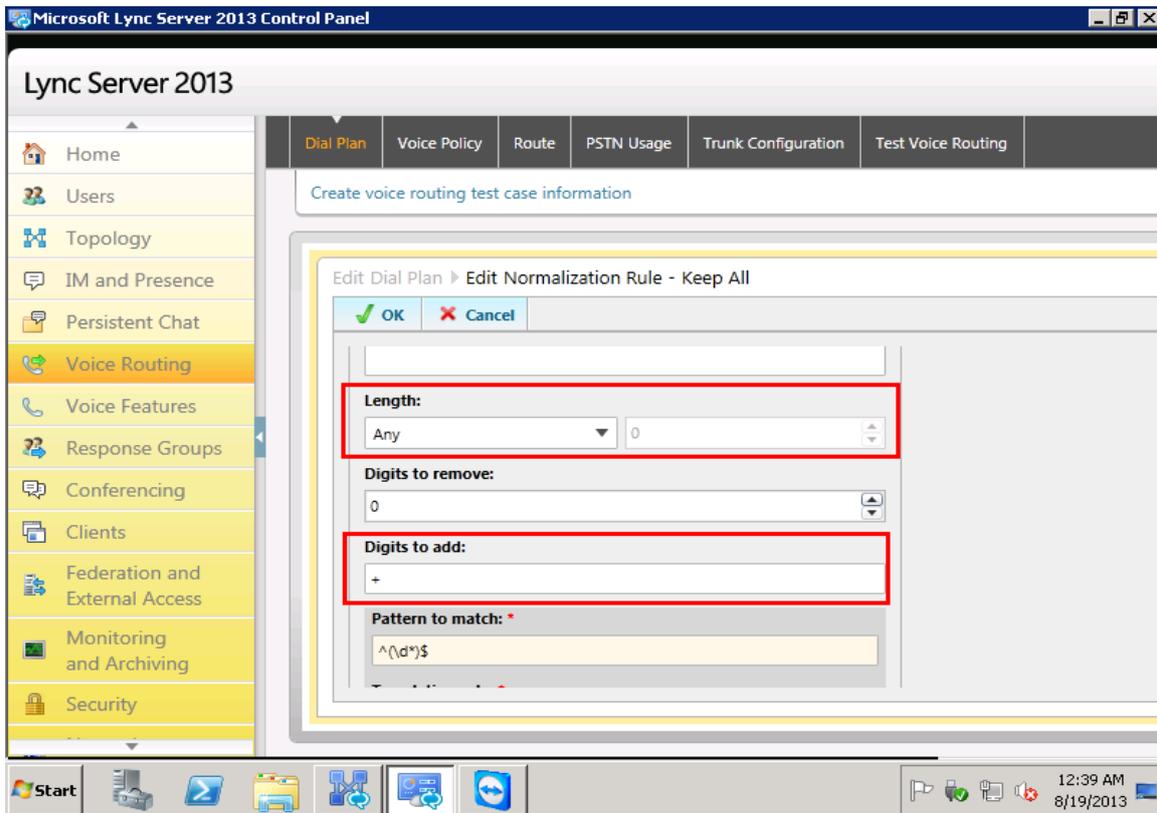
Figure 20

You can input the test number to see if the translation rule works fine.
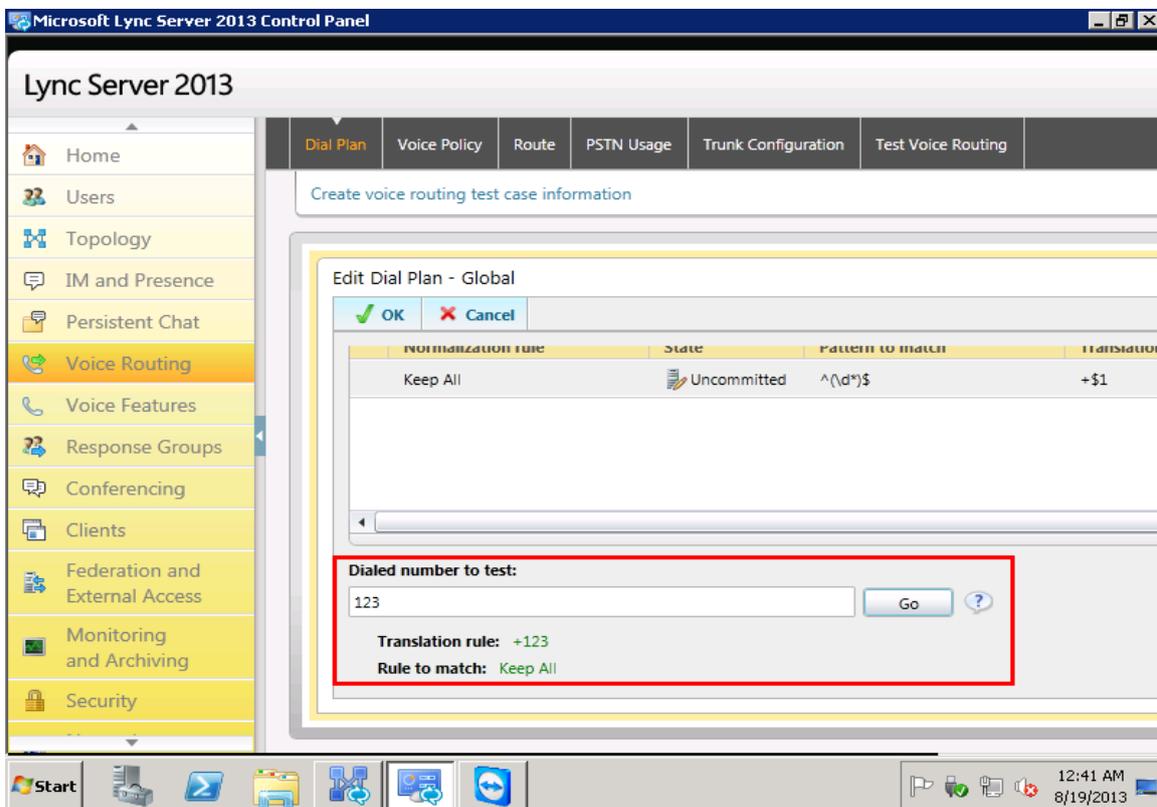
Figure 21

Edit the "Voice Policy"→"Global".
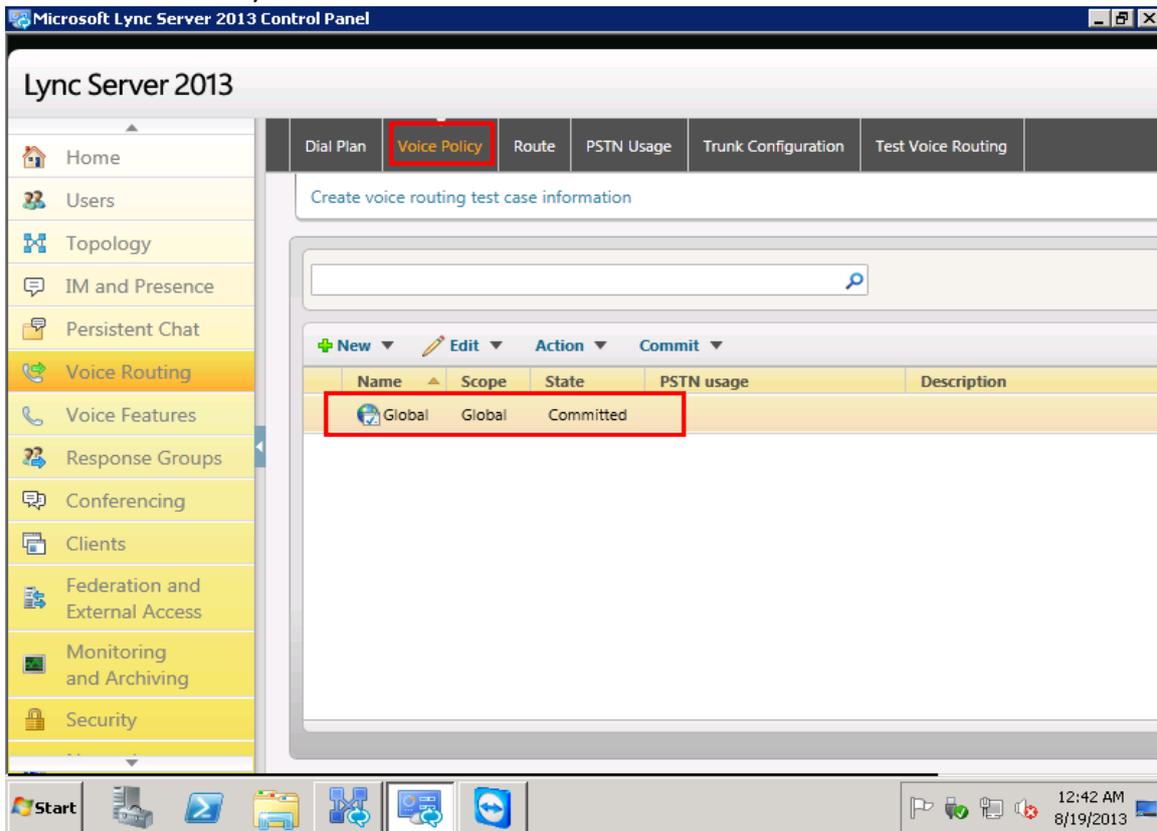
Figure 22

Click "Select" and choose the Local into "Associated PSTN Usages".
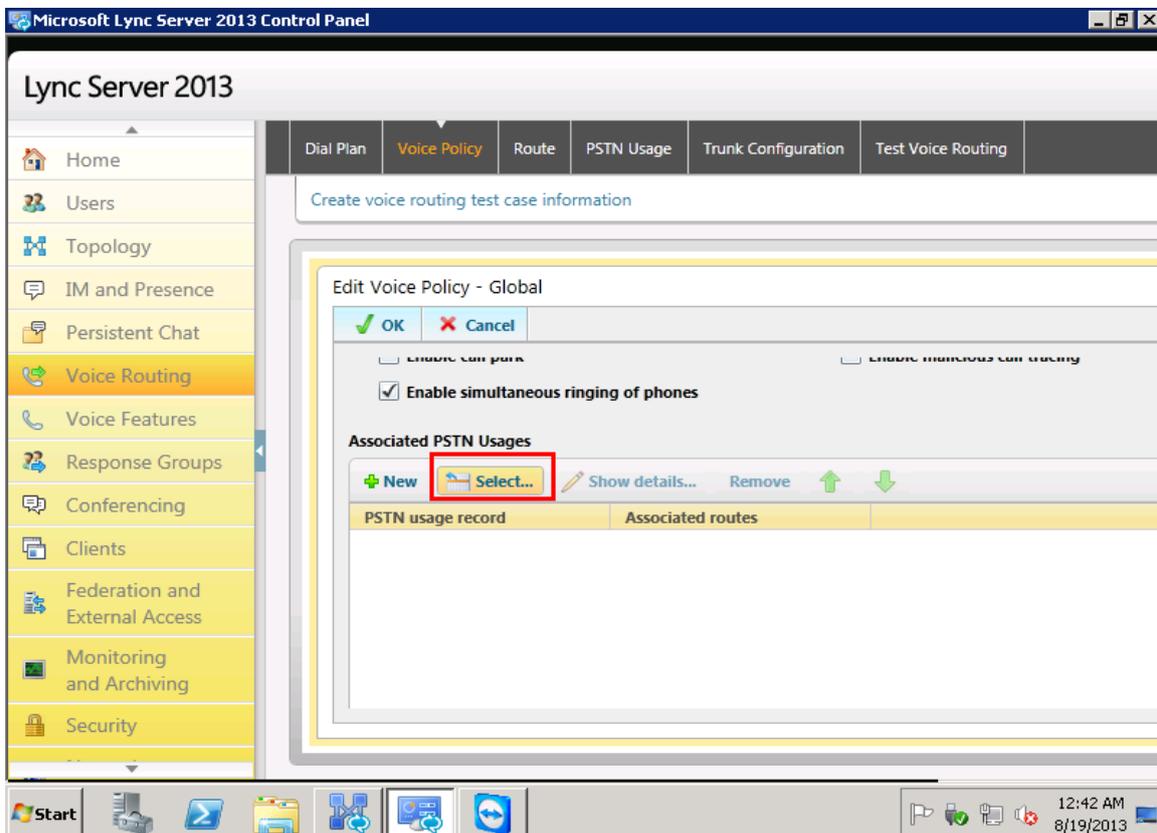
Figure 23
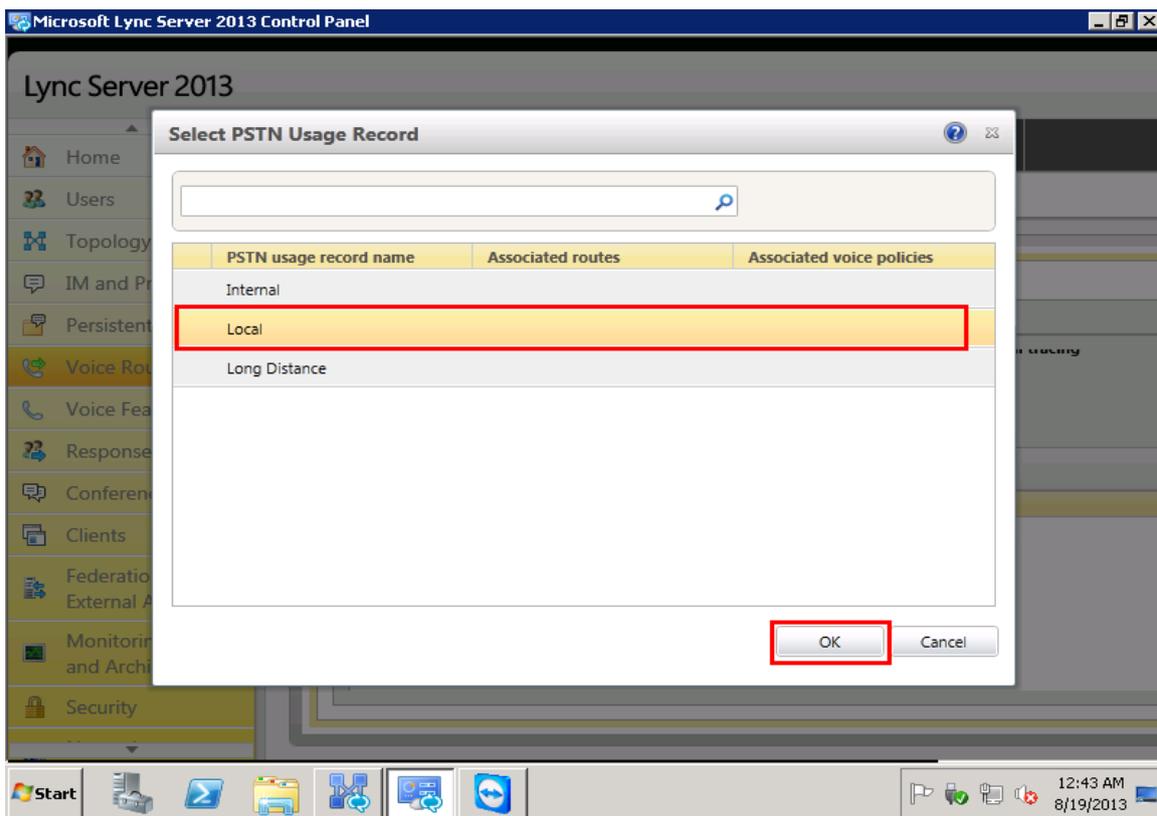
Figure 24
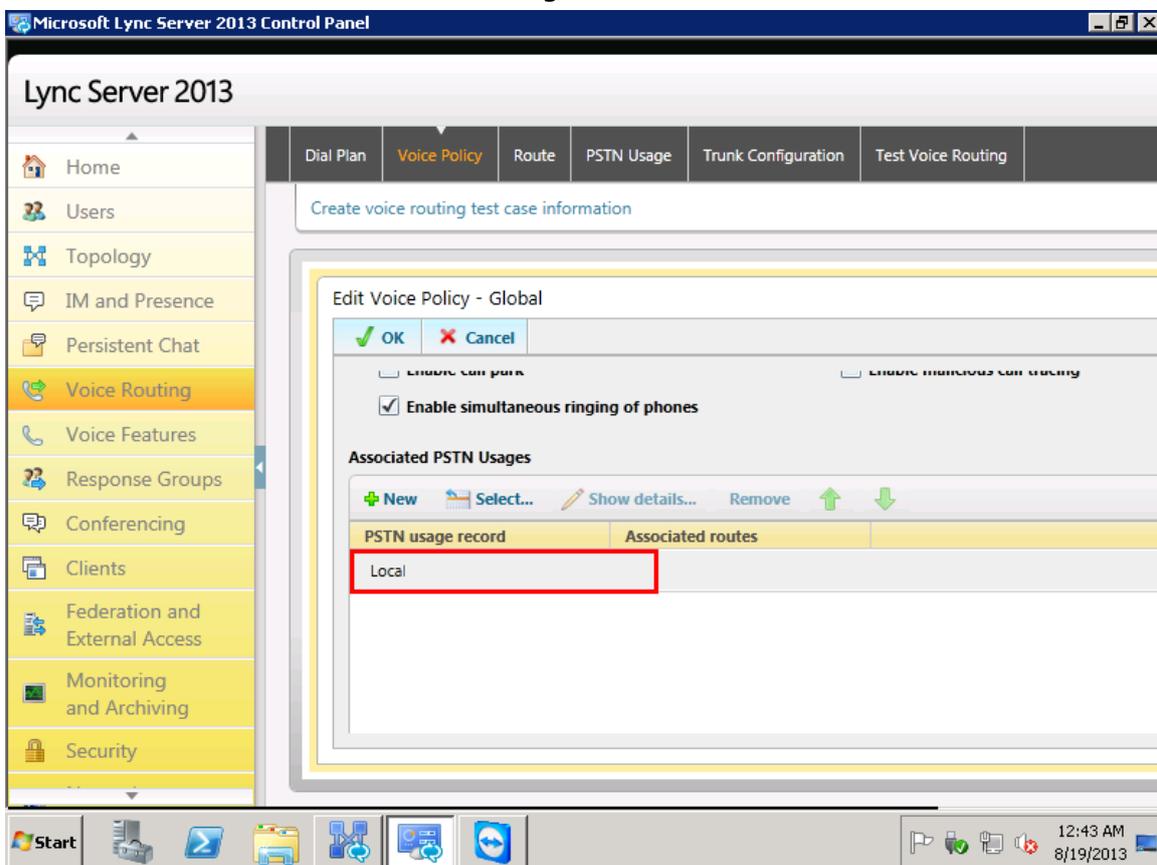
Figure 25

Click "OK" to save it. Edit the "Route" page.
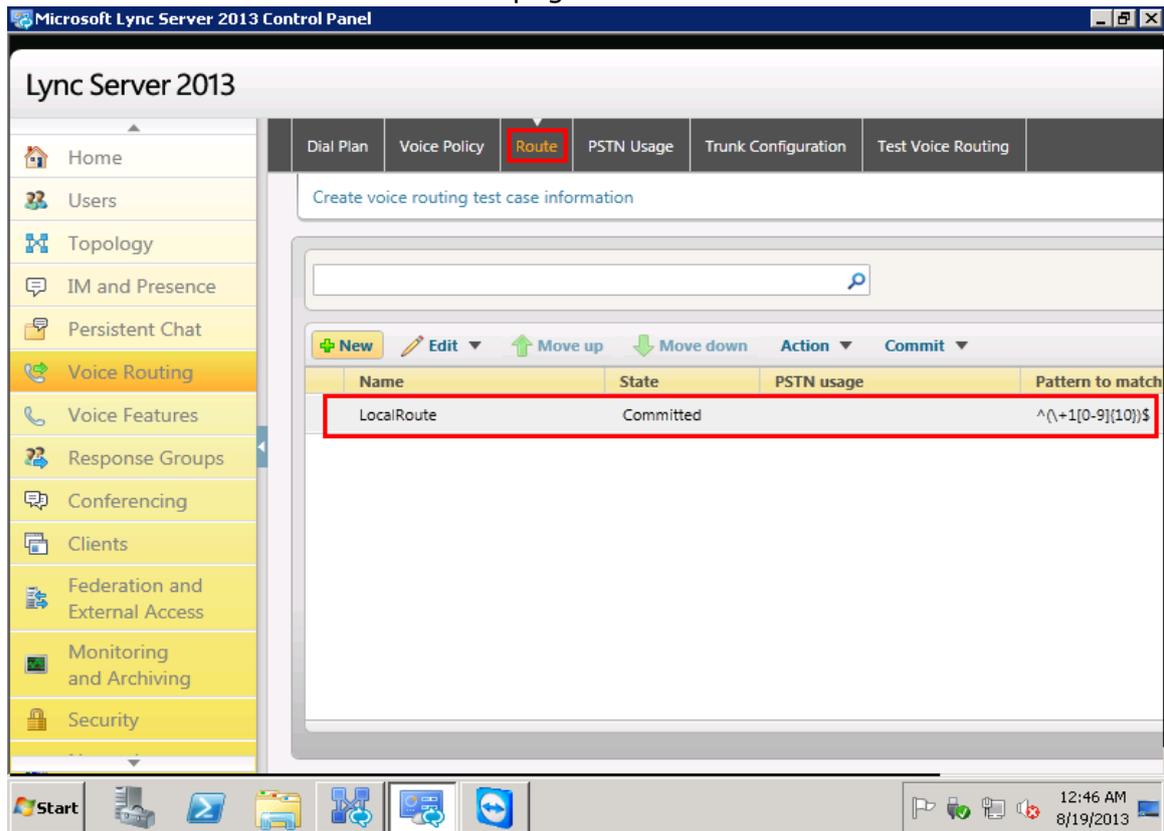
Figure 26

Click "LocalRoute" to start editing.
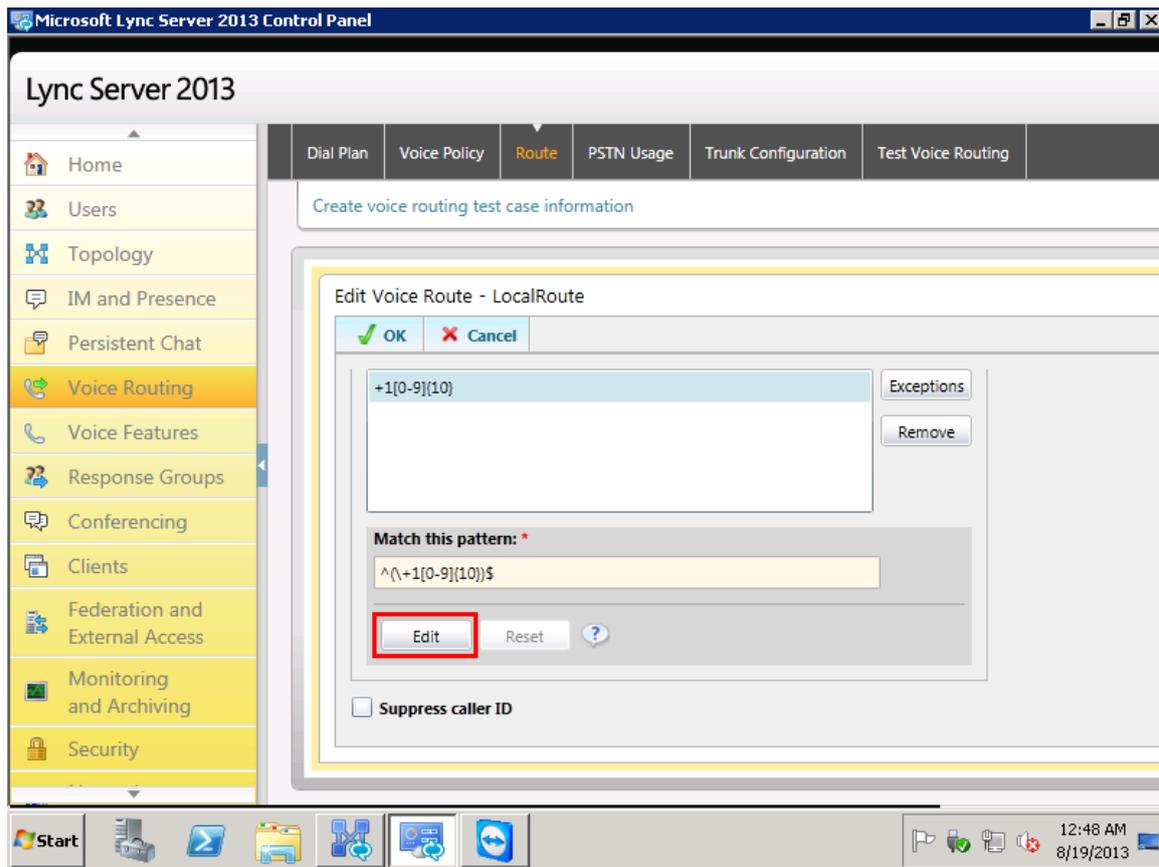
Figure 27

The default value is: ^(\+1[0-9]{10})$

Click Edit to modify the default pattern to ^(\+\d*)$
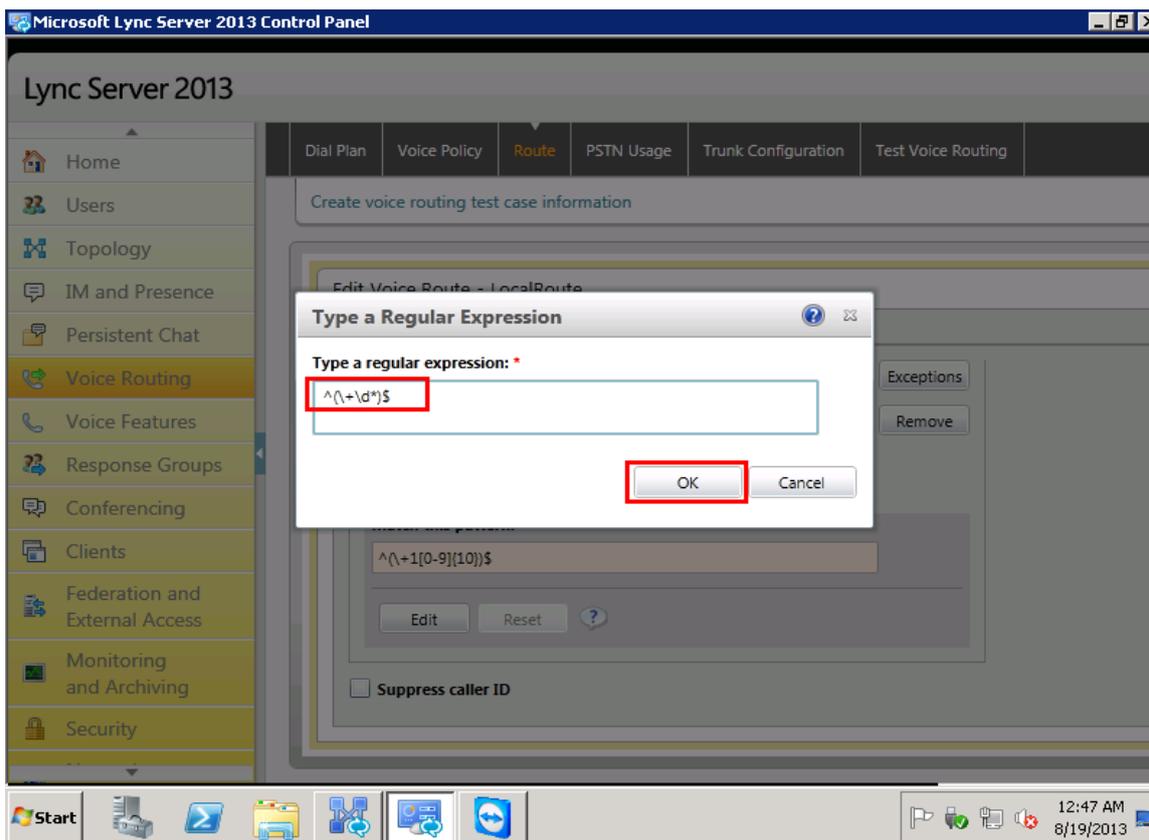
Figure 28

Click "OK" to save it, and you will see the modified patten as below:
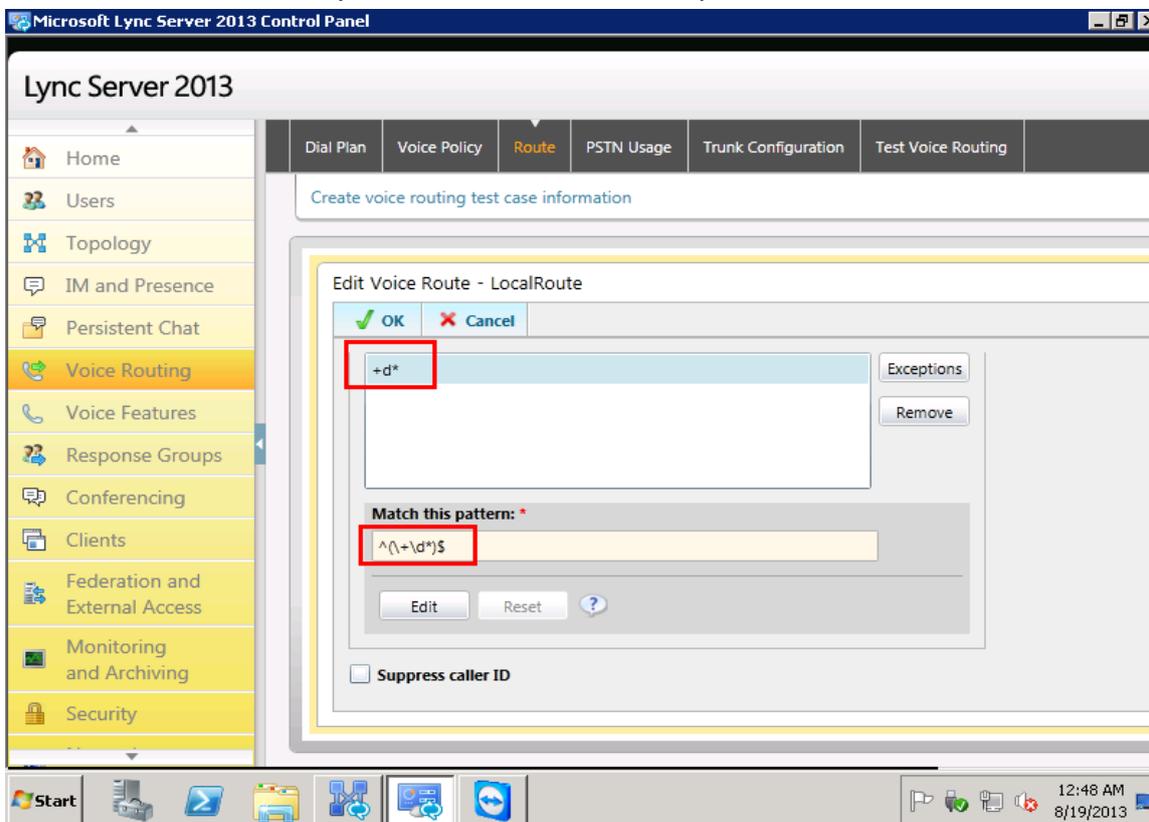
Figure 29

Add the associated trunk:
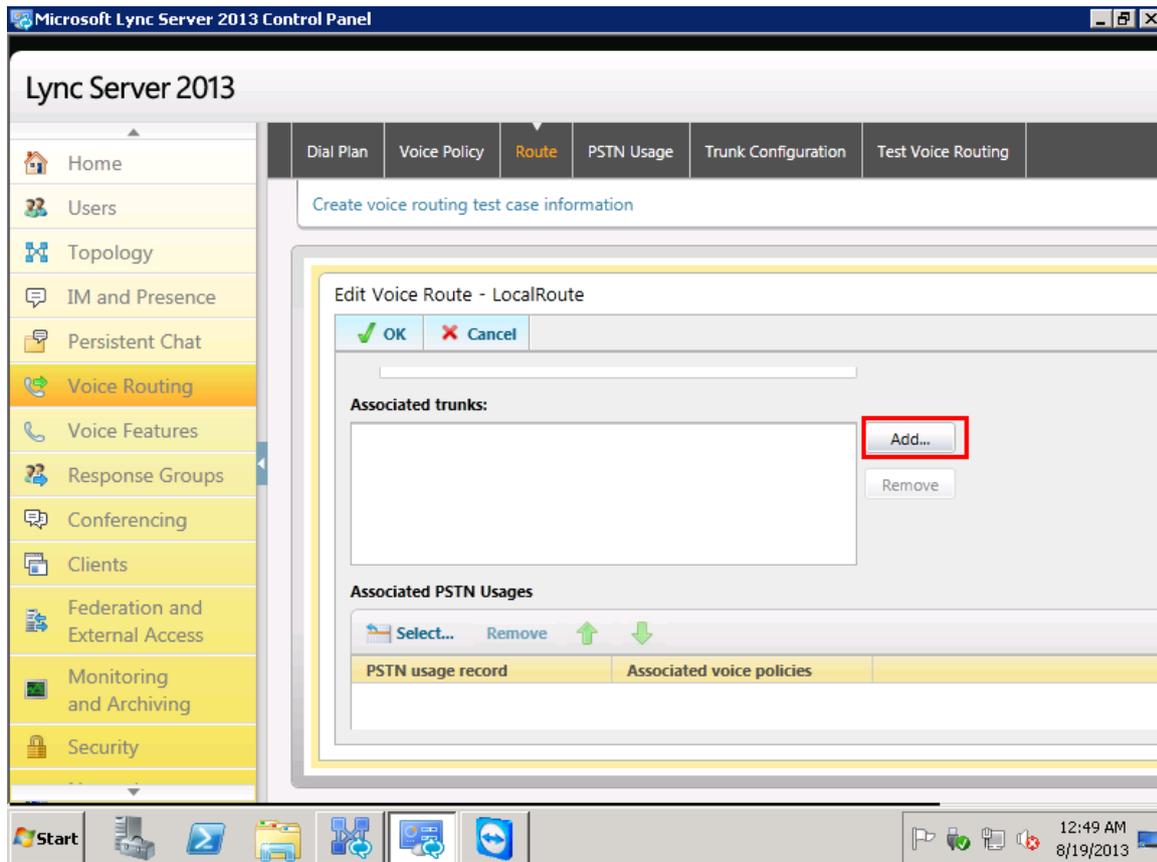
Figure 30

Choose the gateway we created to MyPBX, in this example: PstnGateway: 192.168.4.142.
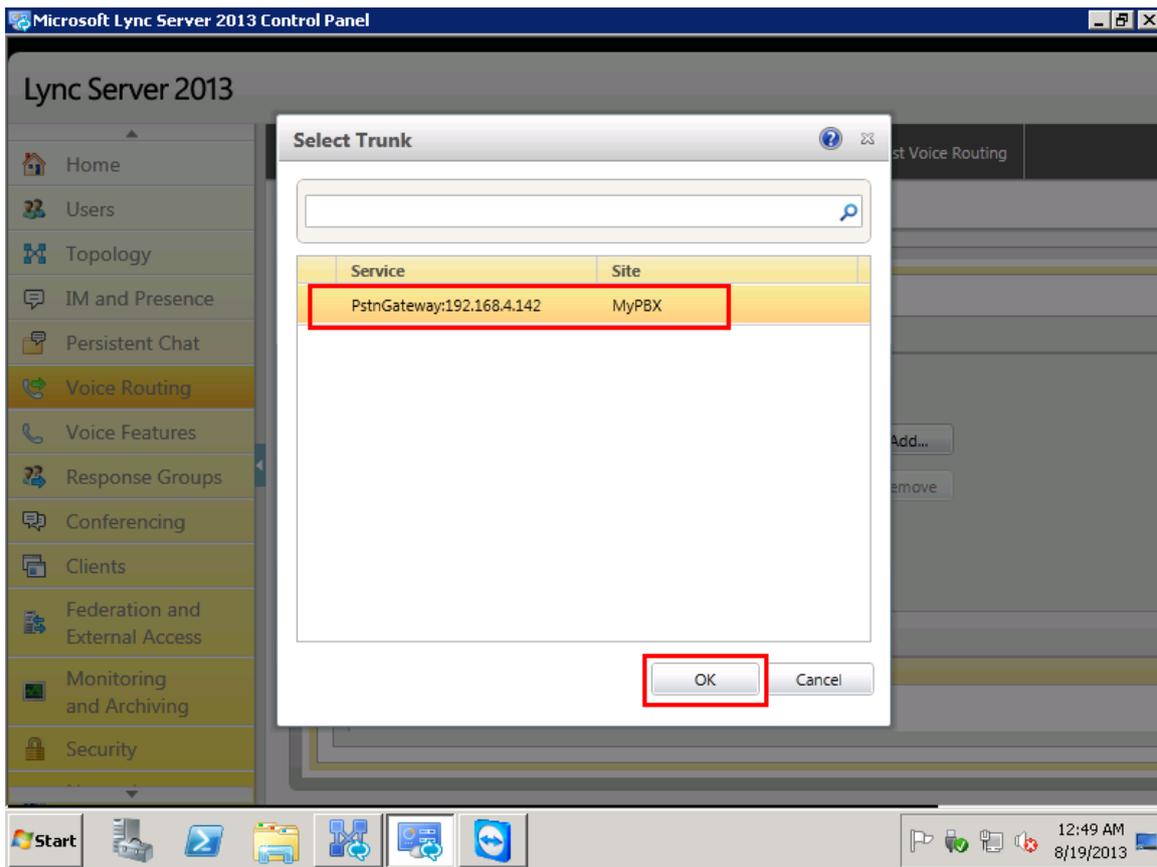
Figure 31
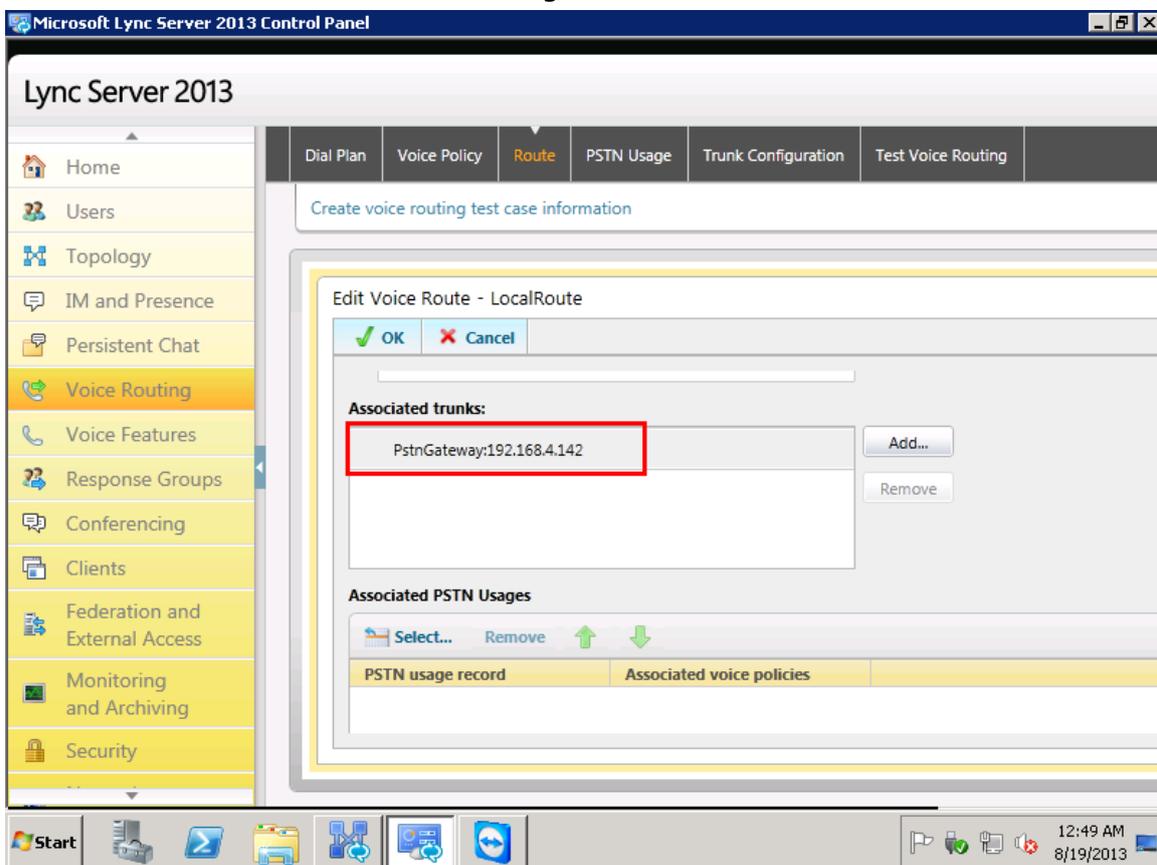
Figure 32

Select the assoiciated PSTN Usages:
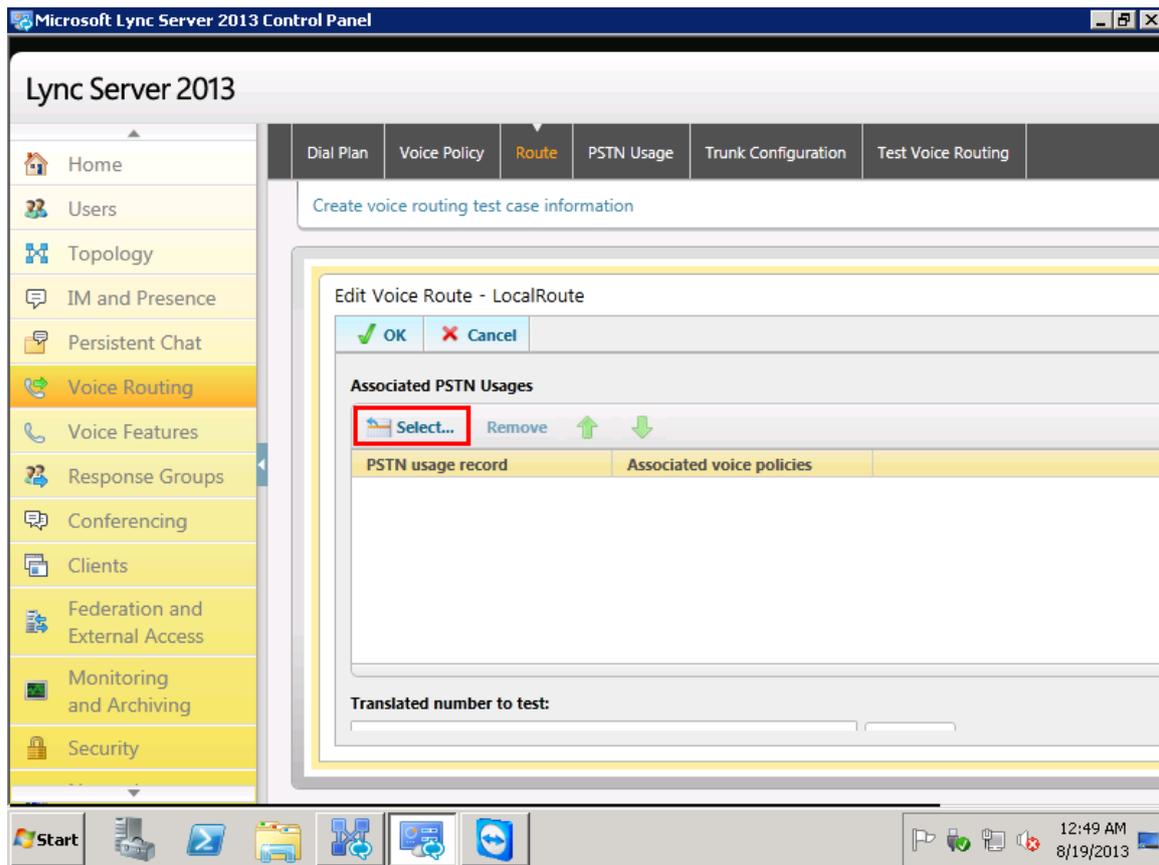
Figure 33

Choose "Local" and "OK" to save it.
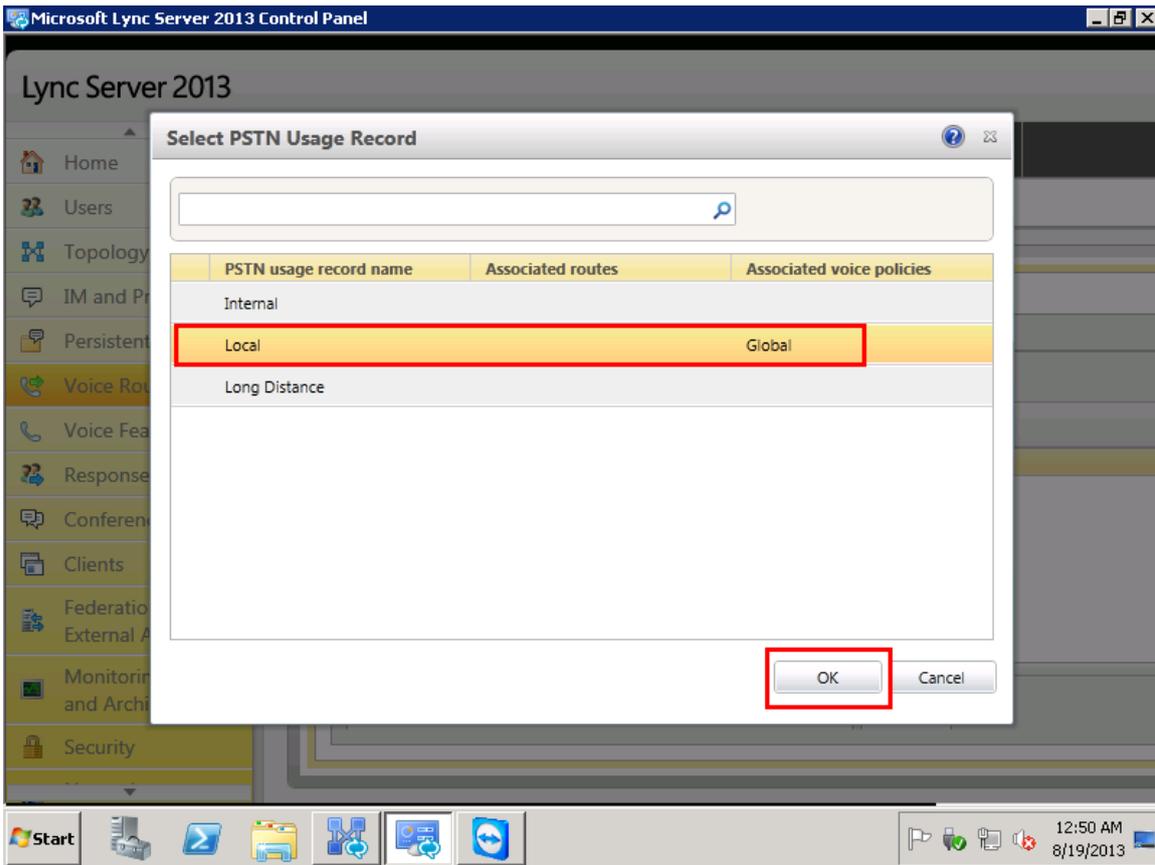
Figure 34
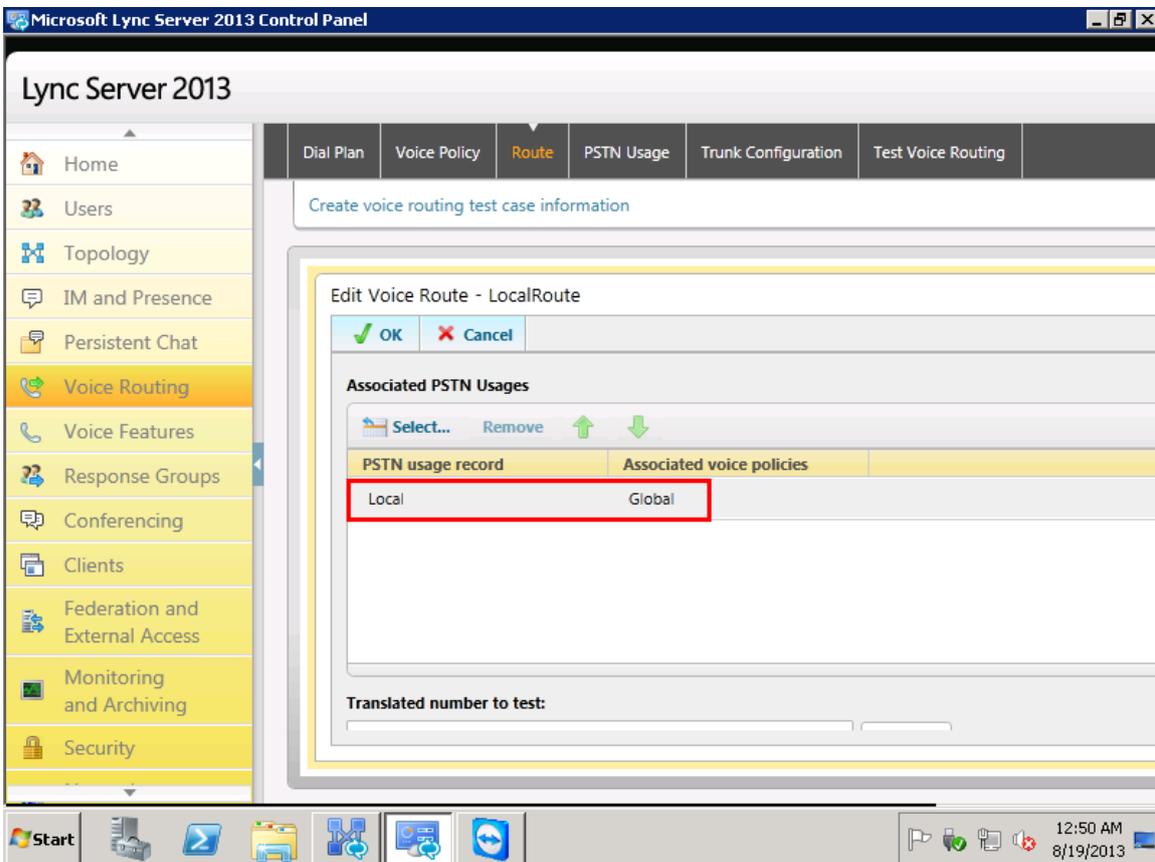
Figure 35

Click the "PSTN Usage", make sure the Routers is "LocalRoute", Policies is "Global".
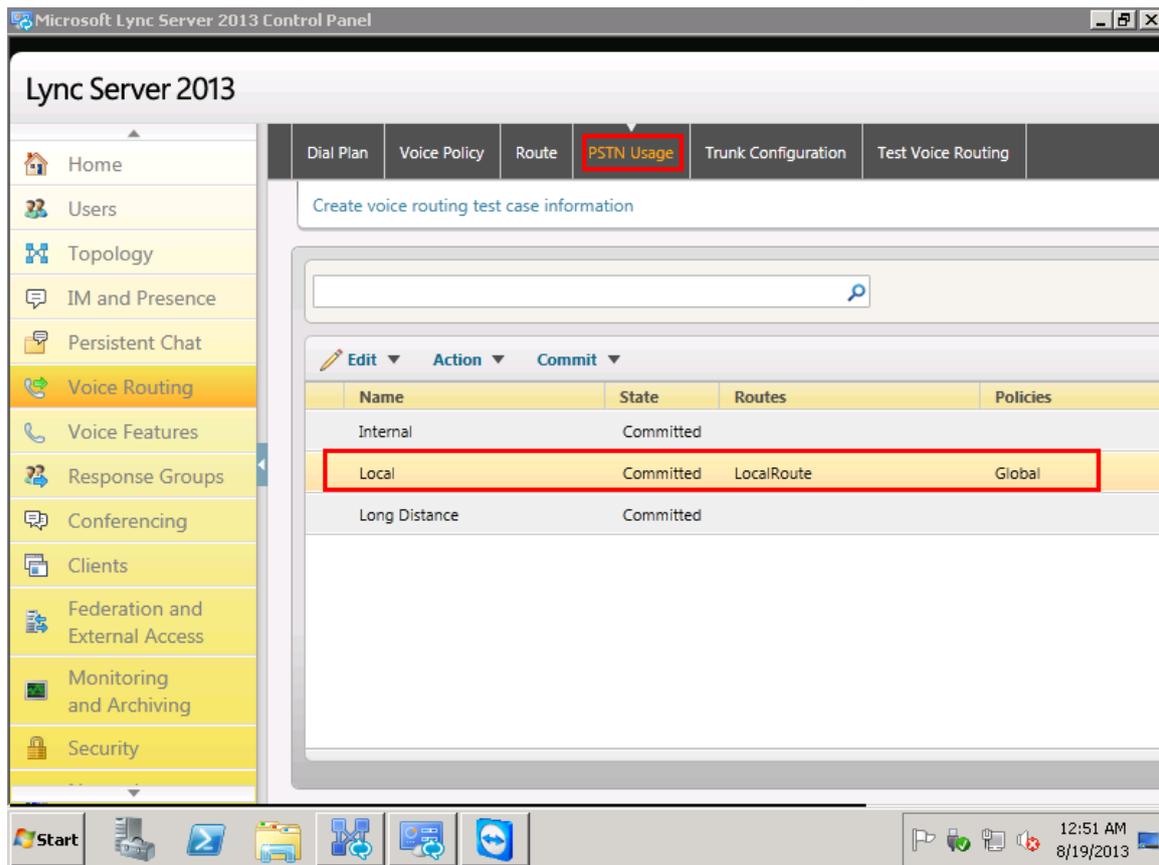
Figure 36

Edit the "Trunk Configuration" page.
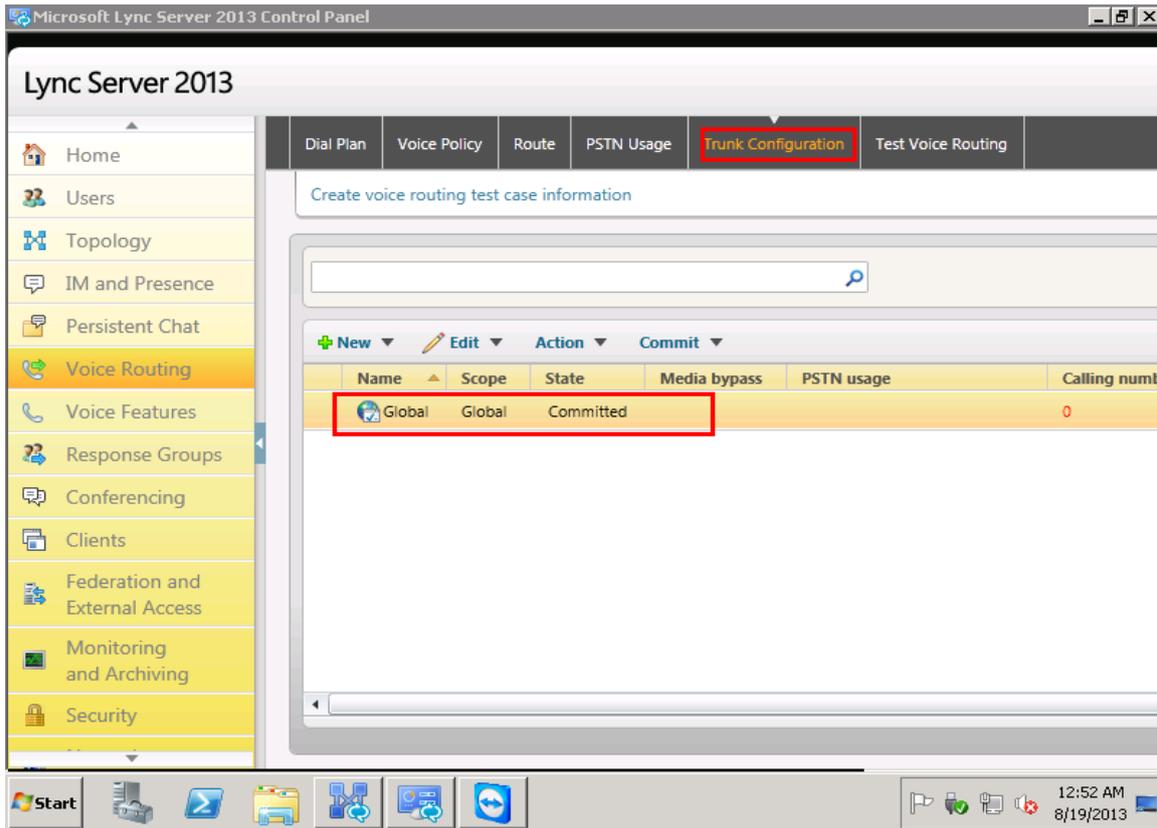
Figure 37

Click "Global" to start.
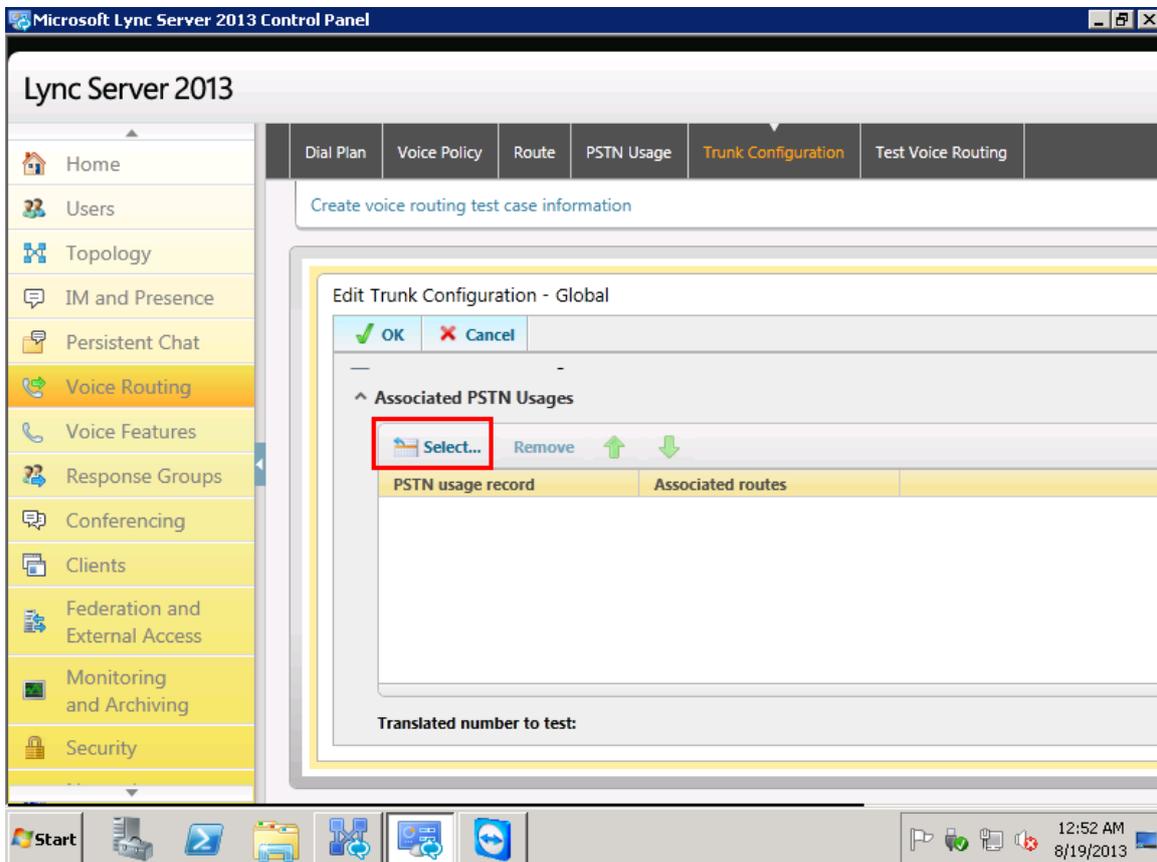
Figure 38

Click "Select" to choose the associated PSTN usage for this trunk.
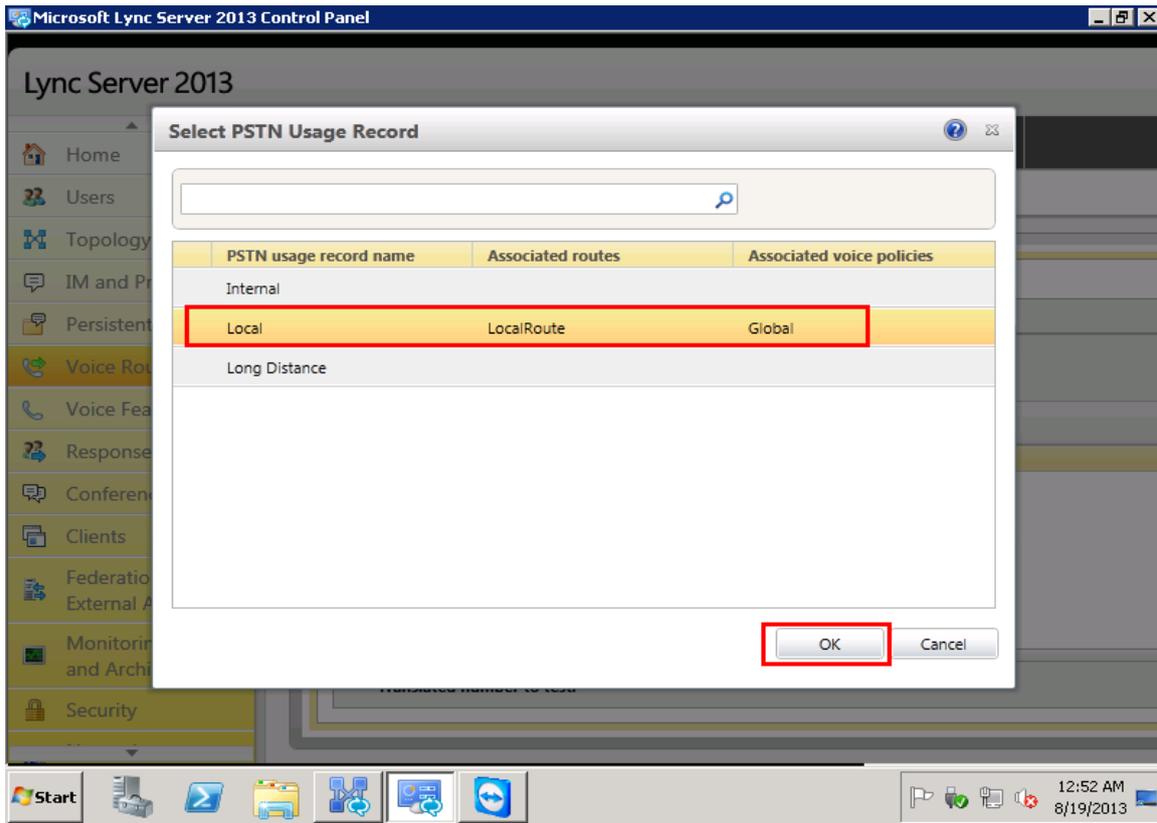
Figure 39

Chose "Local" in this exaple, click "OK" to save it.
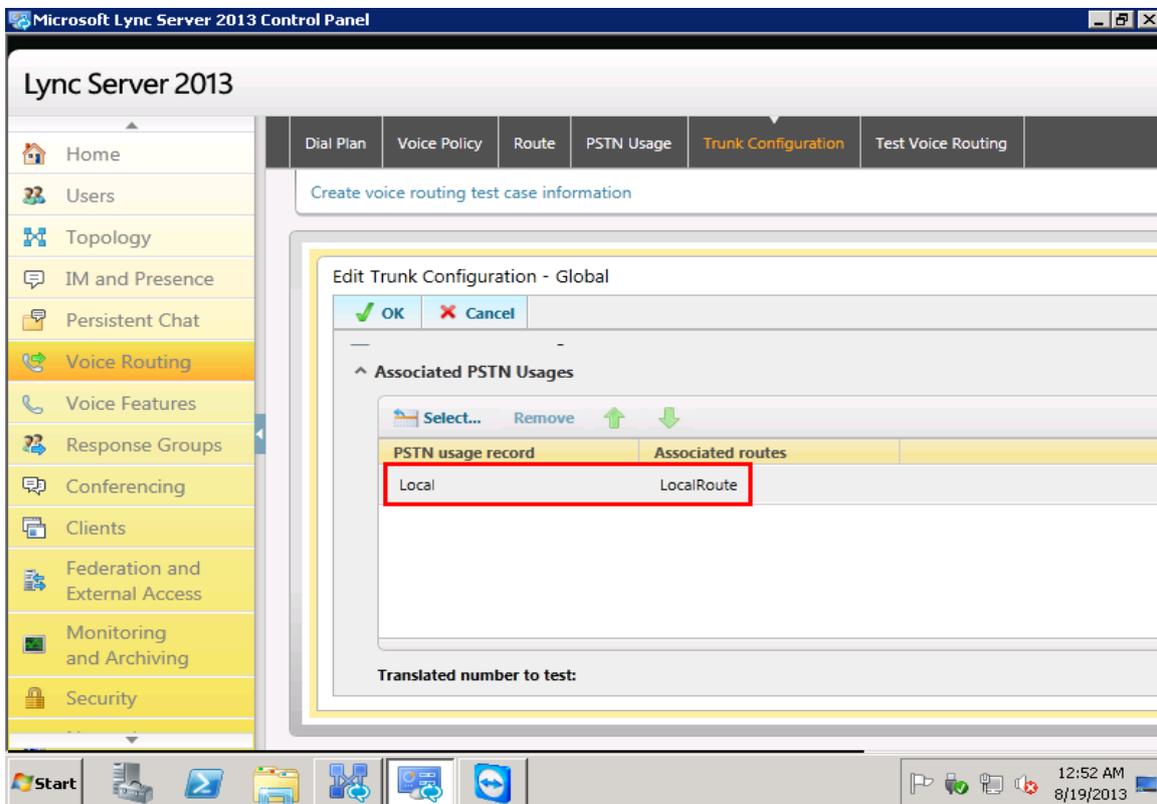
Figure 40

Click "OK".
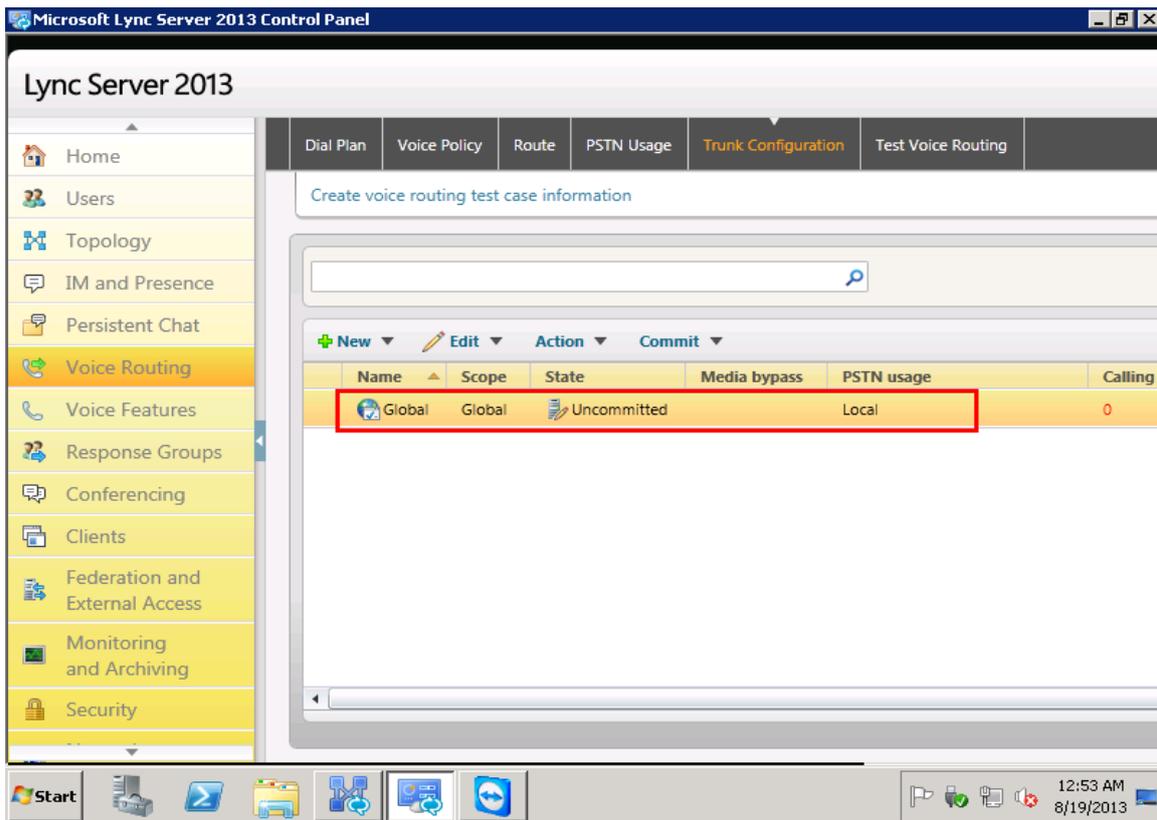
Figure 41

You can see the PSTN usage here, click "Commit"→"Commit all" to take effect.
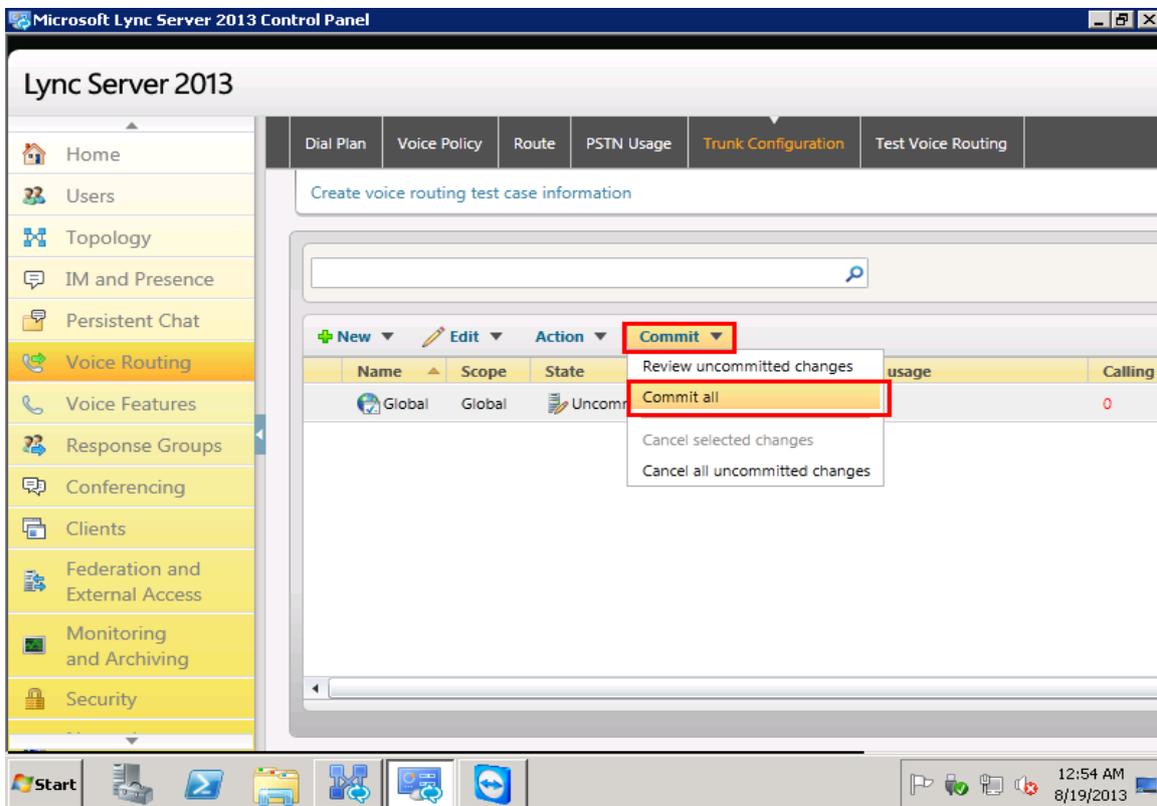
Figure 42

Click "Test Voice Routing" to see if our rules are correct.
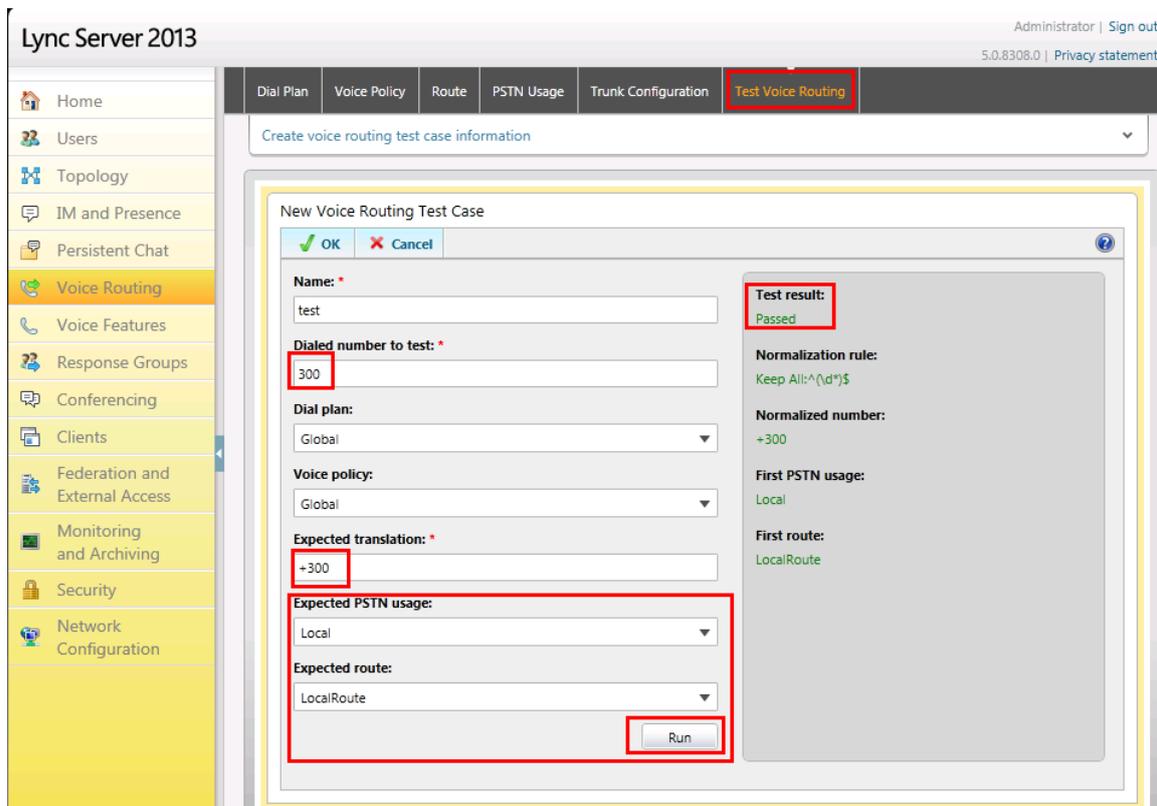
Figure 43

Test result: Passed. The configuration on Lync Server 2013 is completed.

4 Set up rules in MyPBX web interface

4.1 Create Service Provider trunk to Lync Server 2013

Create a "Service Provider" SIP trunk:

Hostname/IP: the IP of Lync Server 2013 is "192.168.5.247".

Port: 5068 (the default port for TCP protocol)

Transport: TCP
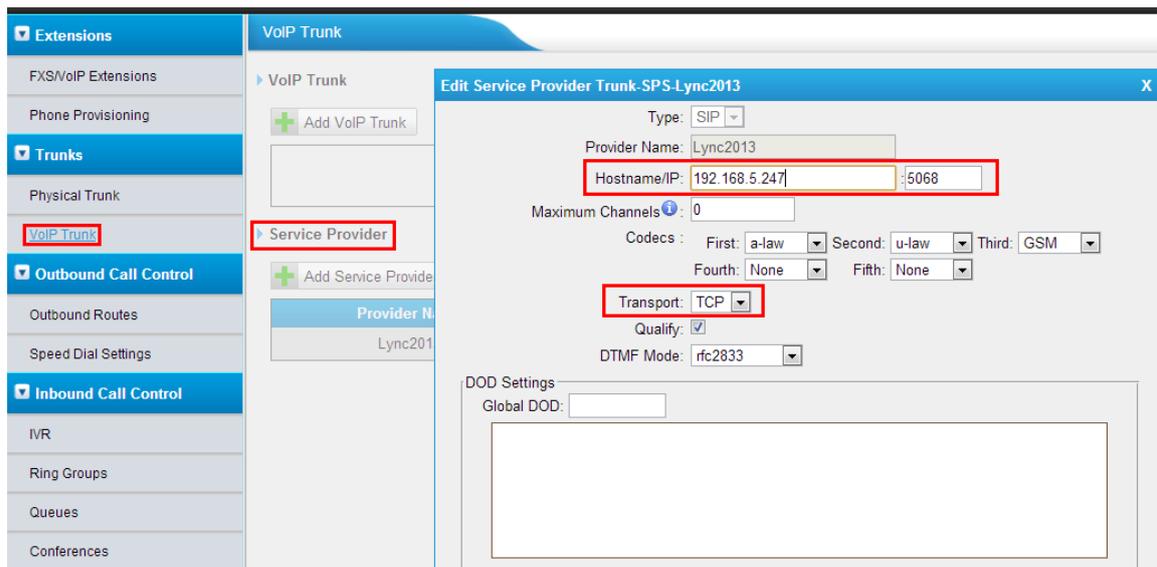
Figure 44

We can check the status of this trunk in "Line status"→"Trunk status" page.

Figure 45

Note: TCP protocol is disabled in MyPBX by default, you will need to enable it in "SIP settings" page in advance.

4.2 Internal communication between MyPBX and Lync Server

Create an outbound route in "PBX"→"Outbound Call Control"→"Outbound Route"
Dial pattern: 8XX
Strip: 0
Prepend these digits: +
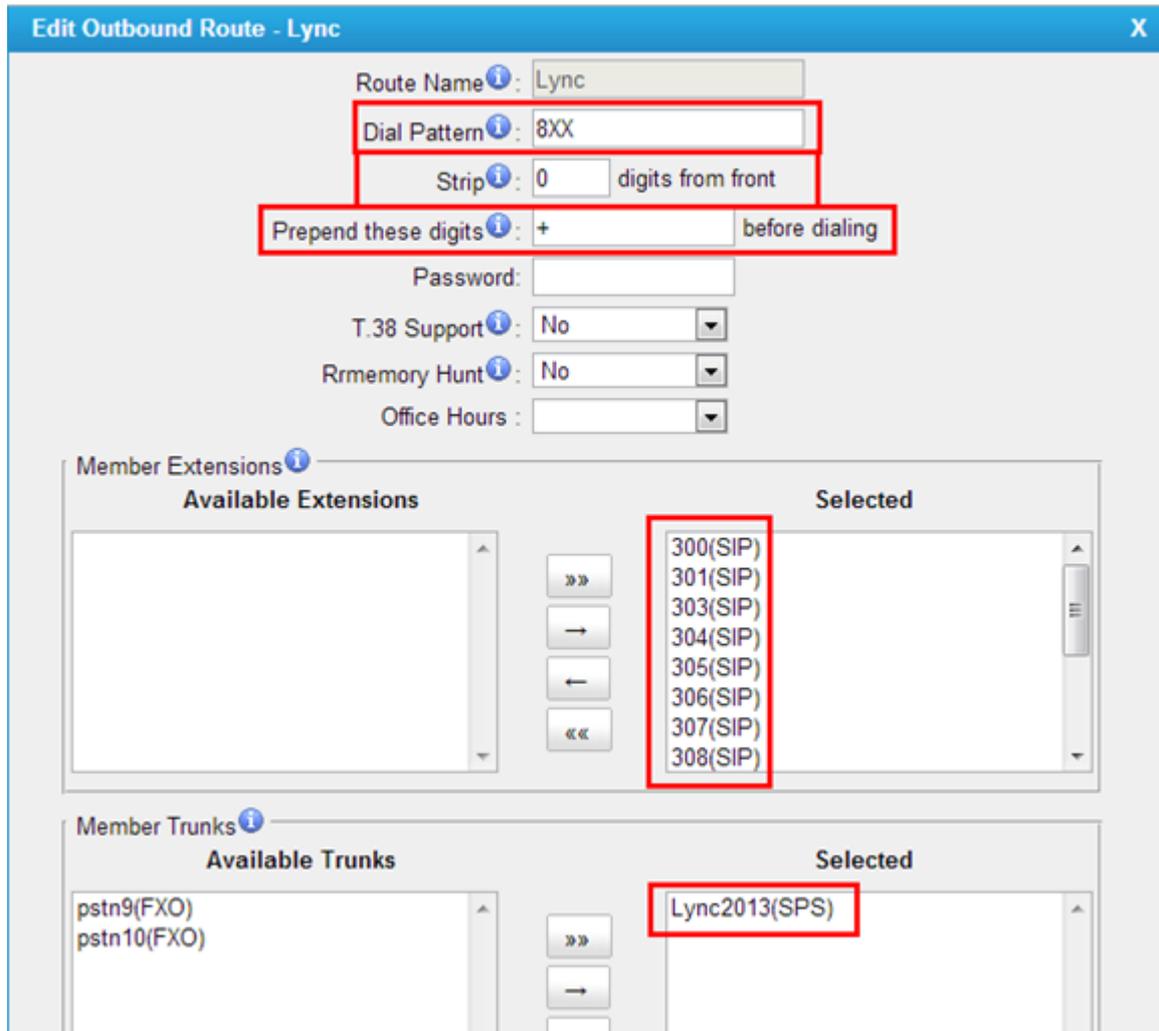
Figure 46

In this way, we can reach the extension in lync 2013 directly without dialing "+".
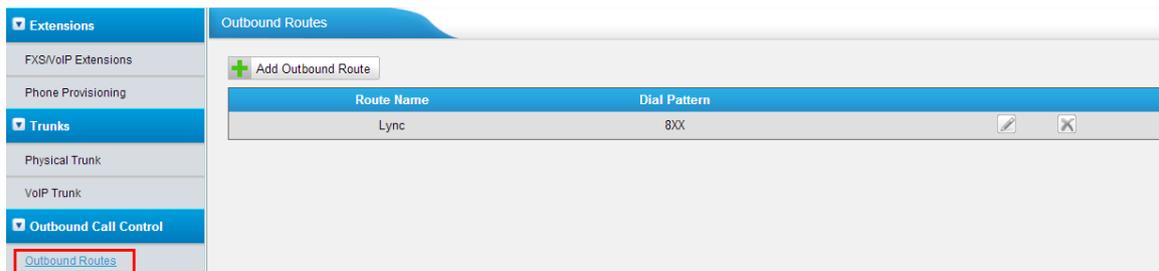
Figure 47

Here is a test call from MyPBX to Lync Server 2013.
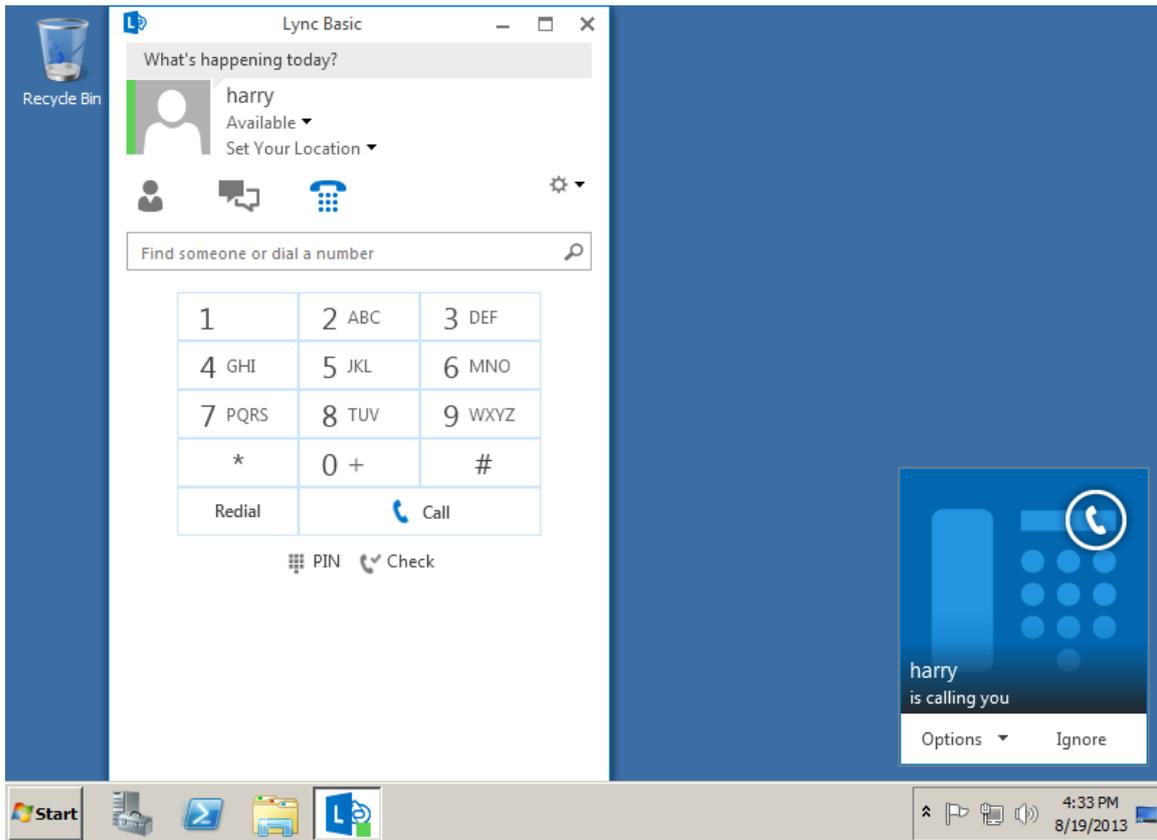
Figure 48

To reach extensions in MyPBX from Lync Server 2013,we need to create an inbound route.

Click "PBX"→"Inbound Call Control"→"Inbound Routes".

DID number: +300-+350, it's the extension range of MyPBX.

Extension: 300-350

Choose that trunk, then save it and apply the changes on web to take effect.
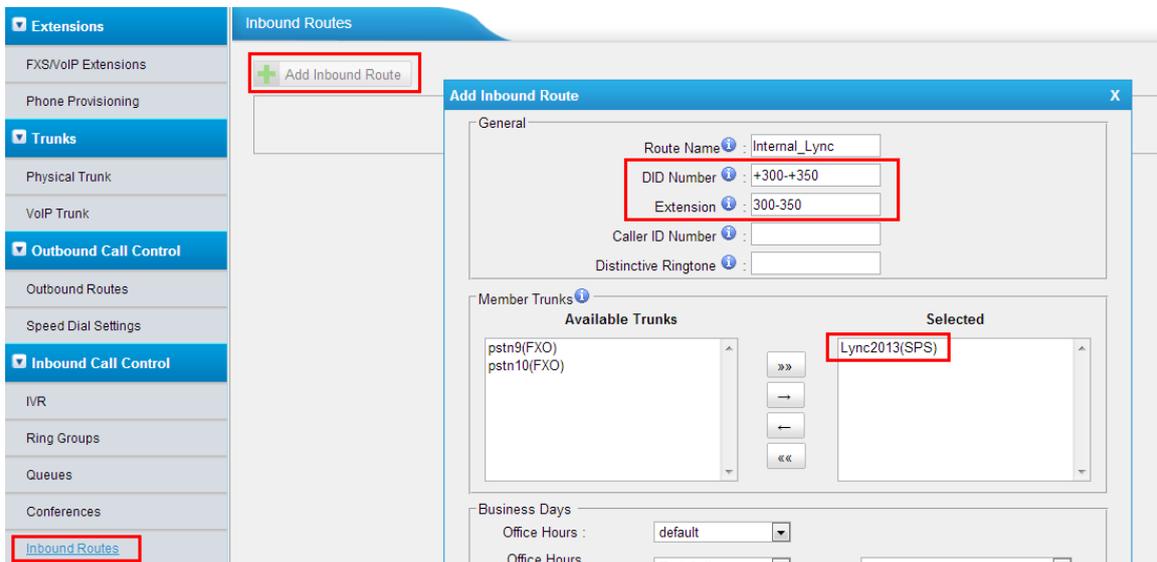
Figure 49

When done, we can make test calls from Lync Server 2013 to MyPBX's extension directly.
Here is an example at my side:

Tel:+800 (Lync Server 2013) dials extension 301 (MyPBX's extension)
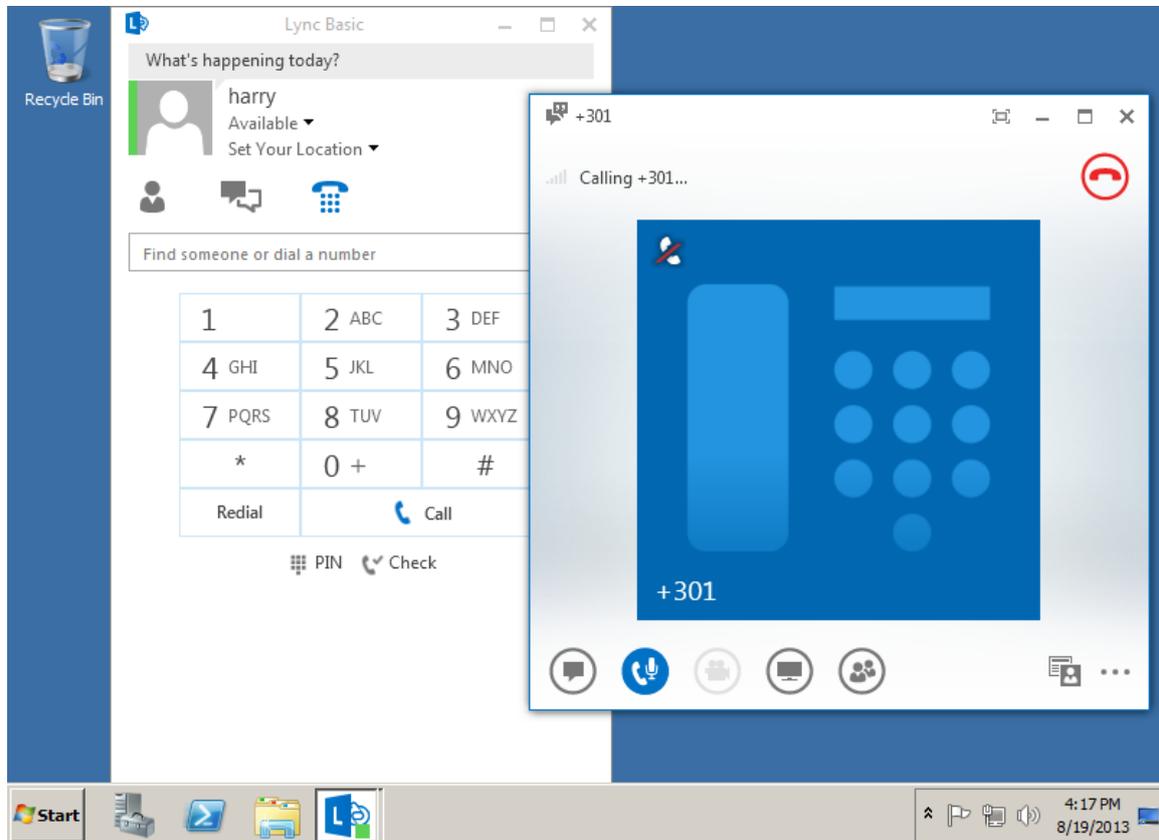
Figure 50
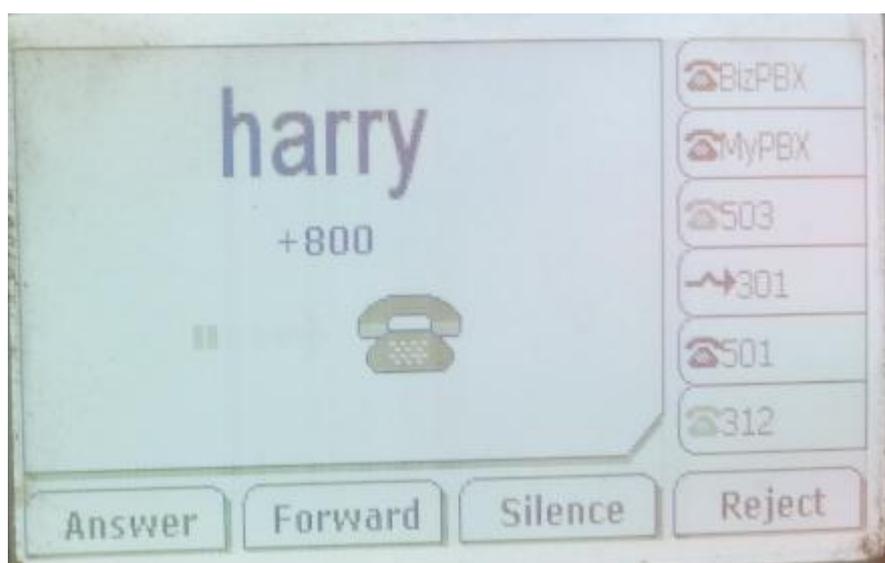
Figure 51

4.3 Dial external number in Lync Server 2013 through MyPBX

Multiple trunks are supported in MyPBX, like PSTN/BRI/GSM and E1, we can route the calls from Lync Server 2013 to these trunks via MyPBX.

Here is an example:
Customer wants to dial 9+numbers on Lync Server's side through MyPBX, the trunk is PSTN.

Step1. Create an outbound route on MyPBX.
Dial pattern: "+9.", don't miss the dot.
Strip: 2, it means delete "+9"
Choose the extensions to the right side, and the available trunks (Two PSTN here).
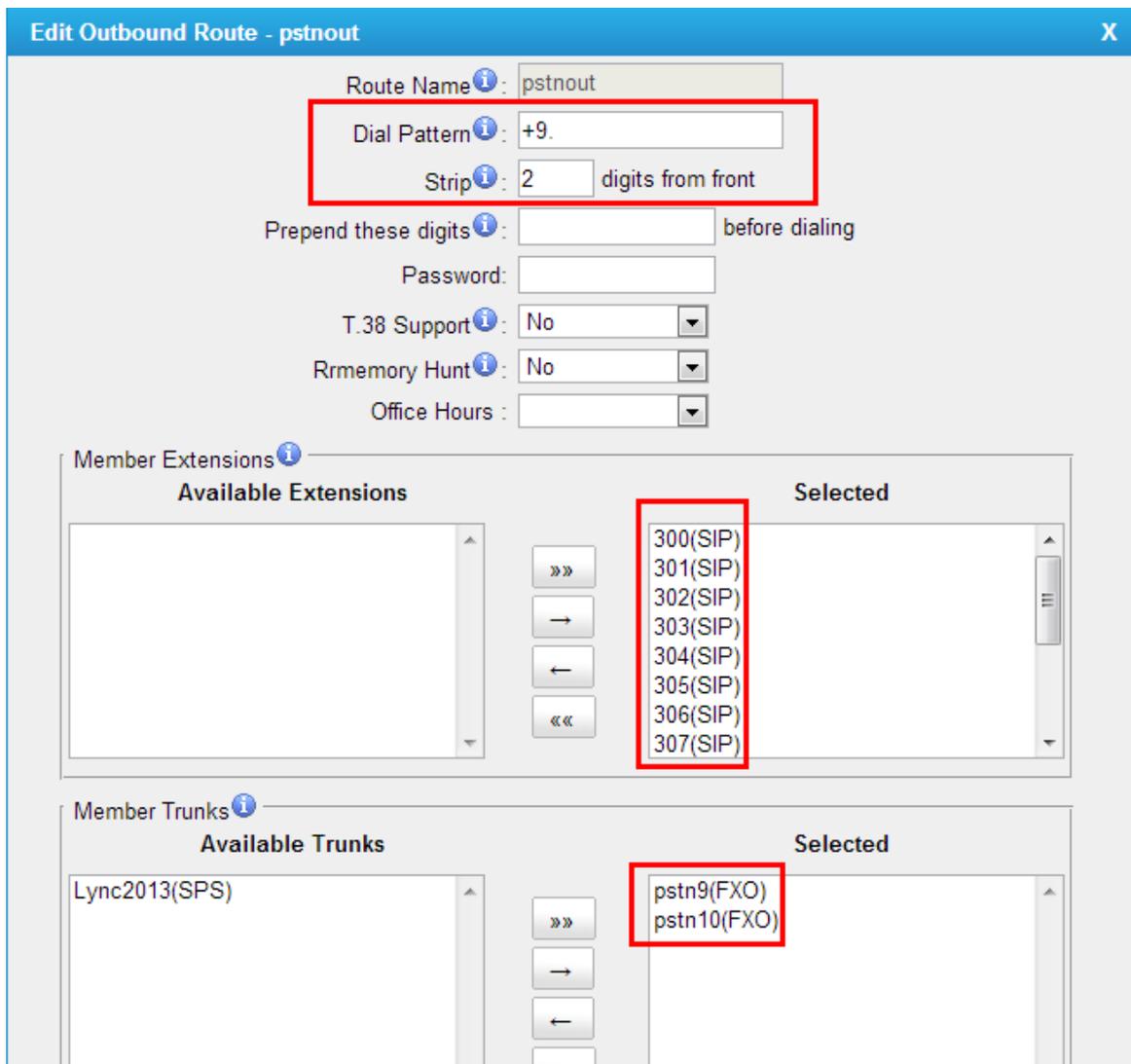
Figure 52

Step2. Create an inbound route for that "Service Provider" trunk, choose the above configured outbound route as the destination.

DID number: "+.", don't forget the dot here.

Figure 53

In this way, all the external numbers starting with "9+" numbers will be routed to the PSTN trunk.

If you want to dial those number directly without "9", just change the Dial pattern to "+." , Strip: 1 , then the prefix 9 is not needed.

4.4 Dial into Lync Server 2013 through MyPBX's PSTN trunk

It's supported to route the call from MyPBX to Lync Server 2013.
In this example, the user can dial into MyPBX first to get the second dial tone, then dial Lync's extension number directly.

Step1. Create DISA first, and choose the outbound route we created above.
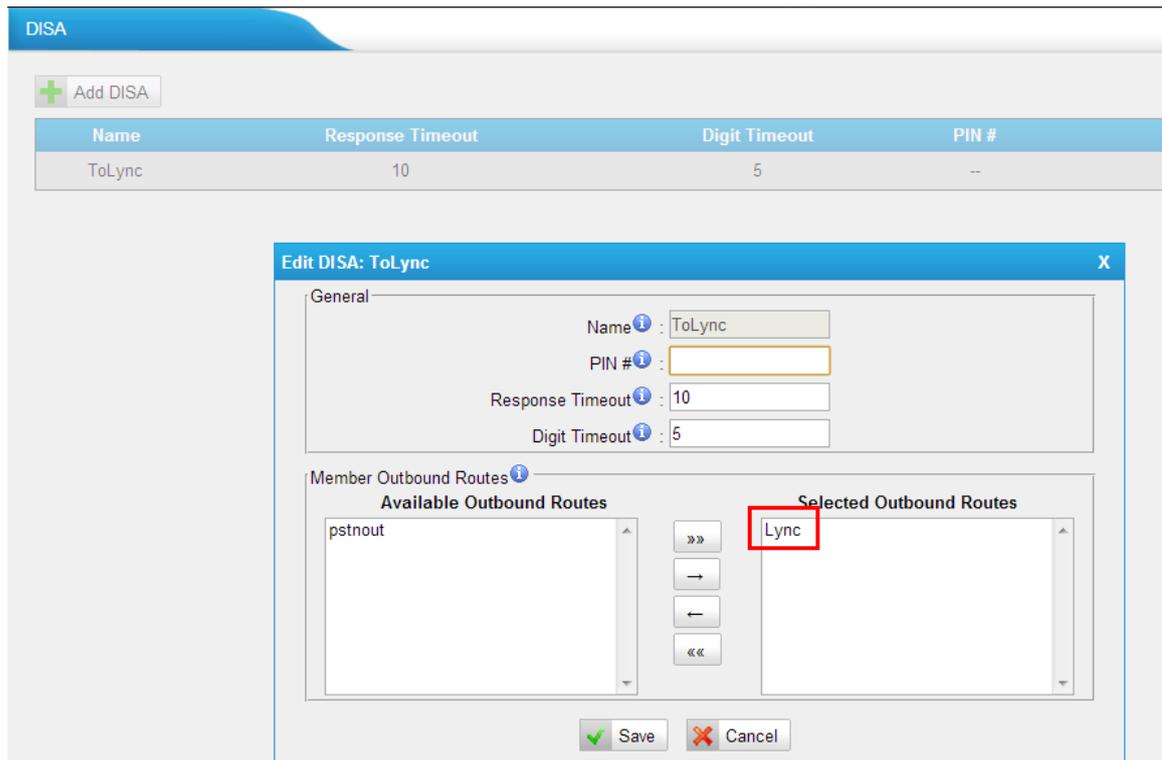
Figure 54

Step2. Cteate an inbound route for the PSTN trunks, choose DISA as the destination.
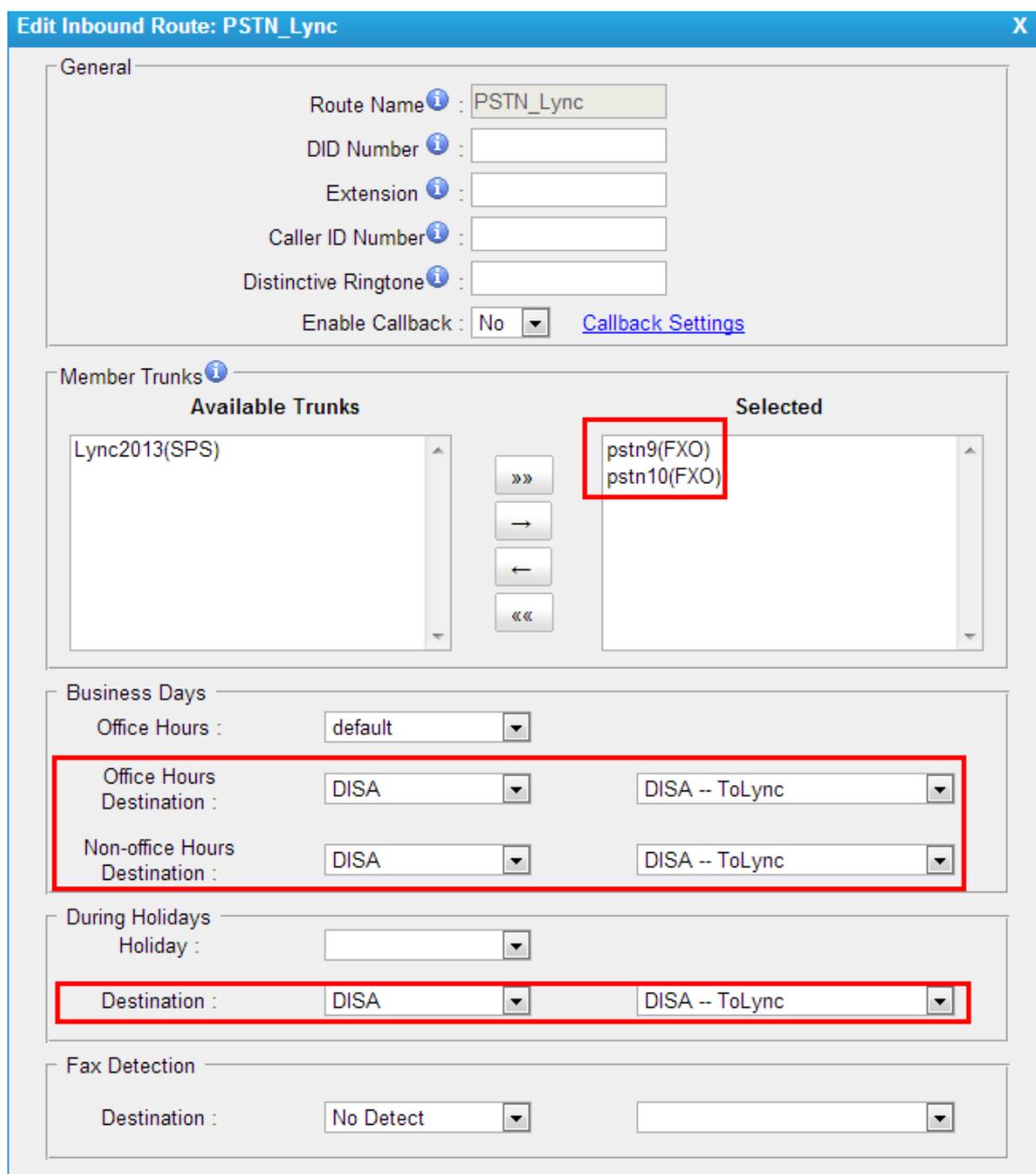
Figure 55

Save and apply the changes, you can dial into lync server 2013 now.

<The end>