

How to extend Lync 2013 to MyPBX

Version: 1.0

Yeastar Technology Co., Ltd.



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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:

Kunc Server 2013, Topology Builder			
<u>File Action H</u> elp			
Lync Server MyPBX Dup Lync Server 2010	SIP domain		
 Lync Server 2013 Standard Edition Front End Servers Enterprise Edition Front End pools Director pools Mediation pools Persistent Chat pools 	Default SIP domain: Additional supported SIP domains:	lync.yeastar.com Not configured	
Edge pools Trusted application servers	Simple URLs		
	Phone access URLs:	Active Simple URL	J
	Meeting URLs:	Active Simple URL	SIP domain
	Administrative access URL:	https://meet.lync.yeastar.com Not configured	lync.yeastar.com
	Central Management Serve	er	
	Central Management Server:	Active Front End	Site MyPBX
	٩		
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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.



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Figure 3 Click "Next", keep the default "Enable IPv4", click "Next".

Lync Server 201	3, Topology Builder	- D ×
File Action Help		
E Lync Server	Define New IP/PSTN Gateway	
E MyPBA	Define the ID address	
🖃 🧰 Lyn	The fine the try address	
	Enable IPv4	
L ± 💆	Use all configured IP addresses.	
	Limit service usage to selected IP addresses. DETINIT: addresses.	
🖂 🖂 Sha	r31M <u>1</u> r duulcss,	
± 🚞		
± 💻	C Enable IPv <u>6</u>	
	Use all configured IP addresses.	
🔁 Bra	PSTN IP address:	
	,	
	Help Back Next Cancel	
🎦 Start	🛛 🚔 🔣 🥰 🗠 .	11:46 PM 8/18/2013

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

by Lync Server 20	13, Topology Builder		
File Action Help			
🖃 🛃 Lync Server	Define New IP/PSTN Gateway	×	
🖃 🛄 MyPBX			
+ Lyn	Sefine the root trunk		
±			
	Trunk name: *		
	192.168.4.142		
	Listening port for IP/PSTN gateway: *		
	5060		
E She			
±	SIP T <u>r</u> ansport Protocol:		
	TCP		
	Associated Mediation Server:		
🚞 Bra	lync.veastar.com MvPBX		
	17.07		
	Associated Mediation Server port: *		
	5068		
	Help Back Finish	Cancel	
- I im			11:46 PM
Start 🔄		🦚 🚛 🐢	8/18/2013 💻

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.

by Lync Server 20)13, Topology Builder				
File Action Help					
🖃 🛃 Lync Server	Publish Topology	×			
	Publish the topology				
	 In order for Lync Server 2013 to correctly route messages in your deployment, you must publish your Before you publish the topology, ensure that the following tasks have been completed: A validation check on the root node did not return any errors. A file share has been created for all file stores that you have configured in this topology. All simple URLs have been defined. 	topology.			
	 An simple okts have been defined. For Enterprise Edition Front End pools and Persistent Chat pools and for Monitoring Servers and Archiving Servers: All SQL Server stores are installed and accessible remotely, and firewall exceptions for remote access to SQL Server are configured. For a single Standard Edition server, the "Prepare first Standard Edition server" task was completed. You are currently logged on as a SQL Server administrator (for example, as a member of the SQL sysadmin role). If you are removing a Front End pool, all users, common area phones, analog devices, application contact 				
black objects, and conference directories have been removed from the pool.					
	Help Back Next	Cancel			
🔊 Start 🛛 🏭		P Խ 🕲 🍫	11:50 PM 8/18/2013		

Figure 7



Figure 8



Lync Server 201	3, Topology Builder	_ 🗆 🗙
File Action Help	Publish Topology Publishing wizard complete Your topology was successfully published.	1
	Step Status ✓ Publishing topology Success ✓ Downloading topology Success ✓ Downloading global simple URL settings Success ✓ Updating role-based access control (RBAC) roles Success ✓ Enabling topology Success	
	To close the wizard, click Finish. Help Back Einish Cancel	
🖉 Start		11:50 PM 8/18/2013

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.

🌄 Mie	🐺 Microsoft Lync Server 2013 Control Panel						
Lyı	nc Server 2013						
	Home						
33	Users						
×	Topology	User Information	Resources				
Ģ	IM and Presence	Welcome, Administrator	Getting Started				
7	Persistent Chat	View your roles	First Run Checklist Using Control Panel				
۲	Voice Routing	Top Actions	Microsoft Lync Server 2013				
S	Voice Features	Enable users for Lync Server	Using Office 365				
23	Response Groups	Edit or more users	Getting Help Downloadable Documentation				
Ð	Conferencing	View Monitoring reports	Online Documentation on Tech				
	Clients		Lync Server Management Shell Lync Server Resource Kit Tools				
露	Federation and External Access		Community				
20	Monitoring and Archiving		Blogs				
•	Security						
<u> </u>			12:1E AM				
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Figure 10



Click "Users" to enable the account and assign a number to the user, in this example: <u>User: harry</u>

The number is: +800

Click "Enable Users" to start:

W	icrosoft Lync Server 201	Control Panel					
Ly	nc Server 2013						
	▲ Home	User Search					
33 14 15	Users Topology IM and Presence	• Search LDAP search Search for users by typing a user	's name or clicking Add	filter	Find 😽	🔒 + Add	
· 🗗	Persistent Chat Voice Routing	🕵 Enable users 🔻 🦯 Ed	it ▼ Action ▼			Maximu	
8 23	Voice Features Response Groups	Display name	Enabled	SIP address	Registra	ır pool	
	Clients Federation and External Access	IMPO doe	Select the type of search that you want to perform. IMPORTANT: Search returns users already enabled for Lync Se does not include users enabled for previous versions. To see				
	Monitoring and Archiving Security	user	s, select Office C	ommunications S query.	erver users in th	ie search fi	
, Aysta	art 👪 ᠌				P Խ 🖞 🌵	12:17 AM 8/19/2013	

Figure 11

Click "Enable Users".



🌄 Mi	crosoft Lync Server 2013	Control Panel		_ 🗆 ×
Lv	nc Server 2013			
	Home	User Search		
22	Users			
×	Topology	New Lync Server User		
Ð	IM and Presence	* Enable X Cancel		
2	Persistent Chat	Users:		
۲	Voice Routing		Add	
C	Voice Features		Remove	
23	Response Groups			
Ð	Conferencing	Assign users to a pool: *		
6	Clients	Generate user's SIP URI:]	
1	Federation and	• Use user's email address		
	External Access	Use the user principal name (UPN)		
	Monitoring and Archiving	<pre></pre> <pre><</pre>		
4	Security			
	V			
Ø Sta	rt 🛃 ⊿ [P Խ 🔁 🍁 🐉	::17 AM 19/2013 💻

Figure 12

Click "Add". _ 🗆 × 🌄 Microsoft Lync Server 2013 Control Panel Lync Server 2013 2 Select from Active Directory Search O LDAP search Search for users by typing a user's name or clicking Add filter + Add filter Find ≶ Search results: 5 Maximum users to display: 200 🚔 User principal name (UPN) Display name Email Firs Name Administrator Guest harry@lync.yeastar.com harry@yeastar.com harry harry jason jason jason@lync.yeastar.com jason@yeastar.com krbtgt 4 ОК Cancel Security P Խ 🐑 🍫 12:18 AM 💻 1 **F**9 2 $\mathbf{\Sigma}$ 灯 Start



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

Lync Server 2013		Administrator Sign ou
,	5.0.83	08.0 Privacy statemen
🟠 Home	User Search	
🚜 Users		
Topology	New Lync Server User	
Description IM and Presence	* Enable × Cancel	
Persistent Chat	harry Remove	
😍 Voice Routing		
🌜 Voice Features	Assign users to a pool: *	
🔏 Response Groups	lync.yeastar.com	
Description Conferencing	Generate user's SIP URI:	
Clients	Use user's email address Use the user principal name (UPN)	
Federation and	Use the following format:	
External Access	<firstname>.<lastname> @</lastname></firstname>	
Monitoring	O Use the following format:	
and Archiving	<samaccountname> @</samaccountname>	
Security	○ Specify a SIP URI:	
Network Configuration	©	
	Telephony: Enterprise Voice	
	Line URI:	
	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.



🌄 Mi	crosoft Lync Server 20	13 Contro	l Panel						_ 8 ×
Ly	nc Server 2013								
	▲ Home	U	ser Search						
22	Users		• Search O ID	AP search					
N	Topology		Search for users by ty	ping a user's name o	r clicking Add	filter	Find		🚽 + Add fil
9	Persistent Chat						Se	arch results:	1 Maximum
C	Voice Routing		Enable users	🖉 🖉 Edit 🔻	Action 🔻				
S	Voice Features		Display name		Enabled	SIP address	ar.com	Registrar	pool
23	Response Groups							,,	
	Conferencing								
鶝	Federation and External Access								
	Monitoring and Archiving								
A	Security								
R St	art 🛃 🗾			O				, 🖢 🌼	12:37 AM 8/19/2013 ⋿

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

Recycle Bin	Lync Basic – – ×
	Sign in ☆ ▼ Sign-in address:
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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.



🌄 Mi	crosoft Lync Server 2013 (Control Panel						
	nc Sonvor 2013							
Ц	The Server 2013							
	Home	Dial Plan	Voice Policy	Route	PSTN Usage	Trunk Configuration	Test Voice Routing	
33	Users	Create v	pice routing tes	t case info	rmation			
24	Topology							
Ģ	IM and Presence					م		
7	Persistent Chat	- New	▼ / Edit 1	Actio	on 🔻 Comm	it 🔻		
٢	Voice Routing	Na	me 🔺 Scop	e Sta	te Nor	malization rules D	escription	
S	Voice Features	C	Global Glob	al Co	mmitted 1			
23	Response Groups					•		
Ð	Conferencing							
	Clients							
is.	Federation and External Access							
	Monitoring and Archiving							
1	Security							
	··· · ·							
A St	art 🛃 🔎		1				P Խ 🟗 🎕	12:38 AM 8/19/2013

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

🐯 Mi	crosoft Lync Server 2013 Co	ntrol Panel	
Lyı	nc Server 2013		
	Home	Dial Plan Voice Policy Route PSTN Usage Trunk Configuration Test Voice Routing	
33	Users	Create voice routing test case information	
×	Topology		
Ę	IM and Presence	Edit Dial Plan - Global	
2	Persistent Chat	✓ OK X Cancel	
ę	Voice Routing	· · · · · · · · · · · · · · · · · · ·	
S	Voice Features	External access prefix:	
23	Response Groups	Associated Normalization Rules	
Ð	Conferencing	💠 New 🖹 Copy 📋 Paste 🔚 Select 🦯 Show details Remove 🦿	•
E.	Clients	Normalization rule State Pattern to match	Translation patt
諧	Federation and External Access	Keep All Committed ^(\d*)\$	\$1
	Monitoring and Archiving		
-	Security		
	··· •	Monday	/, August 19, 2013
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Modify the length to "Any", add "+" in field "Digits to add", then click "Ok" to save it

Home	Dial Plan	Voice Policy	Route	PSTN Usage	Trunk Configuration	Test Voice Routing	
Users	Create vo	ice routing test	case info	rmation			
Topology							
IM and Presence	Edit D	ial Plan 🕨 Edit	Normali	zation Rule - I	Keep All		
Persistent Chat	1	OK 🗙 Cano	el				
Voice Routing							
Voice Features	Le	ngth:					
Response Groups	A	ny		• 0		÷	
Conferencing	Di	gits to remove:					
Clients	Di	nits to add:					
Federation and	+	gits to add.					
External Access	P	attern to match	*				
Monitoring and Archiving		^(\d*)\$					
Security		••• •					

Figure 20

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

	nc Server 2013									
Lyı	Home		ial Plan	Voice Policy	Route	PSTN Usage	Trunk Configur	ation	Test Voice Routing	
33	Users		Create v	oice routing test	case info	rmation	1			
×	Topology									
Ģ	IM and Presence		Edit I	Dial Plan - Glob	al					
7	Persistent Chat		-	OK 🗙 Can	el 🛛					
ę	Voice Routing			Normalizatio	n rule	Std	lle server itted	Patter	n to match 4	I I diisiduu
C	Voice Features	11	_	Keep All		# /	Uncommitted	^(\ a ^)	\$	+\$1
22	Response Groups	4								
Ŗ	Conferencing									
6	Clients		•							
	Federation and External Access		Dia 12	led number to te	st:				Go 🥐	
	Monitoring and Archiving			Translation rule Rule to match:	+123 Keep All					
	Security									
A Sta	art 🏭 🗾								P 🗞 🖽	12:41 AM 8/19/2013



Edit the "Voice Policy"→"Global".

🌄 Mie	crosoft Lync Server 2013	Control Panel	
Lyı	nc Server 2013		
	A Home	Dial Plan Voice Policy Route PSTN Usage Trunk Configuration Test Voice Routing	
33	Users	Create voice routing test case information	
M	Topology		
₽	IM and Presence		
2	Persistent Chat	♣ New ▼	
Ś	Voice Routing	Name A Scope State PSTN usage Description	
C	Voice Features	💮 Global Global Committed	
23	Response Groups		
Ð	Conferencing		
e	Clients		
1	Federation and External Access		
	Monitoring and Archiving		
1	Security		
	··· · · ·		
Ay Sta	art 🍇 🗾 🛛		2:42 AM /19/2013 ⋿

Figure 22

Click "Select" and choose the Local into "Associated PSTN Usages".

🌄 Mie	crosoft Lync Server 201	3 Contro	ol Pane	9						
Lyı	nc Server 2013									
	▲ Home		Dial Pla	n Voic	e Policy	Route	PSTN Usage	Trunk Configuration	Test Voice Routing	
33	Users		Create	voice ro	uting test	case info	ormation			
×	Topology									
Ģ	IM and Presence		Edit	: Voice P	olicy - G	lobal				
7	Persistent Chat			/ ок	X Canc	el				
¢	Voice Routing			En:	able simuli	taneous	inging of phon	<u>ــ</u>		aracing
S	Voice Features				DCTN U-	uncous	inging of phon			
22	Response Groups	1		- Now	PSTN Usa	iges	A Show datails	Domouo 🌰		
Ð	Conferencing			PSTN us	age record		Associat	ted routes		
The second se	Clients				-					
iii ii	Federation and External Access									
	Monitoring and Archiving									
-	Security									
	··· . ▼					_				
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🌄 Mi	crosoft Lync	Server 2013 Control Panel	
Ly	nc Serve	er 2013	
		Select PSTN Usage Record	
	Home		
33	Users		
	I opology	PSTN usage record name Associated routes Associated voice policies	
9	Persistent		
e	Voice Rot	Local	uuung
C	Voice Fea		
22	Response		
Ð	Conferen		
	Clients		
	Federatio		
	Monitorir	OK Cancel	
	and Archi		
•	Security		
			12:42 AM
27St	art 🎂		8/19/2013 =
		Figure 24	
🐯 Mi	crosoft Lync	Server 2013 Control Panel	
Ly	nc Serve	er 2013	
-			
	Home	Dial Plan Voice Policy Route PSTN Usage Trunk Configuration Test Voice Routing	
33	Users	Create voice routing test case information	
×	Topology		
Ģ	IM and Pro	Edit Voice Policy - Global	
7	Persistent	Chat OK Cancel	unung
٢	Voice Rou	ting ✓ Enable simultaneous ringing of phones	
6	Voice Feat	Associated PSTN Usages	
23	Response	Groups Vew Select / Show details Remove 👚 🦊	
Ð	Conference	PSTN usage record Associated routes	
	Clients	Local	
Ē\$	Federation External A	ccess	
	Monitorin and Archiv	g ving	
4	Security		
	••••••		
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Click "OK" to save it. Edit the "Route" page.

🏹 Mio	crosoft Lync Server 201	3 Control	l Panel							
Lyı	nc Server 2013									
	▲ Home	Di	ial Plan	Voice Policy	Route	PSTN Usage	Trunk C	onfiguration	Test Voice Routing	
23	Users	C	Create vo	ice routing te	est case inform	nation				
×	Topology									
Ģ	IM and Presence							م		
7	Persistent Chat		🗣 New	🧪 Edit 🔻	1 Move	up 🕹 Mov	e down	Action ▼	Commit 🔻	
Ś	Voice Routing		Nar	me	-	State		PSTN usage		Pattern to mate
C	Voice Features		Loc	alRoute		Committe	d			^(\+1[0-9]{10})\$
23	Response Groups	4								
Ð	Conferencing									
e,	Clients									
ī.	Federation and External Access									
	Monitoring and Archiving									
A	Security									
	··· •									
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Click "LocalRoute" to start editing.



🐯 Mi	crosoft Lync Server 201	3 Control	Panel						
Ly	nc Server 2013								
	Home	Di	al Plan V	/oice Policy	Route	PSTN Usage	Trunk Configuration	Test Voice Routing	
33	Users	С	reate voice	routing test	case inform	nation			
×	Topology								
Ģ	IM and Presence		Edit Voic	e Route - Lo	ocalRoute				
2	Persistent Chat		🖌 ок	X Cance	el				
¢	Voice Routing		+1[0	-9]{10}				Exceptions	
C	Voice Features							Remove	
23	Response Groups	4							
Ð	Conferencing		Mate	ch this natter	n• *				
6	Clients		^(\+	+1[0-9]{10})\$					
諧	Federation and External Access			Edit	Reset	?			
	Monitoring and Archiving		Sup	press caller II	D				
-	Security								
	···· ¥								
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The default value is: $(+1[0-9]{10})$ Click Edit to modify the default pattern to $(+d^*)$



🐯 Microsoft Lync Server 2013 Cor	ntrol Panel	_ 8 ×
Lvnc Server 2013		
-,		
A Home	Dial Plan Voice Policy Route PSTN Usage Trunk Configuration Test Voice Routing	
33 Users	Create voice routing test case information	
Topology		
IM and Presence	Edit Voice Route - LocalRoute	
Persistent Chat	Type a Regular Expression	
😢 Voice Routing	Type a regular expression: *	
📞 Voice Features	Remove	
😤 Response Groups 🥤	OK Cancel	
💀 Conferencing	OK Cancer	
Clients	^(\+1[0-9](10))\$	
Federation and	Edit Reset	
- Monitoring		
and Archiving	Suppress caller ID	
🔒 Security		
•	<u></u>	
🍠 Start 🐰 ⊿ 📄	; 🔣 🐯 💽	2:47 AM 19/2013 🎫

Click $\ensuremath{``}\ensuremath{\mathsf{OK}''}$ to save it, and you will see the modified patten as below:

Lyı	nc Server 2013							
\$	▲ Home	Dia	l Plan	Voice Policy Ro	ute PSTN Usage	Trunk Configuration	Test Voice Routing	
22	Users	Cr	eate vo	pice routing test case	e information			
×	Topology							
Ð	IM and Presence		Edit V	/oice Route - Loca	Route			
7	Persistent Chat		1	OK X Cancel				
2	Voice Routing		+	-d*			Exceptions	
5	Voice Features						Remove	
\$	Response Groups							
þ	Conferencing			Natch this nattern: *				
3	Clients			^(\+\d*)\$				
P.C.	Federation and External Access			Edit Res	et 🕐			
	Monitoring and Archiving			Suppress caller ID				
1	Security							
Sta	art 🔍 🔊 🛱							12:48 AM



Add the associated trunk:

🐯 Mi	icrosoft Lync Server 201	3 Control Panel	
Ly	nc Server 2013		
	▲ Home	Dial Plan Voice Policy Route PSTN Usage Trunk Configuration	Test Voice Routing
33	Users	Create voice routing test case information	
×	Topology		
Ģ	IM and Presence	Edit Voice Route - LocalRoute	
7	Persistent Chat	✓ OK X Cancel	
ও	Voice Routing	Associated trunks:	
S	Voice Features		Add
23	Response Groups		Remove
Ð	Conferencing		
-	Clients		
ß	Federation and External Access	Associated PSTN Usages	
	Monitoring and Archiving	PSTN usage record Associated voice policies	
-	Security		
	••••••••••••••••••••••••••••••••••••••		
Ay st	art 🕌 🗾		P Խ 🔁 🍫 12:49 AM 💻 8/19/2013
		Figure 30	

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



🐺 Microsoft Lync Server	2013 Control Panel	
Lync Server 20	13	
Lyne Server 20	Select Trunk	
🏠 Home		st Voice Routing
33 Users	٩	
Topology	Service Site	
IM and Presence	PstnGateway:192.168.4.142 MyPBX	
Persistent Chat		
🧐 Voice Routing		
& Voice Features		Add
😮 Response Group	s d	emove
💀 Conferencing		
Clients		
Federation and		
- Monitoring	OK Carrel	
and Archiving		
Security		
· · · · · · · · · · · · · · · · · · ·		
🔊 Start 🛃 🗾		Pr Խ 🐑 🎲 12:49 AM 📰
	Figure 31	, · · · .
🐺 Microsoft Lync Server	2013 Control Panel	
Lync Server 20	I3	
A Home	Dial Plan Voice Policy Route PSTN Usage Trunk Configuration	Fest Voice Routing
33 Users	Create voice routing test case information	
IM and Presence	Edit Voice Route - LocalRoute	
Persistent Chat	✓ OK X Cancel	
Voice Routing		
S Voice Features	Associated trunks:	Add
Response Group	PstnGateway:192.168.4.142	Remove
Conferencing		kemove
Clients		
Federation and	Associated PSTN Usages	
External Access	Select Remove 🎓 🦆	
Monitoring and Archiving	PSTN usage record Associated voice policies	
Security		
¥		
🍂 Start		P 🐌 🖺 🍫 12:49 AM 💻 8/19/2013



Select the assoiciated PSTN Usages:

🐯 Mi	icrosoft Lync Server 201	13 Control Panel	
Ly	nc Server 2013		
	Home	Dial Plan Voice Policy Route PSTN Usage Trunk Configuration Test Voice Routing	
33	Users	Create voice routing test case information	
×	Topology		
Ģ	IM and Presence	Edit Voice Route - LocalRoute	
9	Persistent Chat	✓ OK × Cancel	
Ę	Voice Routing	Associated PSTN Usages	
C	Voice Features	Select Remove	
23	Response Groups	PSTN usage record Associated voice policies	
Ð	Conferencing		
e.	Clients		
1	Federation and External Access		
	Monitoring and Archiving	Translated number to test:	
Ω	Security		
	••••••		
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		Figure 33	

Choose "Local" and "OK" to save it.



W ie	crosoft Lync	Server 2013 Control Panel	_ B ×
Lv	nc Serve	or 2013	
Lyi		Select PSTN Usage Record	0 ==
	Home		
33	Users	٩	
N	Topology	PSTN usage record name Associated routes Associated voice r	policies
Ð	IM and Pr	Internal	
P	Persistent	Local Global	
C	Voice Rou	Long Distance	
S	Voice Fea		
23	Response		
Ŗ	Conferen		
T	Clients		
許	Federatio		
	Monitorin	OK	Cancel
	and Archi		
-	Security		
_	··· ··		
a sta	art 👆		P Խ 🐑 🍁 12:50 AM 💻
	_	Figure 34	,
🐯 Mie	crosoft Lync	Server 2013 Control Panel	
Iv	nc Serve	or 2013	
Суг			
	Home	Dial Plan Voice Policy Route PSTN Usage Trunk Configuration 1	fest Voice Routing
33	Users	Create voice routing test case information	
м	Topology		
Ģ	IM and Pr	esence Edit Voice Route - LocalRoute	
7	Persistent	Chat V K X Cancel	
Q	Voice Rou	ting Associated PSTN Usages	
S	Voice Fea	tures Select Remove	
23	Response	Groups PSTN usage record Associated voice policies	
Ŗ	Conference	ing Giobai	
G	Clients		
論	Federation External A	n and ccess	
	Monitorin and Archi	g Translated number to test:	
-	Security		
	··· ÷		
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Click the "PSTN Usage", make sure the Routers is "LocalRoute", Policies is "Global".

🌄 Mie	crosoft Lync Server 201	3 Control Pane						
Lyı	nc Server 2013							
	A Home	Dial Plar	Voice Policy	Route	PSTN Usage	Trunk Configuration	Test Voice Routing	
33	Users	Create	voice routing tes	t case info	rmation			
24	Topology							
Ģ	IM and Presence					J	ο	
7	Persistent Chat	Ed	it v Action v	Com	mit 🔻			
Ç	Voice Routing		lame		State	Routes	Policies	
C	Voice Features	I	nternal		Committe	ł		
23	Response Groups	1	ocal		Committe	d LocalRoute	Global	
Ŗ	Conferencing	1	ong Distance		Committe	ł		
Ē	Clients							
	Federation and External Access							
	Monitoring and Archiving							
9	Security							
	•••••						_	
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				Figu	ire 36			

Edit the "Trunk Configuration" page.



🌄 Mie	crosoft Lync Server 2013	Control Pane	I						_ B ×
Ly	nc Server 2013						_		
	▲ Home	Dial Plan	Voice Policy	Route	PSTN Usage	Trunk Confi	guration	Test Voice Routing	
23	Users	Create	voice routing test	case info	rmation				
×	Topology								
Ģ	IM and Presence						م		
2	Persistent Chat	-h Nev	v 🔻 🧷 Edit 🖲	Activ	n 🔻 Comm	it 💌			
ও	Voice Routing		lame 🔺 Scop	e Sta	te Mee	dia bypass	PSTN usag	je	Calling numl
S	Voice Features		🛃 Global 🛛 Globa	al Cor	nmitted				0
22	Response Groups	4							
Ð	Conferencing								
e	Clients								
B	Federation and External Access								
	Monitoring and Archiving								
-	Security	•							
	··· · · · · · · · · · · · · · · · · ·								
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Click "Global" to start.

🌄 Mio	crosoft Lync Server 2013	Contro	Panel						
Lyı	nc Server 2013								
~	Home	D	ial Plan	Voice Policy	Route	PSTN Usage	Trunk Configuration	Test Voice Routing	
33	Users	0	Create vo	ice routing test	case info	rmation			
x	Topology								
Ģ	IM and Presence		Edit T	runk Configura	ation - G	lobal			
7	Persistent Chat		1	OK X Cano	el				
٢	Voice Routing		~ /	ssociated PST	- N Usages				
S	Voice Features			Select	Remove	•			
23	Response Groups		1	PSTN usage re	cord	Asso	ciated routes		
R	Conferencing								
6	Clients								
i i	Federation and External Access								
	Monitoring and Archiving			Francistad num					
	Security			ransiateu numi	Jer to test	•			
	··· · · · · · · · · · · · · · · · · ·							•	
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Click "Select" to choose the associated PSTN usage for this trunk.

🌄 Mie	crosoft Lync	Server 2013 Control Panel		
Lv	nc Serve	r 2013		
-,	^	Select PSTN Usage Record		
	Home			
33	Users	٩		
M	Topology	PSTN usage record name Associated routes Associated voice pr	olicies	
Ģ	IM and Pr	Internal		
7	Persistent	Local LocalRoute Global		
ę	Voice Rot	Long Distance		
S	Voice Fea			
23	Response			
Ð	Conferen			
	Clients			
1	Federatio External A			
	Monitorir and Archi	ОК	Cancel	
	Security			
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Figure 39

🐯 Mie	crosoft Lync Server 2013 C	ontrol I	Panel						_ 8 ×
Lyı	nc Server 2013								
	Home	Dia	l Plan	Voice Policy	Route	PSTN Usage	Trunk Configuration	Test Voice Routing	
33	Users	Cr	eate voi	ce routing test	case info	rmation			
x	Topology								
Ģ	IM and Presence		Edit Tr	unk Configur	ation - G	lobal			
9	Persistent Chat		v	OK 🗙 Can	el				
ę	Voice Routing		~ A	ssociated PST	- N Usage				
C	Voice Features		ſ	Select	Demove				
22	Response Groups			PSTN usage re	ecord	Asso	ciated routes		
Ð	Conferencing			Local		Loc	alRoute		
6	Clients								
諧	Federation and External Access								
	Monitoring and Archiving			ranslated num	her to test	•			
	Security	L			Jer to test				
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Chose "Local" in this exaple, click "OK" to save it.



Click "OK".

🌄 Mie	crosoft Lync Server 2013	Control Panel							
Lyı	nc Server 2013								
	Home	Dial Plan	Voice Policy	Route	PSTN Usage	Trunk Configuratio	n Test Voice Ro	uting	
23	Users	Create vo	oice routing tes	t case info	ormation				
×	Topology								
Ģ	IM and Presence						Q		
2	Persistent Chat	4 New	▼ 🧪 Edit	 Acti 	on 🔻 Comm	iit ▼			
G	Voice Routing	Na	me 🔺 Scoj	oe Sta	te	Media bypass	PSTN usage		Calling
S	Voice Features	e	Global Glob	al 🔰	Uncommitted		Local		0
23	Response Groups								
Ŗ	Conferencing								
e	Clients								
鸖	Federation and External Access								
	Monitoring and Archiving								
-	Security								
	··· ↓ ▼		1				_		
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Figure 41

You can see the PSTN usage here, click "Commit" \rightarrow "Commit all" to take effect.

	Home	Dial Pla	in l'	Voice P	olicy	Route	PSTN	Usage	Trunk Configuration	T	est Voice Routing	
2	Users	Create	e voice	e routi	ng test ca	ase infor	mation					
	Topology											
	IM and Presence									9		
)	Persistent Chat	∲ Ne	w 🔻	1	Edit 🔻	Action	[Comm	it 🔻			
	Voice Routing		Name	•	Scope	State		Review	/ uncommitted chang	es	usage	Cal
	Voice Features		🕀 Gle	obal	Global	ا 🎝	Incomr	Comm	it all			0
	Response Groups							Cancel	selected changes			
	Conferencing							Cancel	all uncommitted cha	nges		
	Clients											
;	Federation and External Access											
]	Monitoring and Archiving											
	Security	•										 _



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

Lvnc	Server 2013							Administrator Sign out
		_		_				5.0.8308.0 Privacy statement
🟠 н	lome	Dial Plar	Voice Policy	Route	PSTN Usage	Trunk Configuration	Test Voice Routing	
33 U:	sers	Create	voice routing tes	t case info	rmation			~
М То	opology							
₽ IN	A and Presence	Nev	v Voice Routing	Test Case	2			
Pe	ersistent Chat		OK X Can	cel				0
🤓 V	oice Routing	N	ame: *				Test result:	
S Ve	oice Features	t	est				Passed	
🔏 Re	esponse Groups	3	aled number to te	est: *			Normalization rule:	
रू Co	onferencing	Di	al plan:				Normalized number:	
CI	lients		Slobal			•	+300	
Fe	ederation and	v	pice policy:				First PSTN usage:	
- Б	xternal Access		Slobal			•	Local	
ar M	Ionitoring nd Archiving	Ð	pected translatio	n: *			First route:	
	ocurity	Ŀ	300				LocalRoute	
)t	ecunty	Ð	pected PSTN usa	ge:				
😨 🕺	letwork	L	ocal			•		
	oninguration	Ð	pected route:					
		L	ocalRoute			•		
						Run		

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

Extensions	VolP Trunk
FXS/VoIP Extensions	VoIP Trunk Edit Service Provider Trunk-SPS-Lync2013
Phone Provisioning	Add VolP Trunk
Trunks	Provider Name: Lync2013
Physical Trunk	Hostname/IP: 192.168.5.247 :5068
Mal Tarak	Maximum Channels 0 : 0
	Codecs : First: a-law Second: u-law Third: GSM
Outbound Call Control	Add Service Provide
Outbound Routes	Provider N. Qualify:
Speed Dial Settings	Lync201 DTMF Mode: rfc2833
Inbound Call Control	DOD Settings
IVR	
Ring Groups	
Queues	
Conferences	

Figure 44

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

nk Status						
Status	Signal	Trunk Name	Туре	User Name	Port/Hostname/IP	Reachability
OK (2 ms)		Lync2013	SP-SIP		192.168.5.247	OK (2 ms)
Disconnected		pstn9	FXO		Port 9	
Disconnected		pstn10	FXO		Port 10	

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: +

dit Outbound Route - Lync			
Route	Name ⁽¹⁾ : Lync		
Dial F	Pattern 🛈 : 8XX		
	Strip	digits from front	
Prepend these	e digits 🛈 : +	before dialing	
	Password:		
T.38 S	Support 🛈 : No	•	
Rrmemor	ry Hunt 🛈 : No	•	
Offi	ce Hours :	•	
Member Extensions	3	Selecte	bd
		300(SIP) 301(SIP) 303(SIP) 304(SIP) 305(SIP) 306(SIP) 307(SIP) 308(SIP)	E
Member Trunks		Selecte	d
pstn9(FXO) pstn10(FXO)	^ >> →	Lync2013(SPS)	*

Figure 46

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

Outbound Routes		
+ Add Outbound Route		
Route Name	Dial Pattern	
Lync	8XX	
	Outbound Routes Add Outbound Route Route Name Lync	Route Name Dial Pattern Lync 8XX





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

	L>	Ly	nc Basic	_	□ ×
	What's	s happening to	oday?		
Recycle Bin	0	harry Available Set Your I	▼ Location ▼		
		-,	T		☆ -
	Find so	omeone or dial	a number		P
		1	2 авс	3 DEF	
		4 GHI	5 JKL	6 MNO	
		7 pqrs	8 TUV	9 wxyz	
		*	0 +	#	
		Redial	L C	Call	
		1	II PIN 🕻 Che	ck	
A Start	6	2			

Figure 48

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

Click "PBX" \rightarrow "Inbound Call Control" \rightarrow "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.

Extensions	Inbound Routes		
FXS/VoIP Extensions	Add Inbound Route		
Phone Provisioning		Add Inbound Route	X
Trunks		General Route Name 🛈 · Internal Lync	
Physical Trunk		DID Number 🛈 : +300-+350	
VolP Trunk		Extension 🚺 : 300-350	
Outbound Call Control		Caller ID Number 🛈 :	
Outbound Routes		Member Trunks	
Speed Dial Settings		Available Trunks Selected	
Inbound Call Control		pstn9(FXO) pstn10(FXO)	*
IVR			
Ring Groups			
Queues			Ŧ
Conferences		Business Days	
Inbound Routes		Office Hours : default	
		Office Hours	



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).

Edit Outbound Route - pstnout	x
Route Name	pstnout
Dial Pattern 🛈 :	+9.
Strip 🛈 :	2 digits from front
Prepend these digits	before dialing
Password:	
T.38 Support	No
Rrmemory Hunt 🛈 :	No
Office Hours :	
Member Extensions	Selected
	300(SIP) 301(SIP) 302(SIP) → 303(SIP) ← 304(SIP) ≪ 306(SIP) ≪ 306(SIP) ▼ 307(SIP)
Member Trunks	Selected
Lync2013(SPS)	<pre>>>> pstn9(FXO) pstn10(FXO) </pre>
F	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.
-----	---------	--------	-------	--------	-----	-----	-------

Edit Inboun	nd Route: L	ync_Out		Х
General	I			_
		Route Name 🛈 : Lync_Ou	ıt	
		DID Number 🛈 : 🕂		
		Extension 🛈 :		
		Caller ID Number 🛈 :		
		Distinctive Ringtone 0 :		
		Enable Callback : No 💌	Callback Settings	
⊢ ⊡Membe	r Trunks 🛈			
	Avai	lable Trunks	Selected	
pstn9(pstn10	(FXO) 0(FXO)		Lync2013(SPS)	
⊢ Busine	ss Davs —			
Offic	ce Hours :	default 💌		
Off	fice Hours stination :	Outbound Routes 💌	Route Name pstnout	
Non- De:	office Hours stination :	Outbound Routes 💌	Route Name pstnout	
During	Holidays -			_
н	loliday :	▼		
De	stination :	Outbound Routes 💌	Route Name pstnout	
Fax De	etection —			
De	stination :	No Detect 💌	•	

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.

		PIN #
10	5	
Edit DISA: ToLync General Response T Digit T Member Outbound Routes Available Outbound Rou pstnout	Name [®] : ToLync PIN # [®] : imeout [®] : 10 imeout [®] : 5 ites Selected C ↓ync ↓ ↓ ↓ ↓ ↓ ↓	A A A A A A A A A A A A A A A A A A A
	Response Timeout 10 Edit DISA: ToLync General General Digit T Member Outbound Routes Available Outbound Rout pstnout	Response Timeout Digit Timeout 10 5 Edit DISA: ToLync <pre></pre>

Figure 54

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



dit Inbound Route: PST	N_Lync			Х
General				
	Route Name 🛈 :	PSTN_Ly	1C	
	DID Number 🛈 :	:		
	Extension 🛈	:		
	Caller ID Number	:		
Di	stinctive Ringtone 🛈 :	:		
	Enable Callback	No 💌	Callback Settings	
r Member Trunks 00				
Availab	le Trunks		Selected	
Lync2013(SPS)	* *	»» → ≪≪	pstn9(FXO) pstn10(FXO)	▲ ▼
Business Days —				
Office Hours :	default	•		
Office Hours Destination :	DISA	-	DISA ToLync	•
Non-office Hours Destination :	DISA	-	DISA ToLync	•
During Holidays —				
Holiday :		-		
Destination :	DISA		DISA ToLync	•
Fax Detection				
Destination :	No Detect	-		•

Figure 55

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

<The end>