Connect 3CX to VoIP GSM Gateway via IP Trunk

1. Introduction

This application note shows how to connect 3CX to VoIP GSM Gateway using IP Trunk. In this guide, we tested VoIP GSM Gateway with 3CX Phone System. Target:

1. Make outbound calls from 3CX via the GSM trunks of VoIP GSM Gateway directly.

2. Receive calls through GSM trunks of VoIP GSM Gateway at 3CX.

Description

IP address of VoIP GSM Gateway: 192.168.6.55

IP address of 3CX: 192.168.6.88

2. Connect 3CX to VoIP GSM Gateway

2.1 Create a IP Trunk on VoIP GSM Gateway

Path:Gateway-> VoIP Configuration->IP Trunk.

MAXINCOM	VoIP GSM Gateway
 System Information Network Configuration Mobile Configuration Routing Configuration Manipulation Configuration VOIP Configuration SIPIAX Account SIPIAX Account SIPIAX Prants Yoll? Trunk Group Configuration System Configuration Reports System Tools 	IP Trunk Edit Index 30 Description 3. Type SIP Hostname/IP 4. 192.168.6.88 Port 4. DTMF Mode Ifc2833 Qualify Ves Allowed Audio Codecs ulaw,alaw,gsm

Description:192.168.6.88

Hostname/IP:192.168.6.88

After saving and applying the changes, you will see the trunk is "OK" in "Status".

Path:System Information->SIP/IAX Information->Status

MAXINCOM	VolP GSM Gatewa	ny ny						
- System Information 1.		SIP Information						
System Information		Status	Trunk Type	Name	SIP/IAX	Transport	User Name	Hostname/IP Address
SIP/IAX Information 2. Network Configuration		Registered	Trunk	voip-sip30	SIP	udp	305	192.168.6.110
Mobile Configuration Routing Configuration	3	• OK (101 ms)	Service Povider	sps30	SIP	udp		192.168.6.88
Manipulation Configuration VolD Configuration		Registered	Account	1000	SIP	udp	1000	192.168.6.205
Group Configuration		Registered	Account	1002	SIP	udp	1002	192.168.6.105
 System Configuration Reports 		Unregistered	Account	1003	SIP	udp	1003	(Unspecified)
+ System Tools		Unregistered	Account	1007	SIP	udp	1007	(Unspecified)

2.2 Create a IP Trunk on 3CX

1) Add-> VoIP Provider.

3CX Server Manager + Ports	/Trunks Status							Manage <mark>l</mark> .	Add View !
Ports/Trunks Status	X torona tal								PSIN Gatewar
💭 Extension Status	Status	Virtual Extension Number	Type	Name	INCUT	Caler D	Desiration		VOIP Provider
R. System Extensions Status	Recipiered (idle)	10008	Provider	led					Bridge
rP 3CXPhone Clients	Not Registered	90000	Gateway	webrts					DID / Inbound
State Connections	-								Outbound rule
Phones									Digital Recept
Server Activity Log									Ring Group
🕼 Server Event Log									Call Queue
o Services status									
Extensions									
💷 WebRTC Gateway									
💷 VoIP/PSTN Gateways									
J IV VoIP Providers									
> test									
↓ Inbound Rules									
Po Bridges									
> 1 OutBound Rules									
2 🙍 Digital Receptionist									
🚢 Ring Groups									
🛣 Call Queues									
Fax Machines									
> 🗘 Settings									
> 🛧 Updates									
> o ^P Links									
> 0 Help									

Get in add VoIP Provider Wizard, then click "Next".

3CX Server Manager • Add VO	P Provider
Reports/Trunks Status	Here Add VOIP Provider Wizard
🕵 Extension Status	Add VOIP Provider Wizard 1.
🛤 System Extensions Status	Name of Provider
CXPhone Clients	Country D
Remote Connections	Provider Generic SIP Trunk
Phones	
🖉 Server Activity Log	UKL Y IIII IIII IIII IIII IIII IIII IIII
🗟 Server Event Log	3CX Supported VoIP Providers can be found here: http://www.3cx.com/partners/sip-trunks/
Services status	More 3rd party tested providers can be found here: http://www.3cx.com/partners/voip-providers.html
Extensions	
💷 WebRTC Gateway	
VoIP/PSTN Gateways	
- I VoIP Providers	
> @r test	
Inbound Rules	
The Bridges	
OutBound Rules	
> 👷 Digital Receptionist	
Ring Groups	
🔝 Call Queues	
Fax Machines	
Settings	
Updates	
Y 😈 Help	
Name of Provider:GSM Gateway	
Country: Generic	

Provider: Generic SIP Trunk

2) Enter the VoIP GSM Gateway's IP and click "Next".

3CX Server Manager • Add VO	IP Provider		
R Ports/Trunks Status	Add VOIP Provider Wizard		
📌 Extension Status	VOIP Provider Details:		
🛤 System Extensions Status	Enter the hostname and port for your VOIP Provider's SIP S	Server	
SCXPhone Clients	SIP server hostname or IP	192 168 6 55	(Î)
Remote Connections	SIP Server port	5060	
Phones	Outbound proxy hostname or IP	192 168 6 55	
Server Activity Log	Outbound proxy port (default is 5060)	5060	
🔄 Server Event Log		3000	\forall
Services status			
Extensions			
WebRTC Gateway			
VoIP/PSTN Gateways			
- W VoIP Providers			
> 🕪 test			
Inbound Rules			
E Bridges			
OutBound Rules			
> 🖳 Digital Receptionist			
Ring Groups			
2 Call Queues			
Fax Machines			
Settings			
Updates			
🗸 😈 неір	1		

3) Enter External Number (You can enter any number as long as it isn't the same with extension numbers of 3CX, take 88888 as an examle here). And click "Next".

Note: "Maximum simultaneous calls " is four in the free version of 3CX. You can also enter the

number accordingly if you have bought license from 3CX.

3CX Server Manager • A	Add VOIP Provider	
Rorts/Trunks Status	Add VOIP Provider Wizard	
👥 Extension Status	Account Details	
🛤 System Extensions Status	Enter the Authentication ID or SIP User, Password and number of your account	
SCXPhone Clients	External Number 1.	
📇 Remote Connections	Authentication ID (aka SIP User ID)	
Thomes 2010		
🖾 Server Activity Log		
🗟 Server Event Log		
💝 Services status	Simultaneous Calls	
Extensions	Maximum simultaneous calls 2. 3	
💷 WebRTC Gateway		
💷 VoIP/PSTN Gateways		
- 🌐 VoIP Providers		
> () test		
Inbound Rules		
😳 Bridges		
OutBound Rules		
Digital Receptionist		
🐣 Ring Groups		
🙃 Call Queues		
> 🔓 Fax Machines		
> 🗘 Settings		
> 🛧 Updates		
້ 🖉 Links		
> 🔞 Help		

4)Configure the default destination of inbound route to IVR for the IP Trun and click "Next".

Note: If you want to change the inbound route, you can double click the trunk you want on the "Ports/Trunks Status" page after the SIP Trunk created.

 Ports/Trunks Status Extension Status System Extensions Status 	Add VOIP Provider Wizard Office Hours Configure where calls should be routed during of	ffice hours.	
SCXPhone Clients	C End Call	1.	
Remote Connections	Connect to Extension	10003	- (i
Phones	Connect to Queue / Ring Group		- (i
Server Activity Log	 Connect to Digital Receptionist 		- (i
Server Event Log	Voicemail box for Extension	10000	- (i
Services status	Forward to Outside Number		(
Extensions	Send fax to email of extension	email of extension 88888	- (
WebRTC Gateway			
VoIP/PSTN Gateways	Same as Out of Office hours		
VoIP Providers			
Inbound Rules			
Bridges			
Bridges OutBound Rules			
 Bridges OutBound Rules Digital Receptionist Biss Graups 			
Bridges OutBound Rules Digital Receptionist Ring Groups Collegee			
 Bridges OutBound Rules Digital Receptionist Ring Groups Call Queues Call Academics 			
 Bridges OutBound Rules Digital Receptionist Ring Groups Call Queues Fax Machines Continues 			
 Bridges OutBound Rules Digital Receptionist Ring Groups Call Queues Fax Machines Settings 			
 Bridges OutBound Rules Digital Receptionist Ring Groups Call Queues Fax Machines Settings Updates 			

5) Click "Skip" to finish the IP trunk configuration.

3CX Server Manager	Edit Outbound Rule	- New outbound rule					Manage	inv Settings	Help
E Ports/Trunks Status	Create an Outbo	und Gall Rule to configure on which PST	N port, VOIP provider or brid	ge an outbound calls	should be placed on				
Se Extension Status	General								
RA System Extensions Status	Plue Name		Fluie for GISN	Gateway	Φ				
FP 3CXPhone Clients	Apply this rule to the	ese cals							
S Phones	Define to which out	bound calls the rule must apply							
K Canual Artivity Lon									
Server Event Lon	Calls to number	is starting with praits			(D)				
On Camiros status	Calls from exter	naion(s)			GD (
	Cells to Number	ra with a length of			Ð				
BB Mich 877 Carriers	Calls from exter	nsion group				Select (i)			
webcic cateway									
sine VolP/PSTN Gateways	Make outbound call	Is on							
- tar Voir Providers	Configure up to 3 ro	utes for cells. The second and thed rout	will be used as becaup. For	each route, digits can	be shipped or added.				
V W GSM Gateway				Strip Digits	Prepend				
Inbound Rules	Route	1 GSM Gateway	¥ 10			0			
To Bridges	Ploute	2				0			
T OutBound Rules	Events.					0			
> 옷 Digital Receptionist									
All Ring Groups								Tank I	-
Ex Call Queues								range	Sec.
Fax Machines									
> Q Settings									
> 🗶 Updates									
> of Links									
> 😧 Help									

6) On "Ports/Trunks Status" page, we can check the trunk status.

Server Manager • Pc	orts/Tr	unl	cs Status					
Ports/Trunks Status 1.		×	Disconnect Call					
🕵 Extension Status			Status	Virtual Extension Number	Туре	Name	IN/OUT	Calle
🔜 System Extensions Status	2.		Registered (idle)	10006	Provider	GSM Gateway		
SCXPhone Clients			NOT Registered	90000	Gateway	webrtc		
📇 Remote Connections								
S Phones								
🖾 Server Activity Log								
🗟 Server Event Log								
🐡 Services status								
Extensions								
💷 WebRTC Gateway								
VoIP/PSTN Gateways								
- 🌐 VoIP Providers								
> 🎲 GSM Gateway								
Inbound Rules								
🗄 Bridges								
OutBound Rules								
> 🙍 Digital Receptionist								
🚨 Ring Groups								
🙃 Call Queues								
> 🔓 Fax Machines								
> 🗘 Settings								
> 🛧 Updates								
> 🖉 Links								
> 😰 Help								

3. IP to Mobile

In this section, we will configure outbound call from 3CX through VoIP GSM Gateway.

3.1 Create an Outbound Rule on 3CX

Click "Outbound Rules" on 3CX.

Rule Name: Rule for GSM Gateway

Prefix: 9

Call from extension(s): 1000-1006

Route: GSM Gateway

Strip: 1



3.2 Create an "IP to Mobile" Route on VoIP GSM Gateway

Path:VoIP GSM Gateway->Routing Configuration,IP->Tel Routing



MAXINCOM	VolP GSM	Gateway agreed			
 System Information Network Configuration Mobile Configuration Routing Configuration Routing Parameter IP>Tel Routing Tel>IP Routing Blacklist Manipulation Configuration Group Configuration System Configuration Reports System Tools 		IP->Tel Routing Edit Index 0 1. Description 0 Source Prefix 0 Source 0 3. Destionation Prefix 0 Destination 0	2.] 4. [5. <mark>∷ Save</mark>	26 SP-3CX any C Any C Account C Account C Service Provider C VoIP Provider C VoIP Provider C IP Group any C Port C Port Group	28 <1007aa> ♥ 30 <192.168.6.88> ♥ 30 <topbx110> ♥ 30 <test> ♥ 2 ♥ 31 <default> ♥</default></test></topbx110>

Description:SP-3CX Source Prefix:any Source:Service Provider(30<192.168.6.88>) Destination Prefix:any Destination:Port(2) Save it and apply the changes.

3.2 Register an account on IP Phone.

Click Extension Status on 3CX.Double click 10003.

3CX Server Manager •	Ext	ension Status								
📌 Ports/Trunks Status	X	Disconnect Call 🍸 Show Filte	er							
Extension Status 1.		Status	Extension	User Status	DND	Queues	Name	IN/OUT	Caller ID	Des
System Extensions Status		Registered (idle)	10000	Available	OFF	OUT				
🕫 3CXPhone Clients		Not Registered	10001	Available	OFF	OUT				
Remote Connections		Not Registered	10002	Available	OFF	OUT	lin zhiwe			
Phones 2	. 🔳	Registered (idle)	10003	Available	OFF	OUT				
Server Activity Log		Not Registered	10004	Available	OFF	OUT				
🗟 Server Event Log		Registered (idle)	10005	Available	OFF	OUT				
Services status		Not Registered	10007	Available	OFF	OUT				
Extensions										
💷 WebRTC Gateway										
💷 VoIP/PSTN Gateways										
> I VoIP Providers										
Inbound Rules										
🗄 Bridges										
OutBound Rules										
> 🙍 Digital Receptionist										
🐣 Ring Groups										
🗟 Call Queues										
> 🔓 Fax Machines										
> 🔅 Settings										
> 🛧 Updates										
> 🖉 Links										
> 🥑 Help										

Get the ID an password.

3CX Server Manager • I	Edit Extension - 10003
🗶 Ports/Trunks Status	Edit Extension settings and click OK or Apply to save changes.
📌 Extension Status	General Voice Mail Forwarding Rules Phone Provisioning 3CXPhone Other Options Office Hours Scheduling Rights
System Extensions Status	
3CXPhone Clients	User Information
Remote Connections	
Phones	Extension rounder
Server Activity Log	
🖾 Server Event Log	
Services status	Email address
Extensions	Mobile Number
WebRTC Gateway	Authentication
VoIP/PSTN Gateways	The authentication ID and Password are used by the phone to authenticate with 3CX Phone System. If the phone has a user id field enter the extension number.
VolP Providers	
Prideos	ID nito2007
OutRound Pulos	Password yw123456 ①
Ring Groups	
Call Queues	
Eax Machines	
> C Settings	
> ① Updates	
> P Links	
> 🔞 Help	

Login IP Phone, Account->Basic, select an account.

For example, Account: Account 1

Display Label:10003

Display Name:10003

Register Name:nito2007(Must be the same with ID)

User Name:10003

Password:yw123456

Server IP:192.168.6.88

Then, click "Submit", and we can check the account status.

Account-Basic			Help
SIP Account		_	Note :
Status	6. Registered		Max length of characters for inpu
Account Account Activo	Z. Account I		box: 255: Broadcoft Bhopshook copyo
Display Labol	Enabled		address
Display Laber	3.		127: Remote Phonebook URL &
Register Name	nito2007		AUTOP Manual Update Server UP
Liser Name	10003		63: The rest of input boxes
Password	10005		Warning :
SID Sonver 1			Field Description
SIF Server 1	4.		Field Description .
Server IP	192.168.6.8	(20 (5525-)	Submit Shortcut
Registration Period	1800	(30~655355)	Submit Cancel
SIP Server 2			
Server IP		Port 5060	
Registration Period	1800	(30~65535s)	
Outbound Proxy Server			
Enable Outbound	Disabled	•	
Server IP		Port 5060	
Backup Server IP		Port 5060	
Transport Type			
Transport Type	UDP	-	
NAT			
NAT	Disabled	-	
Stun Server Address	sip.pfingo.c	om Port 3478	

Try to use IP Phone call to tel, for example, pick up the phone, and dial 9+number.

4. Mobile to IP

In this section, we will configure incoming call to 3CX through VoIP GSM Gateway.

4.1 Create a "Mobile to IP" Route on VoIP GSM Gateway

Path: VoIP GSM Gateway->Routing Configuration,Tel->IP Routing,click "Add".





Description:SP-3CX Source Prefix:any Source: Port(2) Destination Prefix:any Destination: Service Provider(30<192.168.6.88>) Save it and apply the changes.

4.2 Configure the Inbound Route on 3CX

Click Inbound Rules, "Add DID" to configure the inbound route on 3CX.

3CX Server Manager	Inbound Rules			
🗶 Ports/Trunks Status	2. 🕂 Add DID 🕴 Edit DID 💼 Delete DID 🕇 M	ove Up 🦊 Move Down 🗁 Exp	oort 🔄 Import 🍸 Show Filter	
🕵 Extension Status	VoIP Gateway/Provider Port Identificati	on DID Name DID	O Number During Office Hours	Out of Office Hours
System Extensions Status				
CXPhone Clients				
📩 Remote Connections				
Phones				
Server Activity Log				
🖾 Server Event Log				
Services status				
> Extensions				
WebRTC Gateway				
VoIP/PSTN Gateways				
VoIP Providers				
Inbound Rules				
Bridges A OutBaund Bulan				
OutBound Rules				
Digital Receptionist				
> A Eav Machines				
> C Settings				
• • Updates				
> d ² Links				
> 10 Help				
Server Manager	ger ▶ Add DID ↓ Configure inbound routing of calls Inbound rule name Enter a DID or string to look for in the Inbound rule name Number/Mask Select from the drop-down below the Inbound Rule type DID/DDI number/mask Apply this rule to these ports Select the Gateway you want this DID	based on DID/DDI or Caller ID SIP "to" field. Use wildcards (1. type of inbound rule you want 2.	*) to match any digit for that entry. From GSM Gateway to create and enter a mask for this DID/DDI number/mask 88888	For example, entries 22444032 OR 2244403* DID. You can use the * as a wildcard either be T T T which will apply the rule to all the ports, or you
	Available ports	5.	> 🗹 🌐 GSM Gateway	(j)
Bridges				
> 1 OutBound Rules				
> 🧟 Digital Receptionist				
A Ring Groups				
🔂 Call Queues				
> 🚔 Fax Machines	Office Hours			
> 💭 Settings	Configure where calls to this DID/DDI	should be routed during office	hours.	
> ① Updates	C End Call	4		1
C Links	 Connect to Extension 	4.	10003	- (j)
Help	Connect to Queue / Ring Grou	р		- (j)
	Connect to Digital Receptionis	t		- (j)
	○ Voicemail box for Extension		10000	- (j)
	Forward to Outside Number			Ū.
	Send fax to		email of extension 88888	The second secon
	Set up Specific Office Hours		Set up Specific Office	Hours
	Include holidays		()	
	✓ Apply the same routing logic Outsid	le of office hours	~	
	Play Holiday Prompt on Public Holi	day	(j)	

Inbound route name: From GSM Gateway

DID/DDI number/mask:88888, which is the same with the trunk external number.

Available ports: GSM Gateway

Office Hours: Connect to Extension, 10003

Now we can test incoming calls for 3CX.For example,tel dial port 2's number on GSM gateway.When connected,dial external number(88888).