

Intercommunication between two MyPBX (via VoIP Trunk)

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This application note shows how to link two MyPBX in different location. With this function, we can link branches together with MyPBX. Same method can be used when connect more than 2 MyPBX in different branches.

1. Link two MyPBX in the same network

The simplest case to link two MyPBX together is in the same network. We start from this and then try to expand to different network. We use MyPBX here, same method for other MyPBX products. Below is the structure of how to link two MyPBX in the same LAN: **Flowchart:**



Application:

The method of connecting two MyPBX in the same LAN is:

1. Register the MyPBX A as an extension in MyPBX B via VOIP(SIP/IAX2) Trunk, so the extensions in MyPBX A can make calls to MyPBX B's extensions via this 'Special' trunk. 2. Use the reverse method in MyPBX B to register to MyPBX A.

In above structure:

1) The two MyPBX links each other via VOIP(SIP/IAX2) trunk.

2) All the extensions under MyPBX A are in the format 5xx.

3) All the extensions under MyPBX B are in the format 6xx.

4) Extensions under MyPBX A can make calls to extension under MyPBX B use format 6xx.

5) Extensions under MyPBX B can make calls to extension under MyPBX A use format 5xx.

6) Yealink-T28 A registers to MyPBX A as an extension 501.

7) Yealink-T28 B registers to MyPBX B as an extension 601.

Configure:



Step 1 Setup an extension 509 in MyPBX A. Extension: 509; Phone number of this extension Password: 509; Name: 509; CallerID: 509;

Create New VOIP Extension	X
General Type: SP Extension 10: 509 Password 10: 509 Name 10: 509 Caller ID 10: 509 Caller ID 10: 509	
VoiceMail Voice Mail Access PIN Code ①: 509 Send Voice Mail To Email Address ①: Note:If you want to send voice mail to email,please define VoiceMail Settings from the 'VoiceMail Settings' panel.	
VolP Settings NAT ⁽¹⁾ : DTMF Mode ⁽¹⁾ : RFC2833 Group Pickup Group ⁽¹⁾ :	
Follow me Always Follow me: No answer Transfer to: Number When Busy Number	
Other Option Call Waiting Hasmanager	
Save X Cancel	

Figure 1-1

Step 2: Set up an SIP/IAX2 trunk in MyPBX B to link to MyPBX A via this 509 extension. In the page Trunks--> Add VOIP Trunk.



Created New VOIP trunk		x
Туре:	SIP 💌	
Provider Name:	509	
Hostname/IP:	192.168.5.11	: 5060
Domain:	192.168.5.11	
Username:	509	
Authorization name:	509	
Password:	509	
	Enable Outbound Proxy Server	
	🖌 Save 🔀 Cancel	

Figure 1-2

Step 3: Set Outbound Route in MyPBX B, all calls start with 5 will be sent to MyPBX A. In the page: Outbound Routes--> Add Outbound Route.



New Outbound Route					X
Route Name 🛈 :	Callton	MyPBXA			
Dial pattern 🛈 :	5.				
Strip	0	digits from	m front		
Prepend these digits 🛈			before dialing	g	
Calls From Extension(s)					
Available Extensions				Selected	
		>>> 	601(Analog FXS 602(Analog FXS 603(Analog FXS 604(Analog FXS 605(Analog FXS 606(Analog FXS 608(Analog FXS	5) 5) 5) 5) 5) 5) 5) 5)	~
Make Outbound Calls On					
Available Trunks				Selected	
pstn1(Analog FXO) pstn2(Analog FXO) pstn3(Analog FXO) pstn4(Analog FXO) pstn5(Analog FXO) pstn6(Analog FXO) pstn7(Analog FXO) pstn8(Analog FXO)		»»» → ↓	509(SIP)		
	🗸 Save	🗙 Can	cel		

Figure 1-3

Save and Apply Changes.

Test Call:

- 1) Register an IP phone T28 to MyPBX A with 501 extension.
- 2) Register an IP phone T28 to MyPBX B with 601 extension.
- 3) Use 501 to dial 601. And you can see 601 is ringing and you can pick up the calls.

Above is the way to router MyPBX B's call to MyPBX A, the method to link MyPBX A to MyPBX B is the same as above.



2. Link two MyPBX in different location

The generally environment for two MyPBX in different location is: two MyPBX are both behind router and using the private IP.

Flowchart:



Application:

Note: Since the MyPBX doesn't have the public IP, we need to do port forwarding in the router and make MyPBX is reachable to others.

The method of connecting two MyPBX in the different location is:

 Register the MyPBX A as an extension in MyPBX B via VOIP (SIP/IAX2) Trunk, so the extensions in MyPBX A can make calls to MyPBX B's extensions via this 'Special' trunk.
 Use the reverse method in MyPBX B to register to MyPBX A.

In above structure:

1) The two MyPBX links each other via VOIP (SIP/IAX2) trunk.

2) All the extensions under MyPBX A are in the format 5xx.

3) All the extensions under MyPBX B are in the format 6xx.

4) Extensions under MyPBX A can make calls to extension under MyPBX B use format 6xx.

5) Extensions under MyPBX B can make calls to extension under MyPBX A use format 5xx.

6) Yealink-T28 A registers to MyPBX A as an extension 501.

7) Yealink-T28 B registers to MyPBX B as an extension 601.

2.1 Link two MyPBX via IAX Trunk

Step 1 Set port forwarding in the router for MyPBX A.

Example: The router's public IP is '102.42.46.126'.

The MyPBX A is behind the router, to register to MyPBX A via the internet, you need to forward the IAX port in your router, so all the packets received on the router WAN port (102.42.46.126:4569) will be forwarded to the MyPBX A (192.168.5.11:4569). Below is the setting page in a Linksys router:

LINKSYS [®] A Division of Cisco Systems, Inc.								Firmware Version: 1.04.06		
Applications		Etherfast® Cable/DSL Router BEFSR41								
& Gaming	Setup Port Range Fo	Sec rwarding	urity Port Tri	Application: & Gaming iggering	s Administr a UPnP Forwardi	ation	Status DMZ	QoS		
Port Range Forwarding							Port Rar	ige Forwarding		
	Application	Start	Por	t Range Protocol	IP Address	Fnabled	Port Range used to set	Forwarding can be up public services		
	IAX	4569 to	4569	Both 💌	192.168.5.11		from the Int requests o	ternet make certain n your network, the		
		0 to	0	Both 💌	192.168.5.0		Router can requests to to handle th	forward those computers equipped he requests. If, for		
		0 to	0	Both 💌	192.168.5.0		example, y number 80	ou set the port (HTTP) to be		
		0 to	0	Both 💌	192.168.5.0		192.168.1.: requests fr	to IP Address 2, then all HTTP om outside users will		
		0 to		Both 💌	192.168.5.0		be forward is recomm	led to 192.168.1.2. It nended that the		
		0 to	0	Both -	192.168.5.0		address.	use static ip		
		0 to	0	Both 💌	192.168.5.0		You may u establish a	se this function to web server or FTP		
		0 to	0	Both 💌	192.168.5.0		server via sure that y	an IP Gateway. Be ou enter a valid		
		0 to	0	Both 💌	192.168.5.0		More			
				Save Sett	ings Cancel	Changes		CISCO SYSTEMS		

Figure 2-1

Step 2 Setup an extension 509 in MyPBX A.

Type: IAX

Extension: 509; Phone number of this extension Password: 509;

Name: 509;

Caller ID: 509;



Create New VOIP Extension	Х
General Type: IAX Type: IAX Extension 1: 509 Name 1: 509 Caller ID 1: 509	
VoiceMail Voice Mail Access PIN Code ①: 509 Send Voice Mail To Email Address ①: Note:If you want to send voice mail to email,please define VoiceMail Settings from the VoiceMail Settings' panel.	
VoIP Settings NAT ⁽¹⁾ : DTMF Mode ⁽¹⁾ : RFC2833 V Group Pickup Group ⁽¹⁾ : V	
Follow me Image: Always Follow me: Image: No answer Transfer to: Image: Number Image: When Busy Number	
Other Option Call Waiting Hasmanager Cancel	

Figure 2-2

Step 3: Set up an IAX trunk in MyPBX B to link to MyPBX A via this 509 extension. In the page Trunks \rightarrow Add VOIP Trunk \rightarrow IAX Trunk.

Created New VOIP trunk			X
Туре:	IAX 💌		
Provider Name:	MyPBX-A		
Hostname/IP:	102.42.46.126	: 4569	
Username:	509		
Password:	509		
	🖌 Save 🔀 Cancel		

Figure 2-3

Step 4: Set Outbound Route in MyPBX B, all calls start with 5 will be sent to MyPBX A. In



the page: Outbound Routes--> Add Outbound Route.

New Outbound Route	x
Route Name🛈 :	: CalltoMyPBXA
Dial pattern 🛈 :	5.
Strip	0 digits from front
Prepend these digits 🛈	before dialing
Calls From Extension(s)	
Available Extensions	Selected
	>>> 601 (Analog FXS) 602 (Analog FXS) 603 (Analog FXS) 603 (Analog FXS) 604 (Analog FXS) 605 (Analog FXS) 605 (Analog FXS) 606 (Analog FXS) 607 (Analog FXS) 608 (Analog FXS) 🗸
Make Outbound Calls On Available Trunks	Selected
509(SIP) pstn1(Analog FXO) pstn2(Analog FXO) pstn3(Analog FXO) pstn4(Analog FXO) pstn5(Analog FXO) pstn6(Analog FXO) pstn7(Analog FXO)	MyPBX-A(IAX)
	Save Cancel

Figure 2-4

Save and Apply Changes.

Test Call:

1) Register an IP phone T28 to MyPBX A with 501 extension.

- 2) Register an IP phone T28 to MyPBX B with 601 extension.
- 3) Use 601 to dial 501. And you can see 501 is ringing and you can pick up the calls.

Above is the way to router MyPBX B's call to MyPBX A.

Step 5: Use the same method do port forwarding in router B for MyPBX B. Your public address from network provider maybe a dynamic ip which will be changed periodically. To overcome the problem of dynamic ip, you may need to use the DDNS service , for more info please Google via internet.

2.2 Link two MyPBX via SIP Trunk

Step 1 Set port forwarding in the router for MyPBX A.

Example: The router's public IP is '102.42.46.126'.

The MyPBX A is behind the router, to register to MyPBX A via the internet, you need to forward the SIP port in your router, so all the packets received on the router WAN port (102.42.46.126:5060) will be forwarded to the MyPBX A (192.168.5.11:5060). Below is the setting page in a Linksys router:

LINKSYS [®] A Division of Cisco Systems, Inc.								Firmware Version: 1.04.06
Applications		_			Etherf	ast® Cable	e/DSL Router	BEFSR41
& Gaming	Setup Port Range Fo	Secu rwarding	r ity Port Trig	Application: & Gaming ggering	B Administra	ation	Status DMZ	QoS
Port Range Forwarding			Port	Range			Port Ran	nge Forwarding
	Application	Start	End	Protocol	IP Address	Enabled	used to se on your ne from the In	t up public services twork. When users ternet make certain
	SIP SIP-RTP	5060 to	5060 10200		192.168.5. 11 192.168.5. 11	ব	requests o Router car requests to	n your network, the forward those computers equipped
		0 to	0	Both 💌	192.168.5.0		to handle ti example, y number 80 forwarded	he requests. If, for ou set the port (HTTP) to be to IP Address
		0 to	0	Both 💌	192.168.5.0 192.168.5.0		192.168.1. requests fi be forward	2, then all HTTP rom outside users will ded to 192.168.1.2. It
		0 to	0	Both 💌	192.168.5.0		is recomi computei address.	mended that the ruse static IP
		0 to	0	Both 💌	192.168.5. U 192.168.5. 0		You may u establish a	se this function to web server or FTP
		0 to	0	Both 💌	192.168.5.0		server via sure that y	an IP Gateway. Be ou enter a valid
	I	to	U		192.168.5.[0		More	CISCO SYSTEMS
				Save Sett	ings Cancel	Changes		ավիստովիս։

Note: we must map UDP port 5060 and UDP port 10001-10200.

Figure 2-5

Step 2 Configure NAT settings in MyPBX A.

MyPBX -> SIP Settings -> NAT, configure the NAT settings according to below page.

External IP: your router's public IP address

External Host:

External refresh:

Local Network Address: 192.168.5.0/255.255.255.0 (change this according to your network configuration)

NAT mode: Yes

Allow RTP Reinvite: No





Figure 2-6

Step 3 Setup an extension 509 in MyPBX A. General Type: SIP; Extension: 509; Phone number of this extension Password: 509; Name: 509; Caller ID: 509;

VoIP Settins

NAT: yes **Note**: please enable NAT.



reate New VOIP Extension	x
General Type: SP Image: SD9 Name : 509 Caller ID : 509	
VoiceMail Voice Mail Access PIN Code ①: 509 Send Voice Mail To Email Address ①: Note:If you want to send voice mail to email,please define VoiceMail Settings from the 'VoiceMail Settings' panel.	
VolP Settings NAT ¹ : I DTMF Mode ¹ : RFC2833 V Group Pickup Group ¹ : V	
Follow me Always Follow me: No answer Transfer to: When Busy	
Other Option Call Waiting Hasmanager Value Save Cancel	

Figure 2-7

Step 4: Set up an SIP trunk in MyPBX B to link to MyPBX A via this 509 extension. In the page Trunks--> Add VOIP Trunk.



Created New VOIP trunk		2	K
Туре:	SIP 💌		
Provider Name:	MyPBX-A		
Hostname/IP:	102.42.46.126	: 5060	
Domain:	102.42.46.126		
Username:	509		
Authorization name:	509		
Password:	509		
	Enable Outbound Proxy Server		
	🖌 Save 🔀 Cancel		

Figure 2-8

Step 5: Set Outbound Route in MyPBX B, all calls start with 5 will be sent to MyPBX A. In the page: Outbound Routes--> Add Outbound Route.



New Outbound Route					X
Route Name 🛈 :	Callto	MyPBXA			
Dial pattern 🛈 :	5.				
Strip 🛈	0	digits fror	m front		
Prepend these digits 🛈			before dialing	3	
Calls From Extension(s)				-	
Available Extensions				Selected	
		>>> 	601 (Analog FXS 602 (Analog FXS 603 (Analog FXS 604 (Analog FXS 605 (Analog FXS 606 (Analog FXS 608 (Analog FXS	5) 5) 5) 5) 5) 5) 5)	
Make Outbound Calls On Available Trunks				Selected	
509(SIP) pstn1(Analog FXO) pstn2(Analog FXO) pstn3(Analog FXO) pstn4(Analog FXO) pstn5(Analog FXO) pstn6(Analog FXO) pstn7(Analog FXO)		>>> 	MyPBX-A(SIP)		
	🗸 Save	🗙 Can	cel		

Figure 2-9

Save and Apply Changes.

Test Call:

- 1) Register an IP phone T28 to MyPBX A with 501 extension.
- 2) Register an IP phone T28 to MyPBX B with 601 extension.
- 3) Use 601 to dial 501. And you can see 501 is ringing and you can pick up the calls.

Above is the way to router MyPBX B's call to MyPBX A.

Step 6: Use the same method do port forwarding in router B for MyPBX B. Your public address from network provider maybe a dynamic ip which will be changed periodically. To overcome the problem of dynamic ip, you may need to use the DDNS service , for more info please Google via internet.

<Finish>