

# Intercommunication between two MyPBX (via VoIP Trunking mode)

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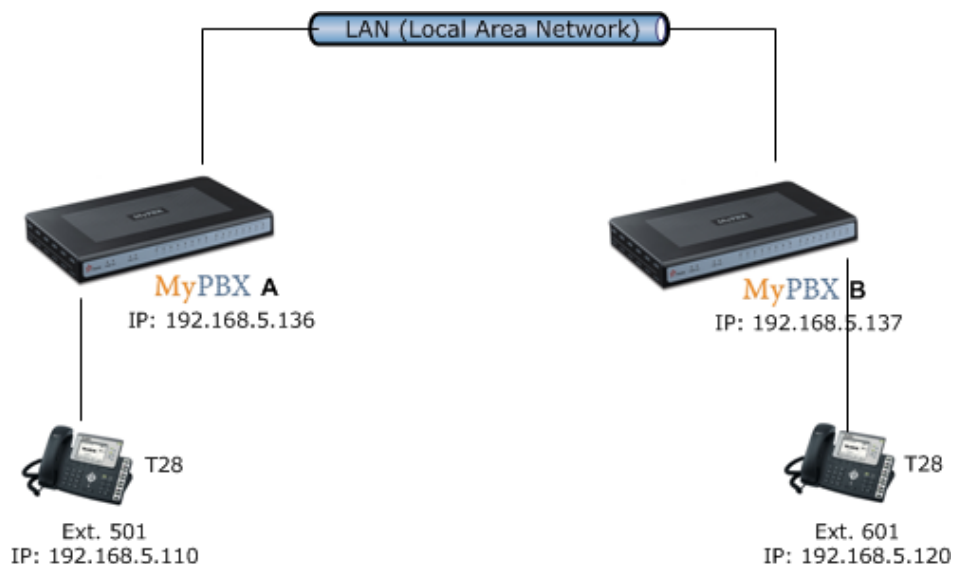
This application note shows how to link two MyPBX in different location. With this function, we can link branches together with MyPBX. Same method can be used when connect more than 2 MyPBX in different branches.

## 1. Link two MyPBX in same network

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

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. Point the MyPBX A to MyPBX B via VOIP (SIP/IAX2) Trunking, 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 point to MyPBX A.

In above structure:

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

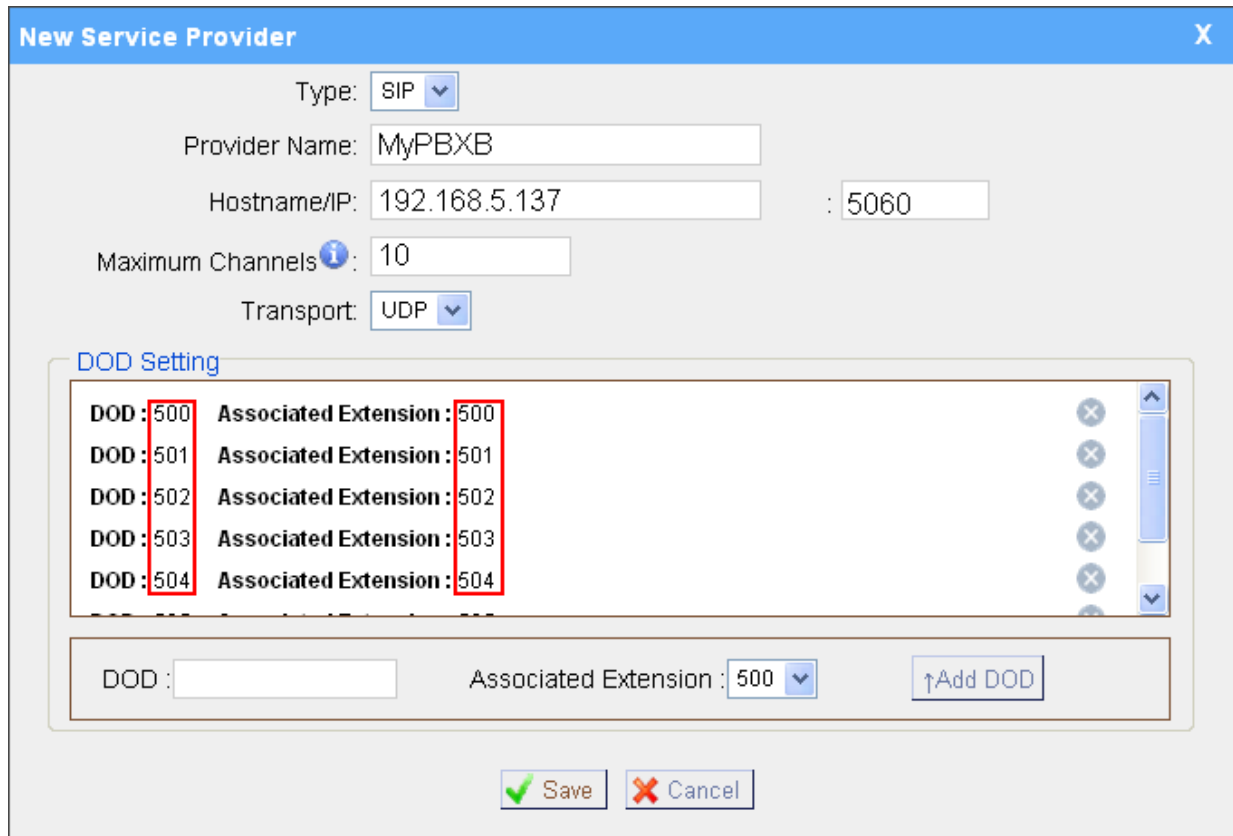
6) Yealink-T28 A registers to MyPBX A as an extension 501.

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

### Configure:

**Step 1:** Setup SIP Trunking in MyPBX A, connect to MyPBX B.

Trunks-> Service Provider -> New Service Provider



DOD	Associated Extension
500	500
501	501
502	502
503	503
504	504

Figure 1-1

**Step 2:** Setup Outbound Route in MyPBX A. all calls start with 6 and 3 digits will be sent to MyPBX B, In the page: Outbound Routes -> Add Outbound Route.

### New Outbound Route X

Route Name i:

Dial Pattern i:

Strip i:  digits from front

Prepend these digits i:  before dialing

Password:

PIN User:

i Member Extensions

Available Extensions		Selected
<div style="border: 1px solid gray; height: 100px;"></div>	>>> → ← <<<	<div style="border: 1px solid gray; padding: 5px;">500(SIP) 501(SIP) 502(SIP) 503(SIP) 504(SIP) 505(SIP) 506(SIP) 507(SIP)</div>

i Member Trunks

Available Trunks		Selected
<div style="border: 1px solid gray; padding: 5px;">pstn3(FXO) pstn4(FXO)</div>	>>> → ← <<<	<div style="border: 1px solid gray; padding: 5px; border: 2px solid red;">MyPBXB(SPS)</div>

Figure 1-2

**Step 3:** Setup Inbound Routes for extensions according to DIDs assigned in MyPBX A.

1) Setup Inbound Route for extension 500.

create New Inbound Route
X

**General**

Route Name i :

DID Number i :

Caller ID Number i :

Distinctive Ringtone i :

**Member Trunks** i

Available Trunks		Selected
psth3(FXO) psth4(FXO)	<input type="button" value="»»"/> <input type="button" value="→"/> <input type="button" value="←"/> <input type="button" value="««"/>	MyPBXB(SPS)

**During Office Hours**

Destination:

<input type="radio"/> End Call	<input type="radio"/> Extension	<input style="border: 2px solid red;" type="text" value="Extension -- 500"/>
<input type="radio"/> Voicemail	<input type="radio"/> IVR	<input type="text" value="Voicemail -- 500"/>
<input type="radio"/> RingGroup	<input type="radio"/> Conference Room	<input type="text" value="IVR -- welcome"/>
<input type="radio"/> Conference Room	<input type="radio"/> DISA	<input type="text" value="RingGroup -- ringgroup_de"/>
<input type="radio"/> DISA	<input type="radio"/> Queues	<input type="text" value="Conference Room -- 640"/>
<input type="radio"/> Queues		<input type="text" value="DISA --"/>
		<input type="text" value="Queues -- 680"/>

Figure 1-3

2) Setup inbound route for all extensions referring to the DIDs assigned.

+ New Inbound Route
**Manage Inbound Routes**

Route Name	DID Number	Caller ID Number		
Incoming500	500		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming501	501		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming502	502		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming503	503		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming504	504		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming505	505		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming506	506		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Figure 1-4

Save and Apply Changes.

**Step 4:** Above (Step1 to Step3) is the way to router MyPBX A's call to MyPBX B, the method to router MyPBX B call to MyPBX A is the same as above.

**Step 5:** Test call. **Before testing, make sure the trunk status is ok on Line status page.**  
MyPBX A trunk's status:

Trunks					
Status	Signal	Trunk Name	Type	Username	Port/Hostname/IP
OK (2 ms)		MyPBXB	SP-SIP		192.168.5.137

Figure 1-5

MyPBX B trunk's status:

Trunks					
Status	Signal	Trunk Name	Type	Username	Port/Hostname/IP
OK (2 ms)		MyPBXA	SP-SIP		192.168.5.136

Figure 1-6

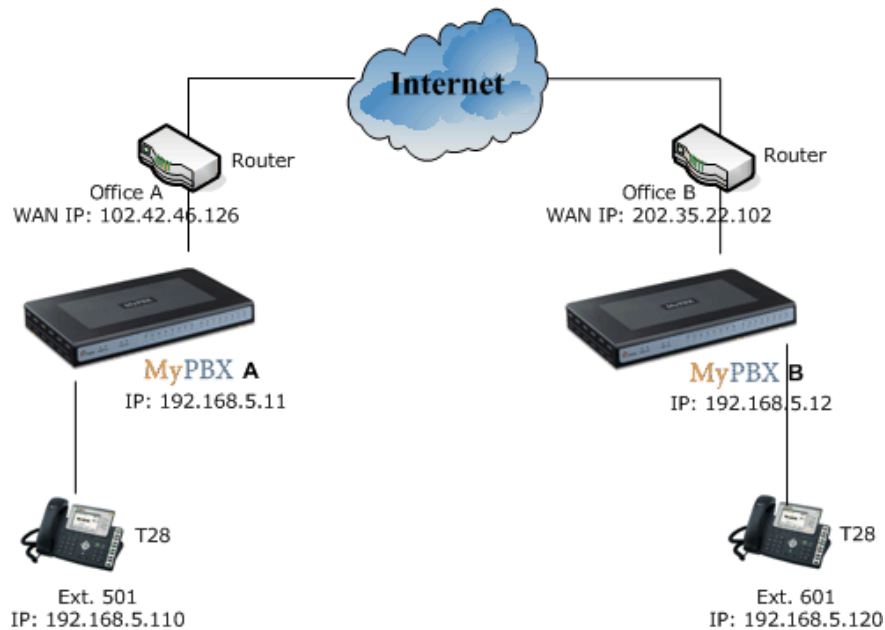
### Test Call

- 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 answer the calls.
- 4) Use 601 to dial 501. And you can see 501 is ringing and you can answer the calls.

## 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:

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.

## 2.1 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:

**Note1:** we must map UDP port 5060 and UDP port 10001-10200.

**Note2:** 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.

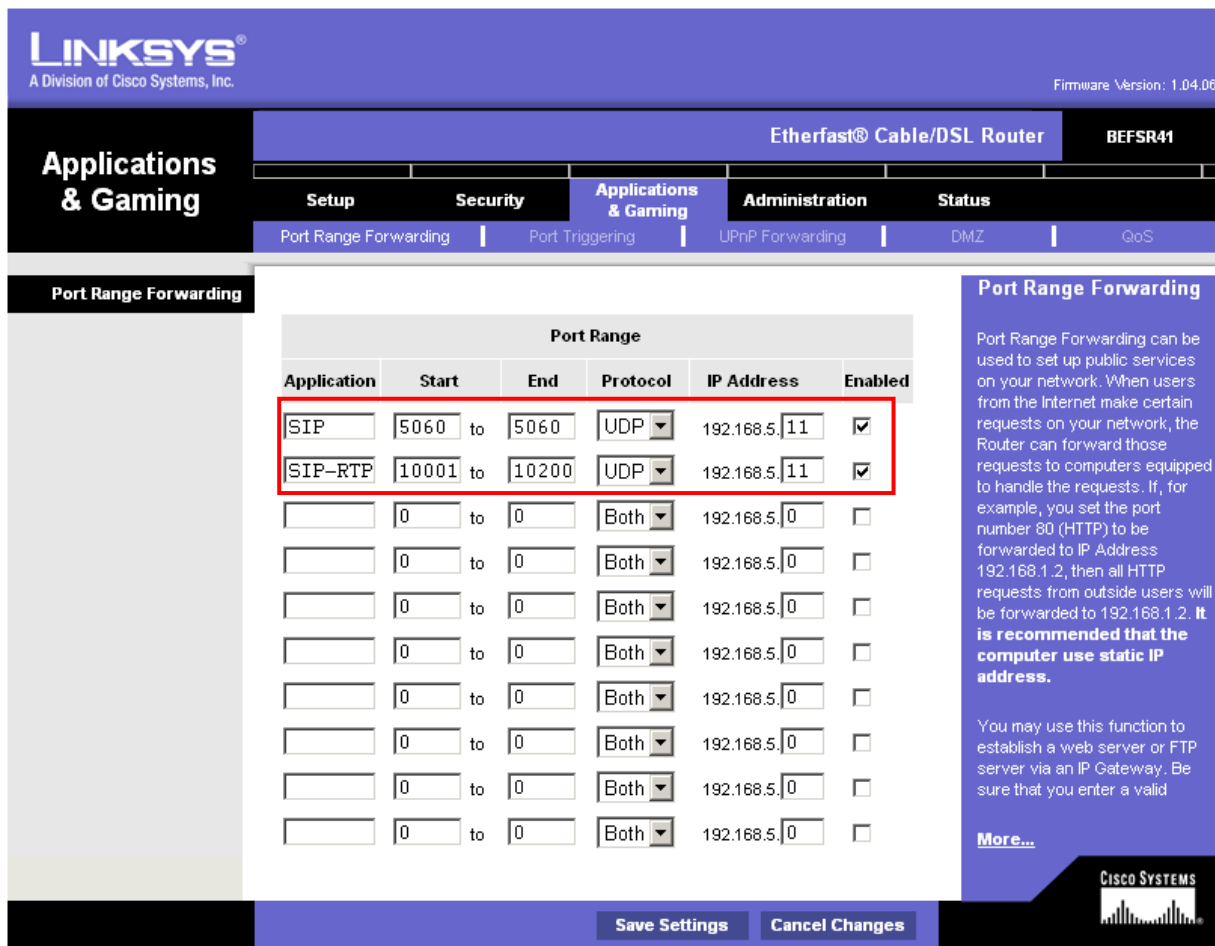


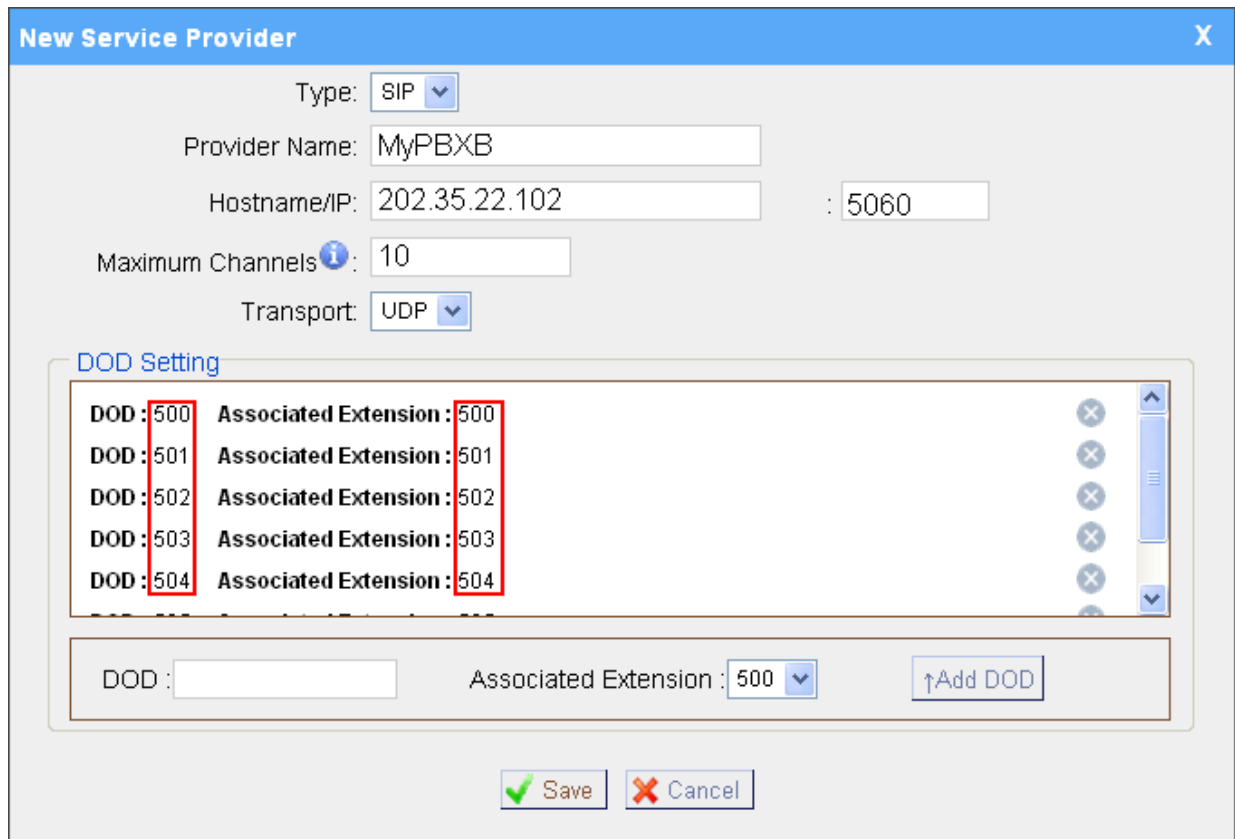
Figure 2-1

**Step 2:** Use the same method do port forwarding in router B for MyPBX B.

Example: The router's public IP is '202.35.22.102'.

**Step 3:** Setup SIP Trunking in MyPBX A, connect to MyPBX B.

Trunks-> Service Provider -> New Service Provider



Type: SIP

Provider Name: MyPBXB

Hostname/IP: 202.35.22.102 : 5060

Maximum Channels: 10

Transport: UDP

**DOD Setting**

DOD : 500	Associated Extension : 500	✕
DOD : 501	Associated Extension : 501	✕
DOD : 502	Associated Extension : 502	✕
DOD : 503	Associated Extension : 503	✕
DOD : 504	Associated Extension : 504	✕

DOD :  Associated Extension : 500

Figure 2-2

**Step 4:** Setup Outbound Route in MyPBX A. all calls start with 6 and 3 digits will be sent to MyPBX B, In the page: Outbound Routes -> Add Outbound Route.

### New Outbound Route X

Route Name i:

Dial Pattern i:

Strip i:  digits from front

Prepend these digits i:  before dialing

Password:

PIN User:

**Member Extensions i**

Available Extensions		Selected
<input type="text"/>	<input type="button" value="»»"/> <input type="button" value="→"/> <input type="button" value="←"/> <input type="button" value="««"/>	<input type="text" value="500(SIP)&lt;br/&gt;501(SIP)&lt;br/&gt;502(SIP)&lt;br/&gt;503(SIP)&lt;br/&gt;504(SIP)&lt;br/&gt;505(SIP)&lt;br/&gt;506(SIP)&lt;br/&gt;507(SIP)"/>

**Member Trunks i**

Available Trunks		Selected
<input type="text" value="pstn3(FXO)&lt;br/&gt;pstn4(FXO)"/>	<input type="button" value="»»"/> <input type="button" value="→"/> <input type="button" value="←"/> <input type="button" value="««"/>	<input type="text" value="MyPBXB(SPS)"/>

Figure 2-3

**Step 5:** Setup Inbound Routes for extensions according to DIDs assigned in MyPBX A.

1) Setup Inbound Route for extension 500.

create New Inbound Route
X

**General**

Route Name i :

DID Number i :

Caller ID Number i :

Distinctive Ringtone i :

**Member Trunks** i

Available Trunks		Selected
psth3(FXO) psth4(FXO)	<input type="button" value="»»"/> <input type="button" value="→"/> <input type="button" value="←"/> <input type="button" value="««"/>	MyPBXB(SPS)

**During Office Hours**

Destination:

<input type="radio"/> End Call	<input type="radio"/> Extension	<input style="border: 2px solid red;" type="text" value="Extension -- 500"/>
<input type="radio"/> Voicemail	<input type="radio"/> IVR	<input type="text" value="Voicemail -- 500"/>
<input type="radio"/> RingGroup	<input type="radio"/> Conference Room	<input type="text" value="IVR -- welcome"/>
<input type="radio"/> Conference Room	<input type="radio"/> DISA	<input type="text" value="RingGroup -- ringgroup_de"/>
<input type="radio"/> DISA	<input type="radio"/> Queues	<input type="text" value="Conference Room -- 640"/>
<input type="radio"/> Queues		<input type="text" value="DISA --"/>
		<input type="text" value="Queues -- 680"/>

Figure 2-4

2) Setup inbound route for all extensions referring to the DIDs assigned.

+ New Inbound Route

### Manage Inbound Routes

Route Name	DID Number	Caller ID Number	Edit	Delete
Incoming500	500		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming501	501		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming502	502		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming503	503		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming504	504		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming505	505		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Incoming506	506		<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Figure 2-5

Save and Apply Changes.

**Step 6:** Above (Step3 to Step5) is the way to router MyPBX A's call to MyPBX B, the method to router MyPBX B's call to MyPBX A is the same as above.

**Step 7:** Test call. **Before testing, make sure the trunk status is ok on Line status page.**  
MyPBX A trunk's status:

Trunks					
Status	Signal	Trunk Name	Type	Username	Port/Hostname/IP
OK (2 ms)		MyPBXB	SP-SIP		202.35.22.102

Figure 2-6

MyPBX B trunk's status:

Trunks					
Status	Signal	Trunk Name	Type	Username	Port/Hostname/IP
OK (2 ms)		MyPBXA	SP-SIP		102.42.46.126

Figure 2-7

### 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 answer the calls.
- 4) Use 601 to dial 501. And you can see 501 is ringing and you can answer the calls.

## 2.2 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:

**Note1:** we must map UDP port 4569.

**Note2:** 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.

**LINKSYS**  
A Division of Cisco Systems, Inc. Firmware Version: 1.04.06

**Applications & Gaming** Etherfast® Cable/DSL Router BEFSR41

Setup Security **Applications & Gaming** Administration Status

Port Range Forwarding | Port Triggering | UPnP Forwarding | DMZ | GoS

**Port Range Forwarding**

Port Range					
Application	Start	End	Protocol	IP Address	Enabled
IAX	4569	4569	Both	192.168.5.11	<input checked="" type="checkbox"/>
	0	0	Both	192.168.5.0	<input type="checkbox"/>
	0	0	Both	192.168.5.0	<input type="checkbox"/>
	0	0	Both	192.168.5.0	<input type="checkbox"/>
	0	0	Both	192.168.5.0	<input type="checkbox"/>
	0	0	Both	192.168.5.0	<input type="checkbox"/>
	0	0	Both	192.168.5.0	<input type="checkbox"/>
	0	0	Both	192.168.5.0	<input type="checkbox"/>
	0	0	Both	192.168.5.0	<input type="checkbox"/>
	0	0	Both	192.168.5.0	<input type="checkbox"/>

Port Range Forwarding can be used to set up public services on your network. When users from the Internet make certain requests on your network, the Router can forward those requests to computers equipped to handle the requests. If, for example, you set the port number 80 (HTTP) to be forwarded to IP Address 192.168.1.2, then all HTTP requests from outside users will be forwarded to 192.168.1.2. **It is recommended that the computer use static IP address.**

You may use this function to establish a web server or FTP server via an IP Gateway. Be sure that you enter a valid

[More...](#)

Save Settings Cancel Changes

CISCO SYSTEMS

Figure 2-8

**Step 2:** Use the same method do port forwarding in router B for MyPBX B. Example: The router’s public IP is ‘202.35.22.102’.

Other settings please see ‘Link two MyPBX via SIP Trunk’, **Step3** to **Step7**.

<Finish>