



# The Integration of MyPBX and CyberData SIP Intercoms and Paging Endpoints

Version 1.2

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# 1. Overview

This solution uses Yeastar IPPBX and CyberData SIP Intercoms and Paging Endpoints, providing an advanced SIP Paging Solution based on IP technology. This solution helps you to build a whole paging solution, with Yeastar acting as a SIP server for CyberData registration while CyberData taking charge of paging management.

MyPBX could work perfectly with CyberData SIP Intercoms and Paging Endpoints and help you to achieve the following features:

- Intercom between CyberData Intercoms and Yeastar PBX extensions.
- Individual paging by dialing extension number to end point.
- Page different paging groups by zone number in CyberData SIP Paging Server.

**Note:**

The Logic is demonstrated in the diagram as below,

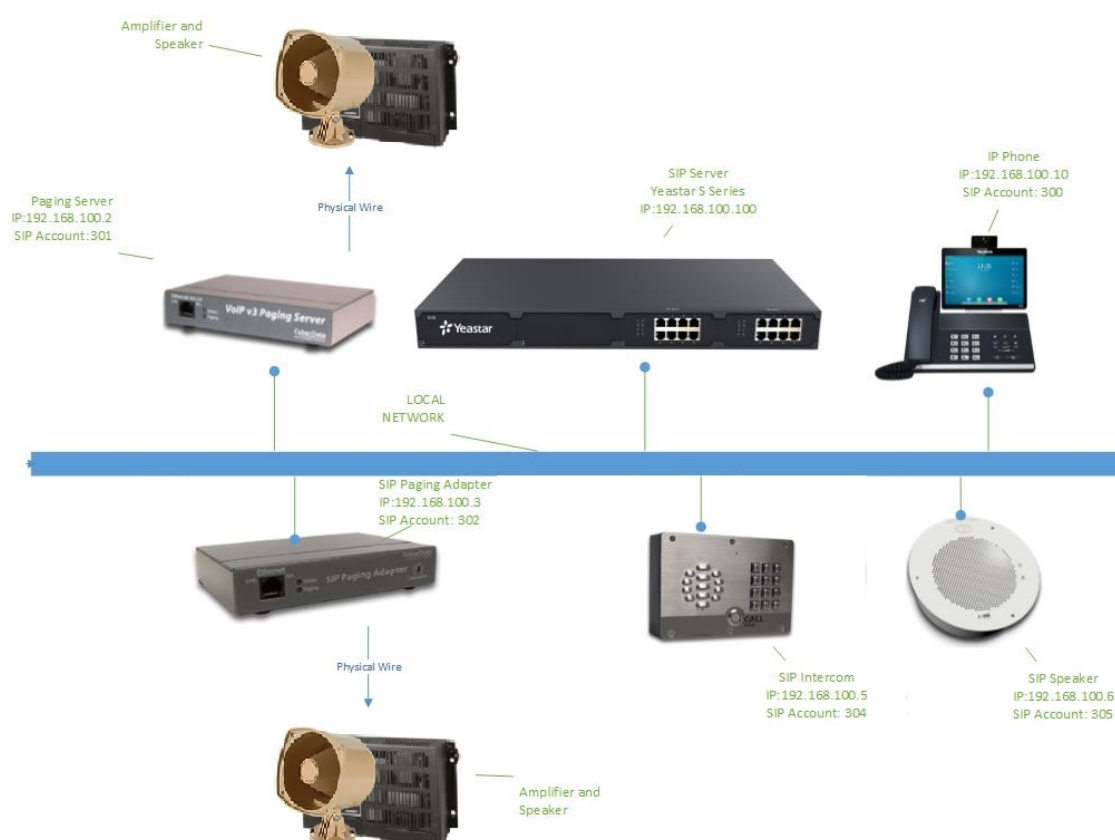


Figure 1-1

## 2. Register CyberData to Yeastar PBX

### 2.1 Create Extensions in Yeastar IPPBX

Yeastar IP PBX offers SIP accounts for CyberData devices including SIP Paging Server, SIP Paging Adapter, SIP Intercom, SIP Paging Amplifier and SIP Speaker to register as PBX extensions. So that other IP phones and software phones in the PBX can easily reach CyberData devices and paging.

1. Make sure your Yeastar IPPBX and CyberData devices are in the same LAN and accessible. For example, in this guide, all the device are in the segment if 192.168.100.X, detail as below,

*Yeastar IPPBX: 192.168.100.100*

*SIP Paging Server: 192.168.100.2*

*SIP Paging Adapter: 192.168.100.3*

*SIP Paging Amplifier: 192.168.100.4*

*SIP Outdoor intercom: 192.168.100.5*

*SIP Speaker: 192.168.100.6*

2. Log on Yeastar IPPBX, and create extensions for CyberData registration.

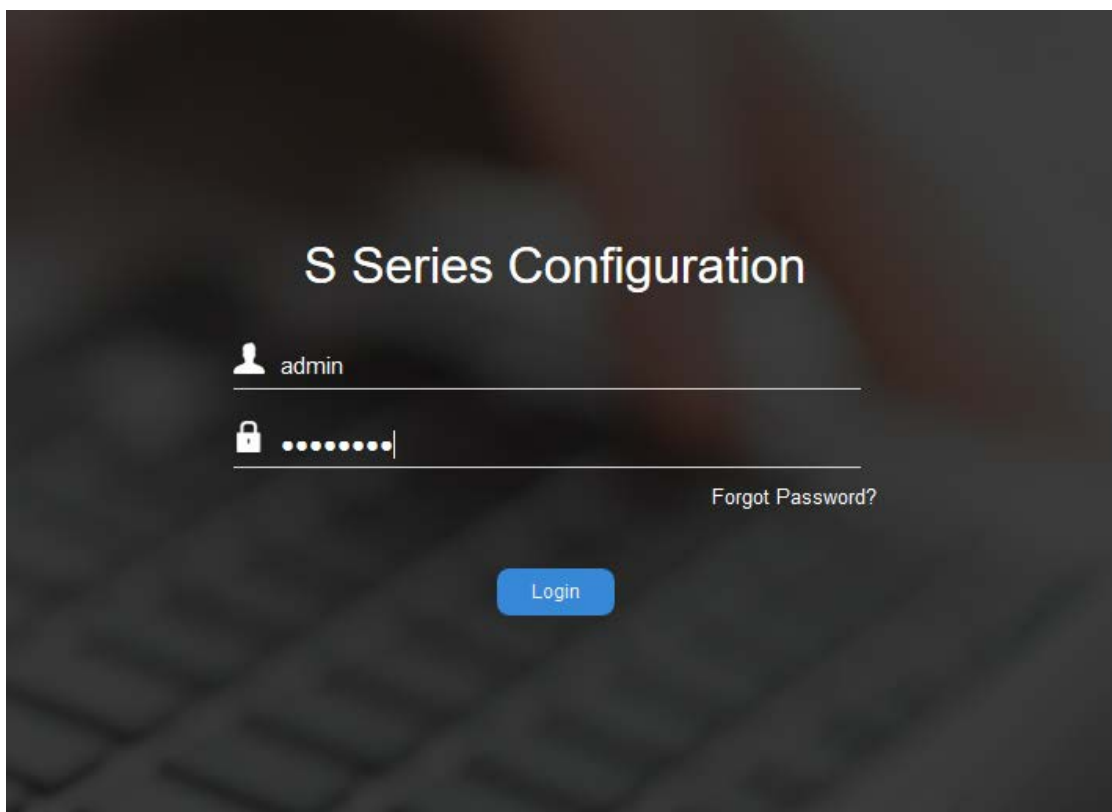


Figure 2-1

The default IP username/password is admin/password

Go to the page Extension page and create extensions,

Path: Settings -> PBX -> Extensions -> Add extensions

The screenshot shows the 'Settings' interface for a Yeastar PBX system. The left sidebar contains a tree view with 'PBX' expanded, showing 'Extensions' (selected), 'Trunks', 'Call Control', 'Call Features', 'Voice Prompts', 'General', 'Recording', 'System', and 'Event Center'. The main area is titled 'Settings' and has tabs for 'Extensions' and 'Extension Group'. Below the tabs are buttons for 'Add', 'Bulk Add', 'Edit', and 'Delete'. A search bar labeled 'Extension, Name, Type' is on the right. The 'Add Extension' modal is open, showing the 'Basic' tab. The 'General' section includes fields for 'Type' (SIP selected), 'Extension' (301), 'Caller ID' (301), 'Registration Name' (301), and 'Registration Password' (Pincode301). The 'User Information' section includes fields for 'Name' (Paging Server), 'Email', 'User Password' (masked), 'Mobile Number', and 'Prompt Language' (English System Pro). 'Save' and 'Cancel' buttons are at the bottom.

Figure 2-2

For instance, we create extension 301 for CyberData SIP Paging Server registration as above,

*Type: SIP*

*Extension: 301*

*Caller ID: 301*

*Registration Name: 301*

*Registration Password: Pincode301*

Also, please create extension as below with the same method.

*IP phone: 300*

*SIP Paging Server: 301*

*SIP Paging Adapter: 302*

*SIP Paging Amplifier: 303*

*SIP Outdoor Intercom: 304*

*SIP Speaker: 305*

## 2.2 Register CyberData Products to Yeastar IPPBX's extensions.

Notes:

1. There are 2 ways to power up CyberData products, one is connecting to PoE switch, the other one is an alternate power input to be used when PoE is not available.

Note: different device using the different power input as below,

+48V DC : SIP Paging Server and SIP Paging Adapter.

+8 to +12V DC/ 1000mA : All intercoms.

+12V DC/ 1000mA for SIP speakers.

In this guide, we connect CyberData to a PoE Switch.

2. The default IP of CyberData device is 10.10.10.10, Please change the IP to the same segment of IPPBX.

### 1. Change the CyberData devices' IP address.

Now, we take SIP Paging Server 301 as an example.

First, change the SIP Paging Server's IP address to 192.168.100.2, in this part, you may need to add an IP address to your PC, such as 10.10.10.11, then log on SIP Paging Server with the default Username/Password: admin/admin. Then go to the page "Network", and change the IP to 192.168.100.2.

The screenshot displays the 'CyberData v3.1 Paging Server' web interface. It is divided into three main sections: 'Stored Network Settings', 'VLAN Settings', and 'Current Network Settings'.

- Stored Network Settings:** This section contains fields for 'Addressing Mode' (Static selected, DHCP unselected), 'Hostname' (PagingServer), 'IP Address' (192.168.100.2), 'Subnet Mask' (255.255.255.0), 'Default Gateway' (192.168.100.1), 'DNS Server 1' (192.168.1.1), 'DNS Server 2' (empty), and 'DHCP Timeout in seconds' (60). A note below states: '\* A value of -1 will retry forever'.
- VLAN Settings:** This section has two fields: 'VLAN ID (0-4095):' (0) and 'VLAN Priority (0-7):' (0).
- Current Network Settings:** This section shows the current configuration: 'IP Address: 192.168.100.2', 'Subnet Mask: 255.255.255.0', and 'Default Gateway: 192.168.100.1'.

At the bottom right, there are three buttons: 'Save', 'Reboot', and 'Toggle Help'.

Figure 2-3

Addressing Mode: Static

Hostname: PagingServer (it's just a name)

IP Address: 192.168.100.2

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.100.1 (the same local gateway as MyPBX)

DNS Server: 192.168.1.1 (the same local DNS Server as MyPBX)

After the IP changing, you need to save the configuration and reboot SIP Paging Server by clicking the button on the WEB page.

Please change other CyberData devices' IP address with the same way.

*SIP Paging Server: 192.168.100.2*

*SIP Paging Adapter: 192.168.100.3*

*SIP Paging Amplifier: 192.168.100.4*

*SIP Outdoor Intercom: 192.168.100.5*

*SIP Speaker: 192.168.100.6*

## 2. Register CyberData to extensions of Yeastar IPPBX

After logging on the SIP Paging Server, go to the SIP page in the up-middle side of the page, then filled in the according SIP account information to finish the registration.

Figure 2-4

*Enable SIP Operation: Checked*

*Register with a SIP Server: Checked*

*Primary SIP Server: 192.168.100.100 (The IP address of IPPBX)*

*Primary SIP User ID: 301 (the extension for Paging Server)*

*Primary SIP Auth ID: 301*

*Primary SIP Auth Password: Pincode301*

After configuration, save and reboot are required to take effect.

Please use the same method to finish other CyberData Devices' registration.

*SIP Paging Server: 301*

*SIP Paging Adapter: 302*

*SIP Paging Amplifier: 303*

*SIP Outdoor Intercom: 304*

*SIP Speaker: 305*

### 3. Page to CyberData's extension number

Since you are the administrator of this paging system, you are using the IP Phone to conduct paging action, you can directly paging to any end point by dialing the relevant extension number of CyberData device.

#### 3.1 Page to CyberData SIP Outdoor Intercom

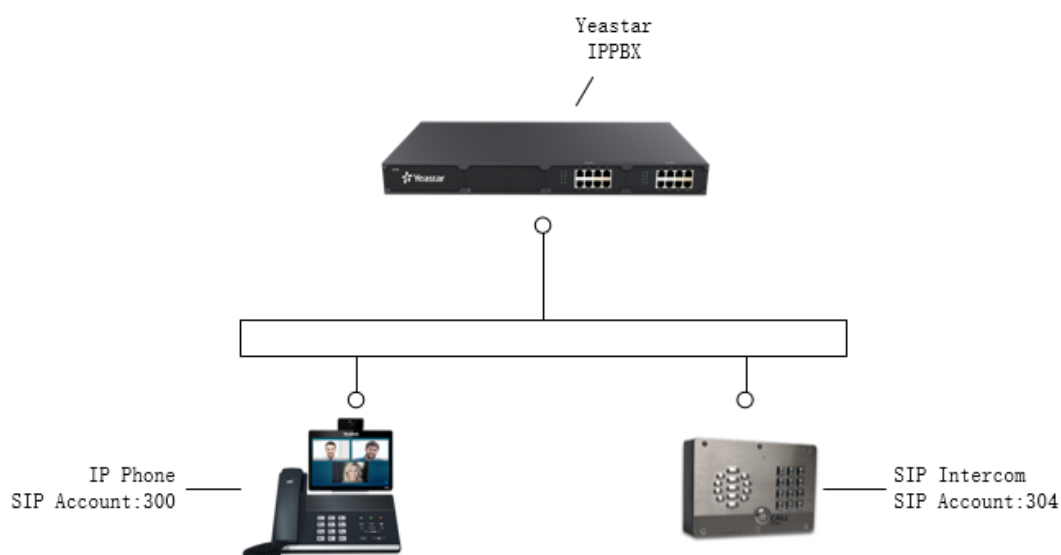


Figure 3-1

You can use IP Phone to dial extension 304 directly, then CyberData SIP Outdoor Intercom will auto answer the call, then IP phone can start paging and communicate with the person who stands in front of the intercom and vice versa, the SIP intercom of CyberData can establish a conversation with IP phone by dialing the extension number of the IP phone 300.



### 3.2 Page CyberData SIP Paging Adapter

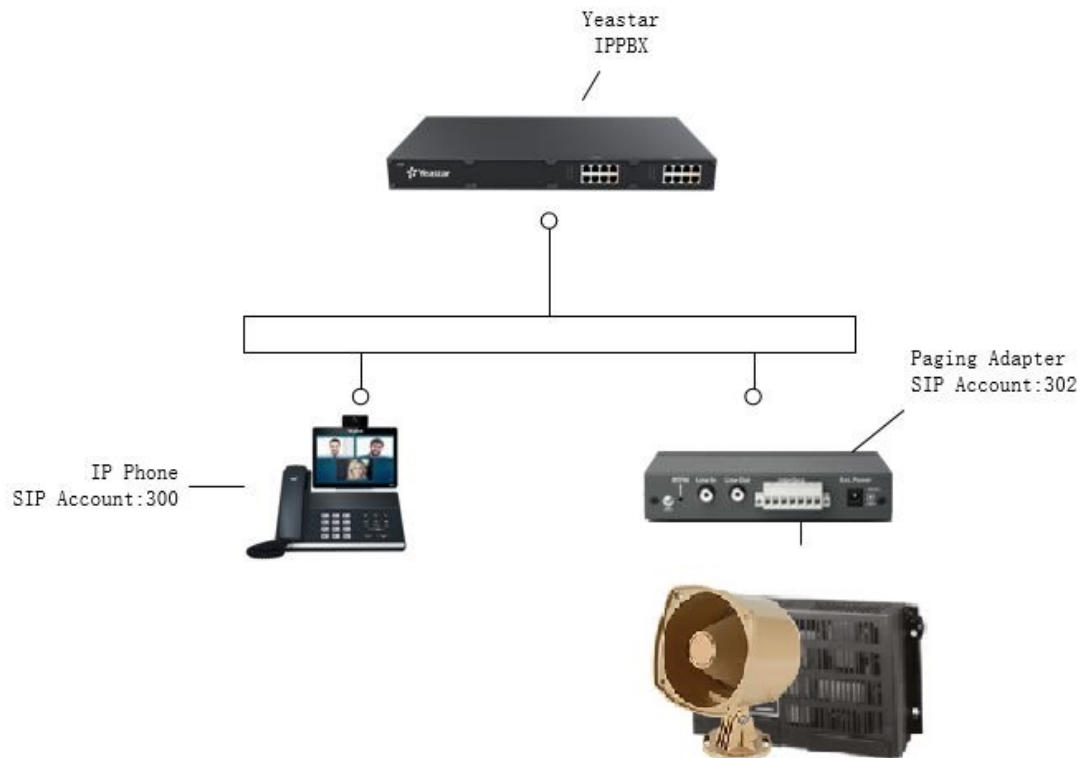


Figure 3-2

Notice: The SIP Paging Adapter has no speaker, but you can connect an Audio Amplifier and speaker to conduct paging.

You can use IP phone 300 to dial the extension number of the paging adapter 302 directly, after hearing a BEEP sound, you can start to page.

### 3.3 Page CyberData SIP Paging Amplifier

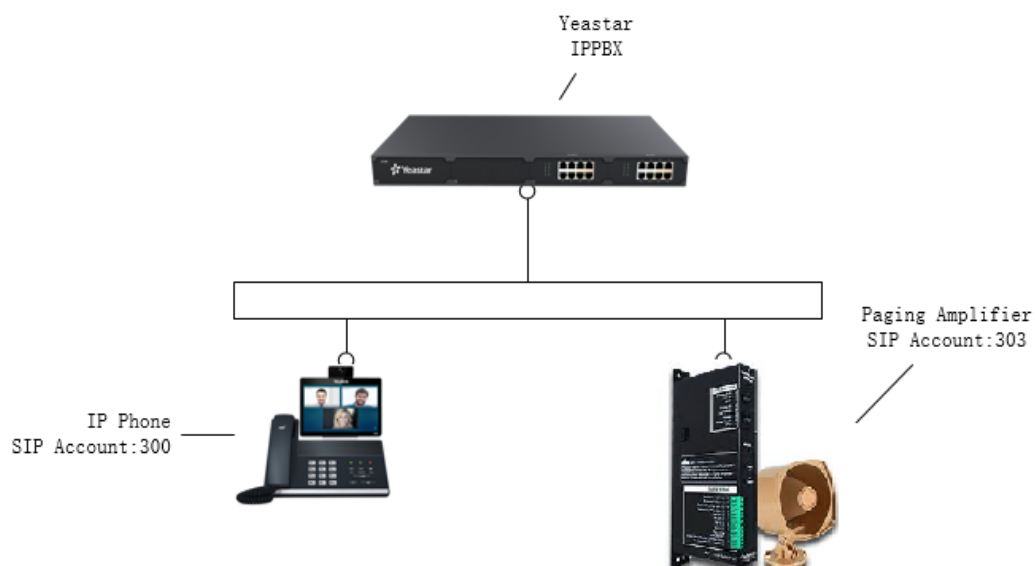


Figure 3-3

The CyberData SIP Paging Amplifier supports to register a SIP account, and finish the paging by directly dial the extension number 303 using IP phone 300.

### 3.4 Page CyberData SIP Speaker

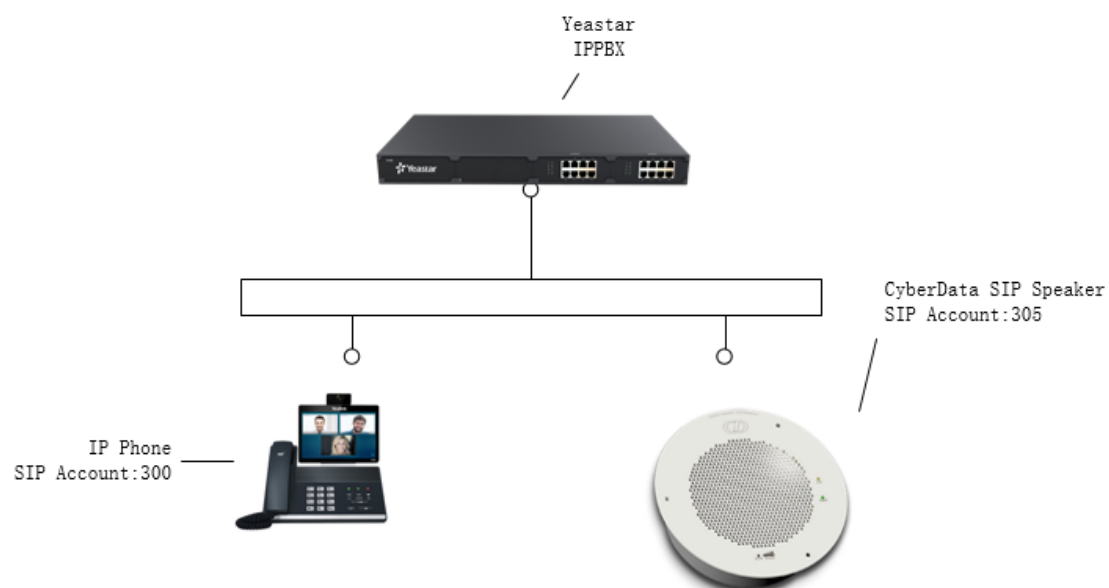


Figure 3-4

CyberData Speaker is able to register as a SIP extension of Yeastar IPPBX. You can directly page it by dialing its SIP account 306 using IP phone 300.

## 4. Page Different Paging Groups

CyberData SIP Paging Server divides the whole paging area into 100 paging groups, different paging groups are distinguished by 2 digits zone number from 00 to 99. With the specific paging zone number selected by broadcaster, the voice is paged to a specific page address in the LAN. For example, in this guide, we setup 2 paging groups 00 and 01 as below.

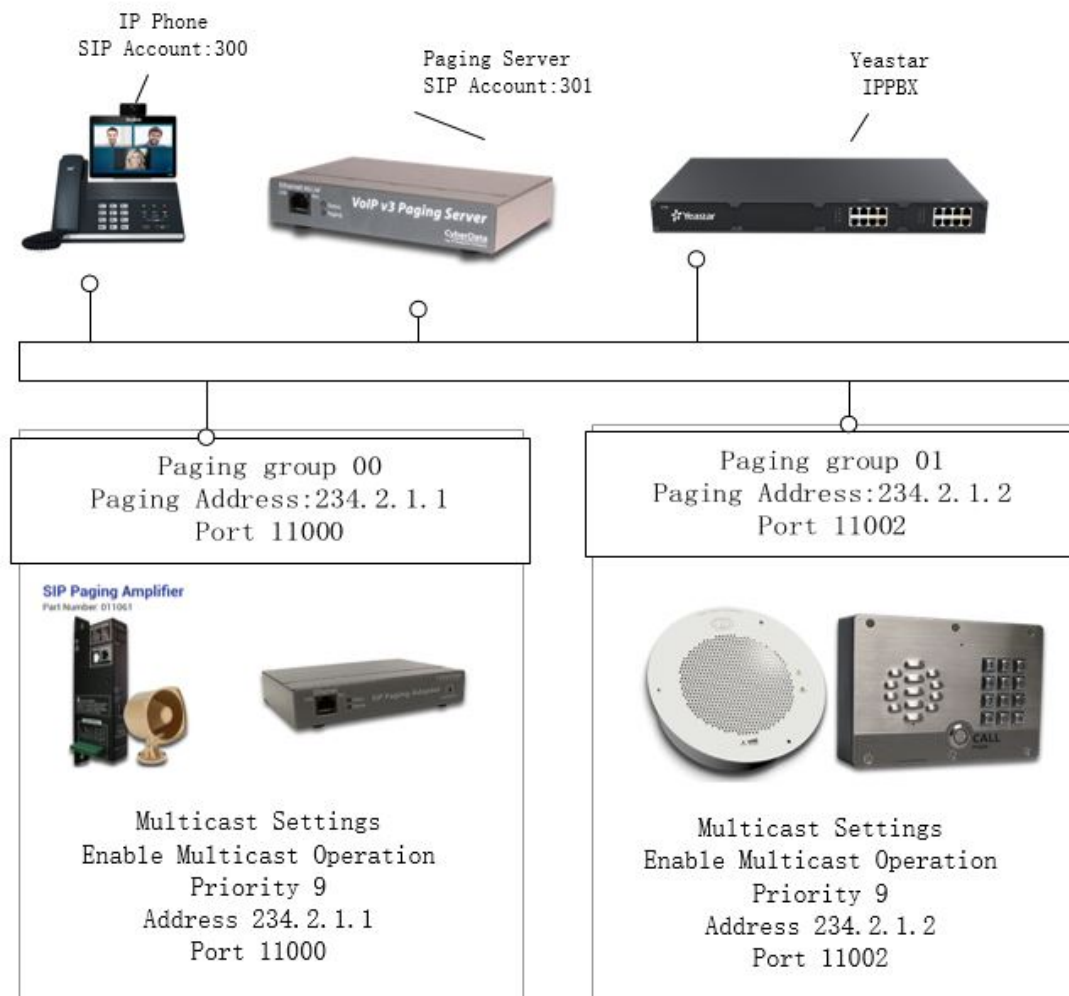


Figure 4-1

## 4.1 Configure the SIP Paging Server

Log on the SIP Paging server (192.168.100.2), go to the page PGROUPS,

Paging Groups							
#	Address	Port	Name	Code	TTL	Lineout	
0	234.2.1.1	2000	PagingGroup00		255	Yes	Edit
1	234.2.1.2	2002	PagingGroup01		255	Yes	Edit
2	234.2.1.3	2004	PagingGroup02		255	Yes	Edit
3	234.2.1.4	2006	PagingGroup03		255	Yes	Edit
4	234.2.1.5	2008	PagingGroup04		255	Yes	Edit
5	234.2.1.6	2010	PagingGroup05		255	Yes	Edit

Figure 4-2

Then edit the group #0 and #1, we take Group #0 as an example,

### Configure PGROUP

---

PGROUP	0	<div>Save Changes</div> <div>Cancel</div>
Address	<input type="text" value="234.2.1.1"/>	
Port	<input type="text" value="11000"/>	
Name	<input type="text" value="PagingGroup00"/>	
Security Code	<input type="text"/>	
TTL	<input type="text" value="255"/>	
Line-out	<input checked="" type="checkbox"/>	

Figure 4-3

Fill in the Address: 234.2.1.1, and the port as 11000 to finish setting up for Group 00.

Please edit the Paging Group #1, and fill in the address 234.2.1.2, and the port as 11002 for setting up Group 01.

## 4.2 Configure the Paging end-point

In the group 00, we assign SIP Paging Amplifier and SIP Paging Adapter as the members. Now we are going to set up the multicast for them.

For example we setup the SIP Paging Adapter. Log on the WEB page and go to the page Multicast.

### Multicast Settings

Enable Multicast Operation: ☐

Priority	Address	Port	Name	Beep	Buffer
9	239.168.3.10	11000	Emergency	<input type="checkbox"/>	<input type="checkbox"/>
8	239.168.3.9	10000	MG8	<input type="checkbox"/>	<input type="checkbox"/>
7	239.168.3.8	9000	MG7	<input type="checkbox"/>	<input type="checkbox"/>
6	239.168.3.7	8000	MG6	<input type="checkbox"/>	<input type="checkbox"/>
5	239.168.3.6	7000	MG5	<input type="checkbox"/>	<input type="checkbox"/>
4	239.168.3.5	6000	MG4	<input type="checkbox"/>	<input type="checkbox"/>
3	239.168.3.4	5000	MG3	<input type="checkbox"/>	<input type="checkbox"/>
2	239.168.3.3	4000	MG2	<input type="checkbox"/>	<input type="checkbox"/>
1	239.168.3.2	3000	MG1	<input type="checkbox"/>	<input type="checkbox"/>
0	239.168.3.1	2000	Background Music	<input type="checkbox"/>	<input type="checkbox"/>

Figure 4-4

Enable the Multicast Operation and fill the Address and Port with the Group 00 information in SIP Paging Server setting.

### Multicast Settings

Enable Multicast Operation: ☒

Priority	Address	Port	Name	Beep	Buffer
9	234.2.1.1	11000	Emergency	<input type="checkbox"/>	
8	239.168.3.9	10000	MG8	<input type="checkbox"/>	<input type="checkbox"/>
7	239.168.3.8	9000	MG7	<input type="checkbox"/>	<input type="checkbox"/>
6	239.168.3.7	8000	MG6	<input type="checkbox"/>	<input type="checkbox"/>
5	239.168.3.6	7000	MG5	<input type="checkbox"/>	<input type="checkbox"/>
4	239.168.3.5	6000	MG4	<input type="checkbox"/>	<input type="checkbox"/>
3	239.168.3.4	5000	MG3	<input type="checkbox"/>	<input type="checkbox"/>
2	239.168.3.3	4000	MG2	<input type="checkbox"/>	<input type="checkbox"/>
1	239.168.3.2	3000	MG1	<input type="checkbox"/>	<input type="checkbox"/>
0	239.168.3.1	2000	Background Music	<input type="checkbox"/>	<input type="checkbox"/>

Figure 4-5

Now, we have set up the SIP Paging Adapter as the member of Group 00. Please configure others CyberData Paging end-points in the same way.

### 4.3 Page different Groups by the zone number

CyberData SIP Paging Server has registered to the extension 301 of Yeastar IPPBX, if you want to page different paging groups (paging zone), you can follow the steps below,

1. Make a call to SIP Paging Server 301 using IP phone 300.
2. The SIP Paging Server will answer the call automatically, and play a prompt "Enter the 2 digits zone number".
3. You can enter 00 to page paging group 00, and enter 01 to page group 01.

## 5. Nightringer Settings

Each CyberData end-point and SIP Paging Server support 2 SIP extensions, primary extension used for paging, and the secondary Nightringer is used to play a ring tone when a SIP call is made to the nightringer extension. The nightringer extension usually is in the same ring group including a SIP Phone in PBX, the ring tone is a notification to users in the area that there is an incoming calls, then users can pick up the SIP phone to answer the calls, once users answered the call, nightringer extension will stop play the ring tone.

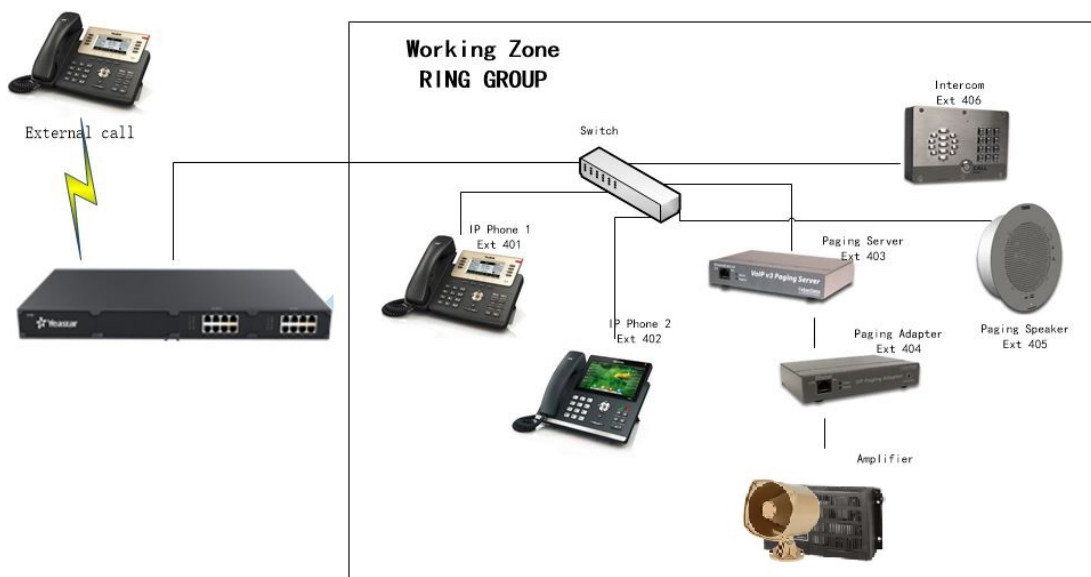


Figure 5-1

Scenario:

At the non-business hour, if there is an incoming call from outside, then PBX will route this call to the ring group which consist of CyberData nightringers and IP Phones registered to the internal extensions of PBX. All the end-points of this ring group will ring, nightringer extensions will play a ring tone to the working area through CyberData devices, to make users in the area notice that there is

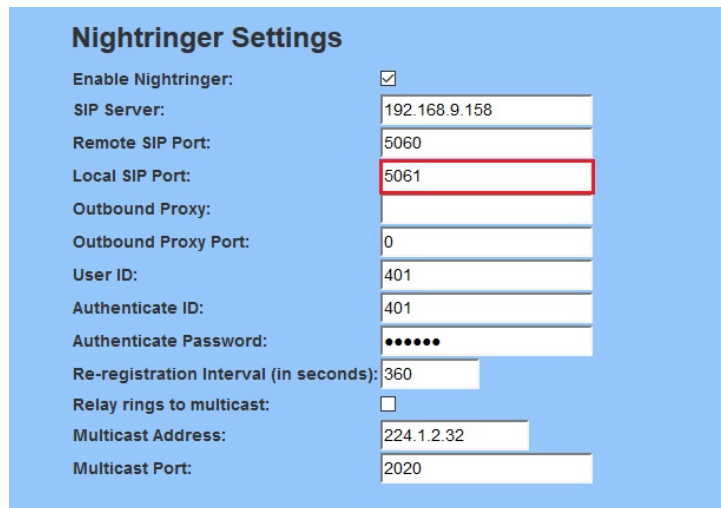


an incoming call, and they can reach the IP Phone and answer the calls.

## 5.1 Register CyberData Nightringer to Yeastar PBX

CyberData support users register two SIP extensions to PBX, the primary extension use the SIP port UDP 5060, and nightringer extension use the SIP Port UDP 5061,

Register CyberData Paging Server's Nightringer,

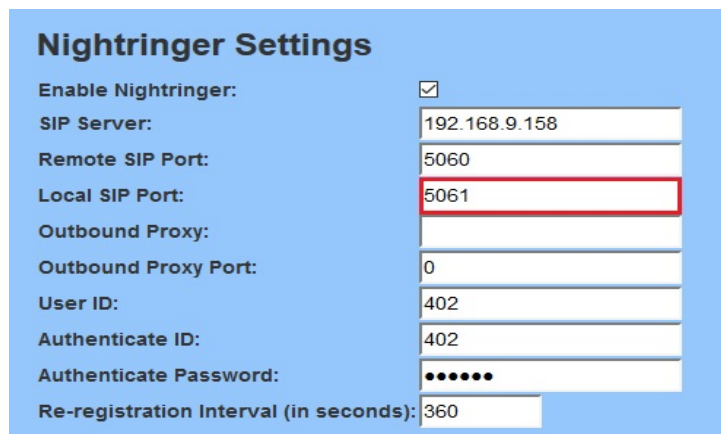


**Nightringer Settings**

Enable Nightringer:	<input checked="" type="checkbox"/>
SIP Server:	192.168.9.158
Remote SIP Port:	5060
Local SIP Port:	5061
Outbound Proxy:	
Outbound Proxy Port:	0
User ID:	401
Authenticate ID:	401
Authenticate Password:	*****
Re-registration Interval (in seconds):	360
Relay rings to multicast:	<input type="checkbox"/>
Multicast Address:	224.1.2.32
Multicast Port:	2020

Figure 5-2

Register CyberData End-points to MyPBX,



**Nightringer Settings**

Enable Nightringer:	<input checked="" type="checkbox"/>
SIP Server:	192.168.9.158
Remote SIP Port:	5060
Local SIP Port:	5061
Outbound Proxy:	
Outbound Proxy Port:	0
User ID:	402
Authenticate ID:	402
Authenticate Password:	*****
Re-registration Interval (in seconds):	360

Figure 5-3

## 5.2 Configure Ring Group in Yeastar PBX

### 1. Create a ring group including all the CyberData Nightringers and IP Phones.

**Add Ring Group**

Number: 6201

Name: 6201

Ring Strategy: Ring All

Seconds to ring each member(s): 60

Members:

Available	Selected
test - Group	401 - 401
1000 - 1000	402 - 402
1001 - 1001	403 - 403
1002 - 1002	404 - 404
1003 - 1003	405 - 405
1004 - 1004	
1005 - 1005	

Failover Destination: Hang up

Save Cancel

Figure 5-4

### 2. Setup a business hour in Yeastar PBX

**Add Time Condition**

Name: Business hour

Time: 08 : 30 -- 17 : 00

Days of Week: ☐ All ☐ Sunday ☒ Monday ☒ Tuesday ☒ Wednesday ☒ Thursday ☒ Friday ☐ Saturday

Advanced Options: ☐

Save Cancel

Figure 5-5

3. Route the incoming calls to Ring group at non-business hours.

Edit Inbound Route ( Routein )

Name ⓘ:Routein

DID Pattern ⓘ:

Caller ID Pattern ⓘ:

Member Trunks ⓘ:

Available

Selected

9.127 (SIP-Peer)

Enable Time Condition ⓘ

( Reset:\*800 )

Status

Time Condition

Destination

Feature Code

Edit

Delete

Business hour

IVR

6500

\*801

[Other Time]

Ring Group

6201

Save

Cancel

Figure 5-6

-END-

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