



RING CENTRAL CONFIGURATION GUIDE: SIP-ENABLED AMPLIFIERS

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RingCentral Configuration Guide: SIP-Enabled Amplifiers

Document #931041D

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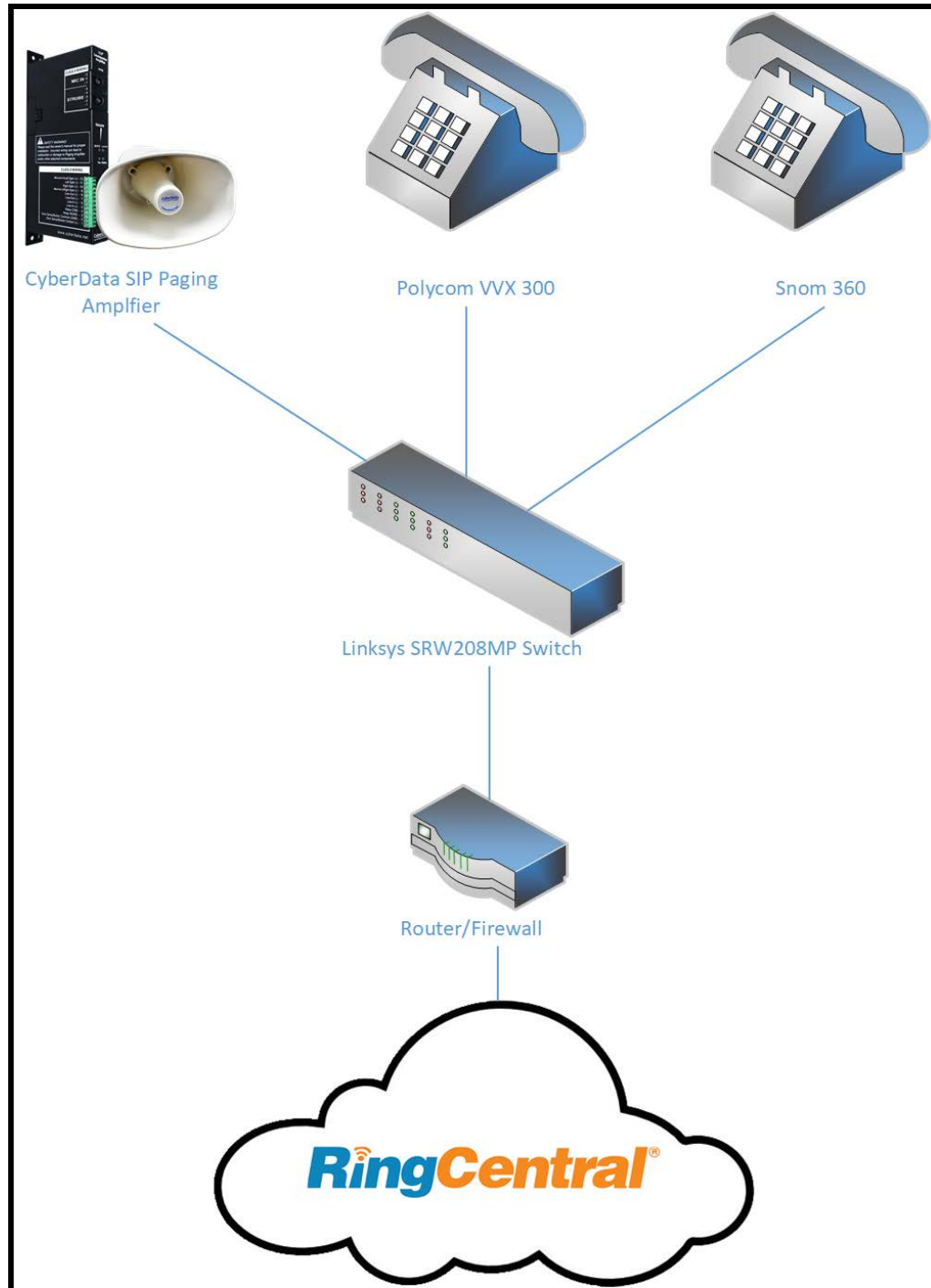
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1.0 Setup Diagram

Figure 1-1. Interoperability Test Infrastructure



2.0 Test Setup Equipment

This section describes the products used for interoperability testing with RingCentral.

Table 2-1. Setup Equipment

EQUIPMENT	MODEL or PART NUMBER	FIRMWARE VERSION
CYBERDATA PAGING/LOUDSPEAKER AMPLIFIER	011324 011404 011405	v12.1.0
POLYCOM	VVX 300	5.2.0.8330
SNOM	360	snom360-SIP 8.4.31
LINKSYS	SRW208MP	1.0.4

3.0 Before You Start

This configuration guide documents the integration process of a CyberData SIP-enabled Paging Amplifier or SIP-enabled Loudspeaker Amplifier.

Network Advisories

RingCentral uses a Fully Qualified Domain Name (FQDN) for the SIP server and Outbound Proxy addresses. The CyberData amplifier needs to perform a DNS A query to resolve the IP address of RingCentral's Outbound Proxy FQDN. It is necessary to ensure the configured DNS server(s) have an A record for the Outbound Proxy address.

In addition, be sure to verify the following ports are available for the amplifier to use:

- UDP 5060-5061, 5090 (SIP)
- UDP 10500 (RTP)

The amplifier will need to traverse the public internet in order to operate with RingCentral in the cloud.

The amplifier's primary extension uses SIP port 5060 to receive SIP messages. The Nightringer extension uses SIP port 5061 to receive SIP messages. Both extensions will send SIP messages to port 5090, the port used by RingCentral's Outbound Proxy.

SIP ports 5060-5061 and RTP port 10500 are the default values on all noted firmware levels.

Alternatively, SIP ports for the primary and Nightringer extension are configurable on the **SIP** page of the web interface.

The RTP port setting on the **SIP** page is used for both extensions.

Product Documentation and Utilities

Before starting, download the Operation and Quick Start guides from the amplifier's product webpage:

<https://www.cyberdata.net/products/011324>

The CyberData Discovery Utility can be used to locate CyberData devices on the local network. It can be downloaded from the following web address:

<https://www.cyberdata.net/pages/discovery>

***Note:** DHCP addressing mode is enabled on default on all noted firmware levels.*

4.0 Configuration Procedure: Auto-Answer Paging

RingCentral Office Editions now provide free native support for CyberData SIP-enabled paging endpoints to enhance your organization's overhead paging solution!

The RingCentral Paging feature delivers real-time broadcasts to desk phones and/or paging devices. CyberData amplifiers can be added to *Paging Only* groups supporting a combination of CyberData paging endpoints and RingCentral Polycom and Cisco desk phones.

CyberData Paging and Loudspeaker Amplifiers are ideal for one-way, auto-answer paging in indoor environments and offer external or digital volume control.

Add a Free Paging Device

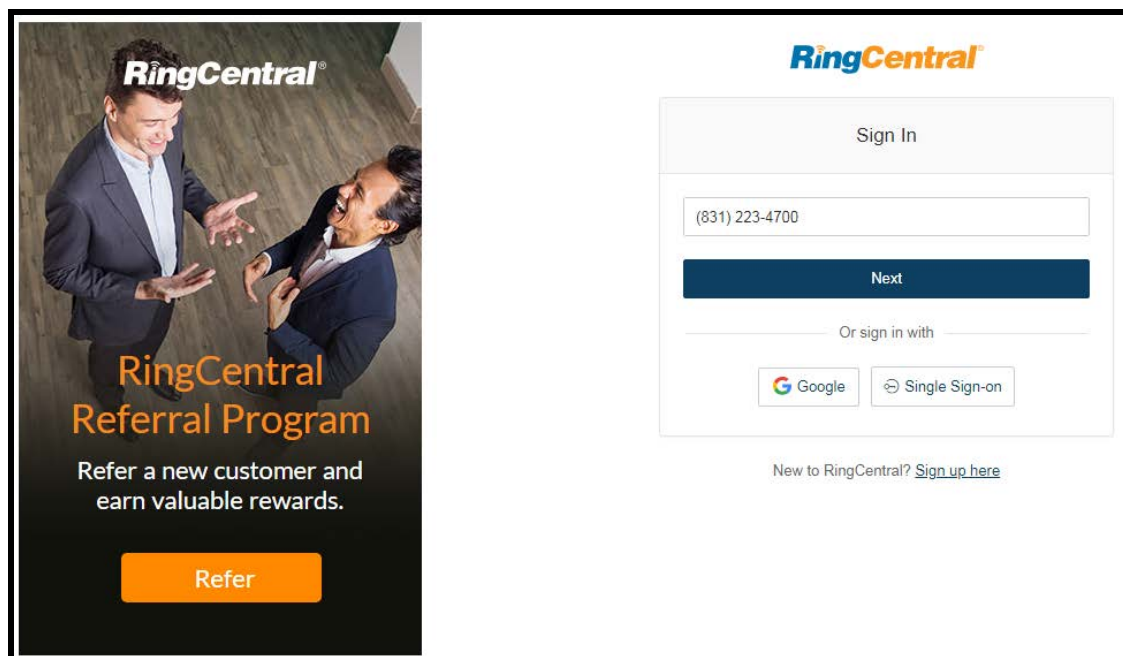
To provision the amplifier's primary extension, add a RingCentral Paging Device to a *Paging Only* group through the RingCentral Admin Portal.

Note: RingCentral Paging Devices cannot originate calls, receive DTMF tones, or send audio back to the caller when used in *Paging Only* groups.

Use the following steps to add a free Paging Device through the RingCentral Admin Portal.

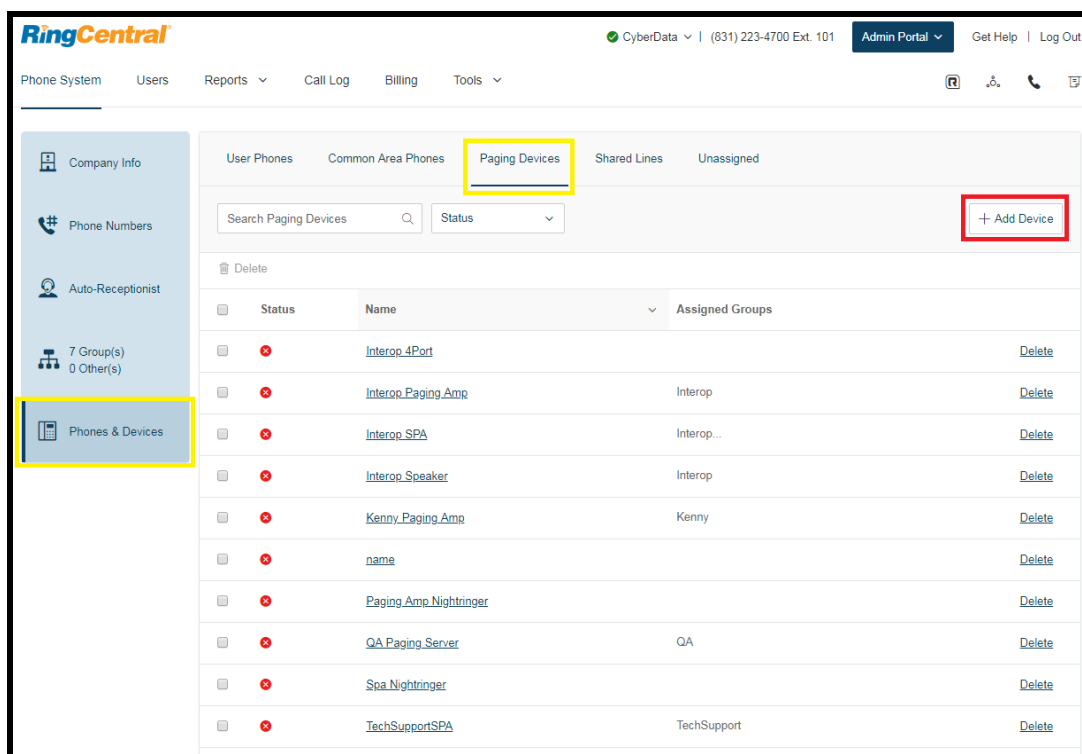
Login to the RingCentral Admin Portal at <https://service.ringcentral.com>.

Figure 4-1. RingCentral Admin Portal Login



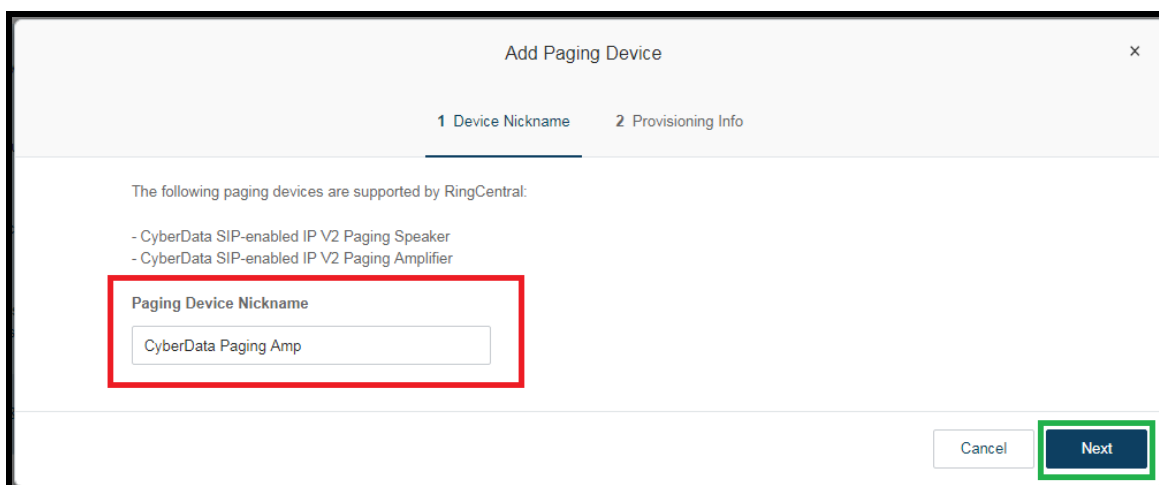
1. From the **Phones & Devices** menu, select **Paging Devices**, and then click **Add Device**.

Figure 4-2. Add Device



2. A popup window labeled **Add Paging Device** will appear. Set the **Paging Device Nickname**, and then click **Next**.

Figure 4-3. Select Device Type



3. A popup window labeled **Generic Paging Device Provisioning** will appear. Use the provisioning information to register the amplifier's primary extension with RingCentral.

Figure 4-4. Paging Device Provisioning Information

Add Paging Device ×

✓ Device Nickname
2 Provisioning Info

Provisioning information for CyberData paging devices

CyberData paging devices need to be programmed with the information given below to make them fully functional when assigned to paging group.

Step 1
Open a web browser session to the CyberData device. Please consult the vendor documentation for details on how to determine the IP address of your device and how to enter the relevant login credentials.

Step 2
Navigate to the Networking page and confirm that the device is configured for DHCP operation.

Step 3
Navigate to the SIP Configuration page and enter the following settings in the appropriate fields and Click "Save". The device may reboot.

SIP Domain	sip.ringcentral.com
Remote SIP port	5060
Local SIP port	5060
Outbound Proxy	sip10.ringcentral.com
Outbound Proxy Port	5090
User Name	18312234700*802872051010
Authorization ID	802872051010
Password	

Done

Note: The values in the left of the table are the name of the CyberData SIP fields as they appear in the amplifier's web interface. The Authenticate Password has been obscured. These values are published only for reference.

- Next, add the new Paging Device to a *Paging Only* group. From the [n] **Groups** menu, select **Paging Only**, then click **New Paging Group**.

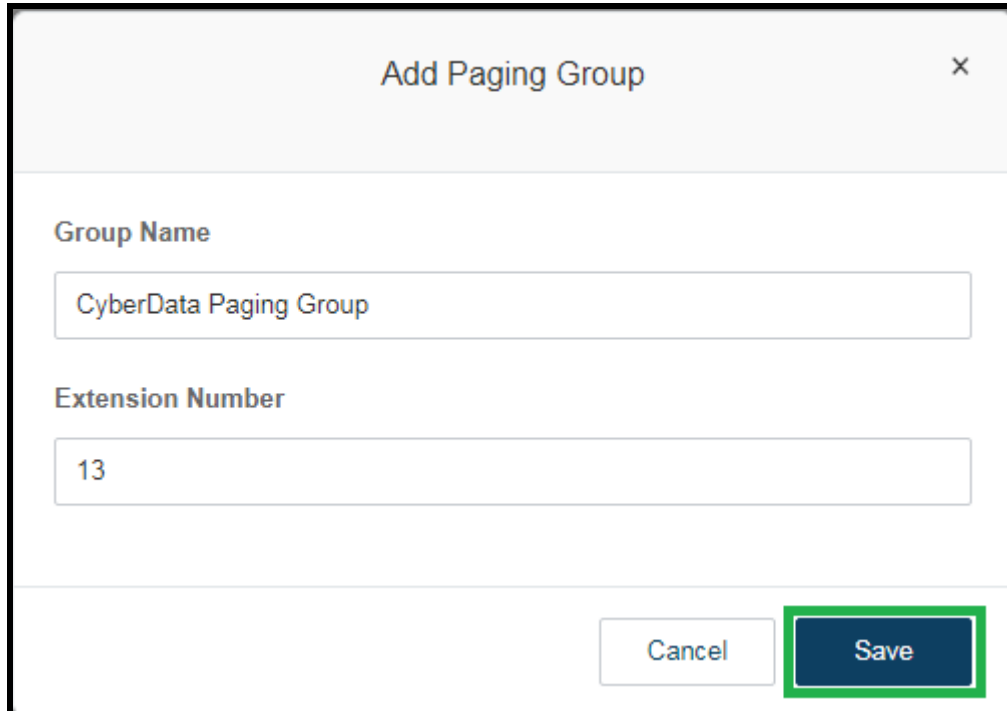
Figure 4-5. Add Group

The screenshot shows the RingCentral Admin Portal interface. The top navigation bar includes 'Call Queues', 'Paging Only' (selected), 'Shared Lines', 'Park Locations', 'Call Monitoring', and 'Others'. The left sidebar contains 'Company Info', 'Phone Numbers', 'Auto-Receptionist', and 'Groups' (highlighted with a red box, showing '7 Group(s)' and '0 Other(s)'). The main content area displays a table of existing paging groups. A '+ New Paging Only' button is located in the top right corner of the main content area.

Status	Name	Devices	Ext.	
✓	Interop	Interop Speaker ...	11	Disable
✓	Interop2	Interop SPA	12	Disable
✓	Kenny	Kenny Paging Amp	3	Disable
✓	QA	QA Paging Server	8	Disable
✓	QA Paging		10	Disable
✓	TechSupport	TechSupportSPA	7	Disable

5. A popup window labeled **Add Paging Group** will appear. Enter an available extension number and name for the *Paging Only* group, then click **Save**.

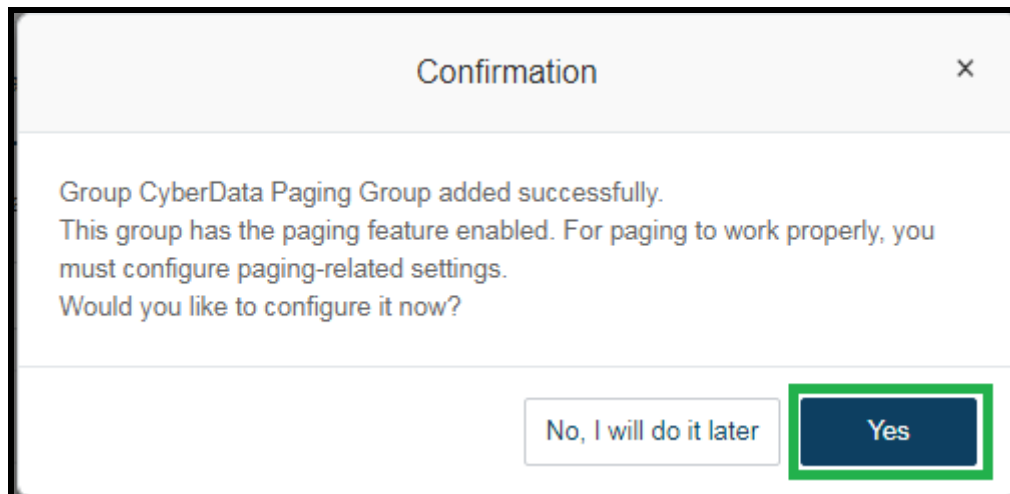
Figure 4-6. Add Paging Group



The screenshot shows a modal window titled "Add Paging Group" with a close button in the top right corner. The window contains two text input fields. The first field, labeled "Group Name", contains the text "CyberData Paging Group". The second field, labeled "Extension Number", contains the text "13". At the bottom right of the window, there are two buttons: "Cancel" and "Save". The "Save" button is highlighted with a green rectangular border.

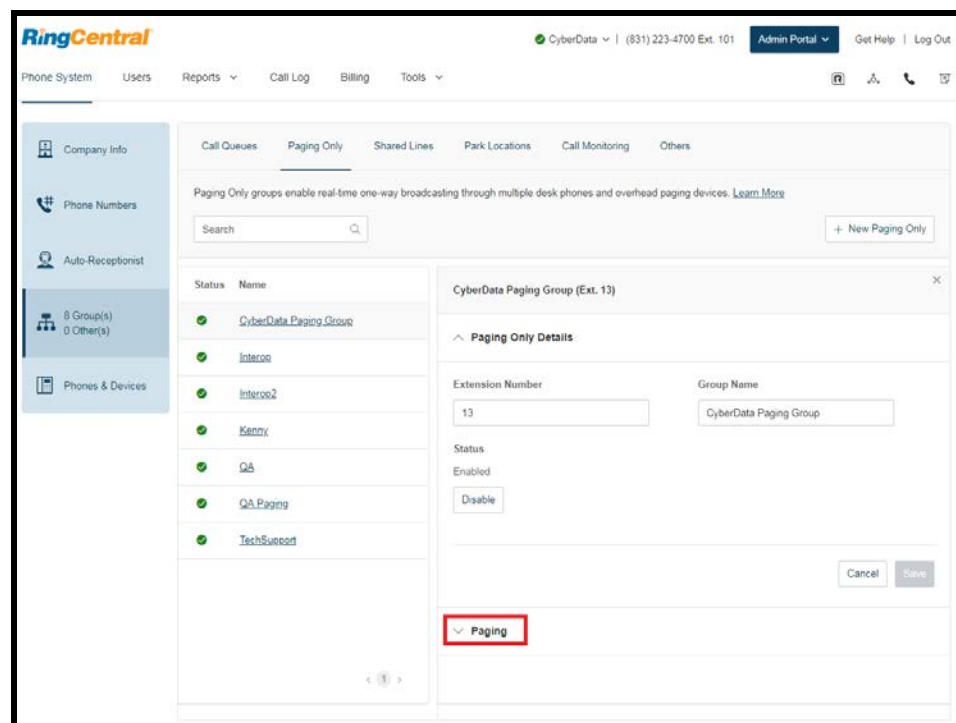
6. A confirmation screen will confirm the paging group has been created. Select **Yes** to configure paging settings.

Figure 4-7. Confirmation



7. Verify the new paging group appears in the **Groups** list. Select the paging group and a menu will appear to the far right of the screen. From this menu, select **Paging**.

Figure 4-8. Group Paging Menu



8. From the **Paging** menu, select **Devices to receive page**, then check the devices to add to the group and press **Save**.

Figure 4-9. Devices to Receive Page

The screenshot displays the 'CyberData Paging Group (Ext. 13)' configuration window. On the left, a sidebar lists various groups, including 'CyberData Paging Group', 'Interop', 'Interop2', 'Kenny', 'QA', 'QA Paging', and 'TechSupport'. The main area is titled 'CyberData Paging Group (Ext. 13)' and contains a 'Paging Only Details' section. Below this, the 'Paging' section is active, showing a 'Devices to Receive Page' tab. A red box highlights this tab. Below the tab, a message states: 'Only-Paging capable phones are displayed in the list. You can select up to 25 devices.' There is a search bar and a dropdown for 'All Phone Types'. Below this, a table lists devices. The first row is 'User Phone' with name 'Christina PolycomVX300' and extension '104'. The second row is 'Paging Device' with name 'CyberData Paging Amp' and extension '-'. This row is highlighted with a green box. Other rows include 'Interop 4Port', 'Interop Paging Amp', 'Interop SPA', 'Interop Speaker', 'Kenny Paging Amp', 'name', 'Paging Amp Nightringer', and 'QA Paging Server'. At the bottom, there is a 'Total: 13' label, a 'Show: 10' dropdown, and a pagination control showing '1' of 2 pages. The 'Save' button is highlighted with a green box.

Phone Type	Phone Name	Ext.
<input type="checkbox"/>	User Phone	Christina PolycomVX300
<input checked="" type="checkbox"/>	Paging Device	CyberData Paging Amp
<input type="checkbox"/>	Paging Device	Interop 4Port
<input type="checkbox"/>	Paging Device	Interop Paging Amp
<input type="checkbox"/>	Paging Device	Interop SPA
<input type="checkbox"/>	Paging Device	Interop Speaker
<input type="checkbox"/>	Paging Device	Kenny Paging Amp
<input type="checkbox"/>	Paging Device	name
<input type="checkbox"/>	Paging Device	Paging Amp Nightringer
<input type="checkbox"/>	Paging Device	QA Paging Server

9. Next, select **Users allowed to page this group** to designate users with paging privileges. Check the box next to the users desired then press **Save**.

Figure 4-10. Users Allowed to Page This Group

^ **Paging**

Devices to Receive Page **Users Allowed to Page this Group**

Search All Departments

Show All | [Show Selected \(3\)](#)

<input type="checkbox"/>	Name	Ext.	Department
<input type="checkbox"/>	Available User2	945	
<input type="checkbox"/>	Cameron Device	934	
<input type="checkbox"/>	Cameron Nightringer	935	
<input type="checkbox"/>	Cameron Snom	932	
<input checked="" type="checkbox"/>	CyberData Corporation	101	
<input type="checkbox"/>	Group User	943	
<input checked="" type="checkbox"/>	Interop PolycomVWX300	104	
<input checked="" type="checkbox"/>	Interop Snom360	103	
<input type="checkbox"/>	Interop Strobe	942	
<input type="checkbox"/>	Kenny phone 2	938	

Total: 23 Show: < 1 2 3 >

10. The page redirects back to the group's paging menu after clicking **Save**. Proceed to **Configure SIP Parameters**.

Configure SIP Parameters

One may feel more comfortable with web-based configuration or provisioning using templates. Both methods are documented in this configuration guide. Be sure to review the amplifier's operation guide for complete information on configuration through the web interface and CyberData's "autoprovisioning" method using templates via HTTP and TFTP protocols.

Table 4-1 CyberData Configuration Settings

Primary SIP Server field	From the Paging Device Provisioning Information popup: SIP Server
Primary SIP User ID field	From the Paging Device Provisioning Information popup: SIP User ID
Primary SIP Auth ID field	From the Paging Device Provisioning Information popup: Authenticate ID
Primary SIP Auth Password field	From the Paging Device Provisioning Information popup: Authenticate Password
Outbound Proxy field	From the Paging Device Provisioning Information popup: Outbound Proxy
Outbound Proxy Port field	From the Paging Device Provisioning Information popup: Outbound Proxy Port
Re-registration Interval (in seconds) field	30
Keep Alive Period field	0
Force Selected Codec checkbox	Yes
Codec dropdown	PCMU (G.711, u-law)

If configuring through the web interface, use the following steps to login to the web interface of the CyberData device.

1. Click **Launch Browser** from the CyberData Discovery Utility or point a browser to the CyberData device's IP address to access the Home Page of the web interface.
2. Enter the default credentials when prompted and click the **Log In** button.

Username: admin

Password: admin

Figure 4-11. Web Interface Login

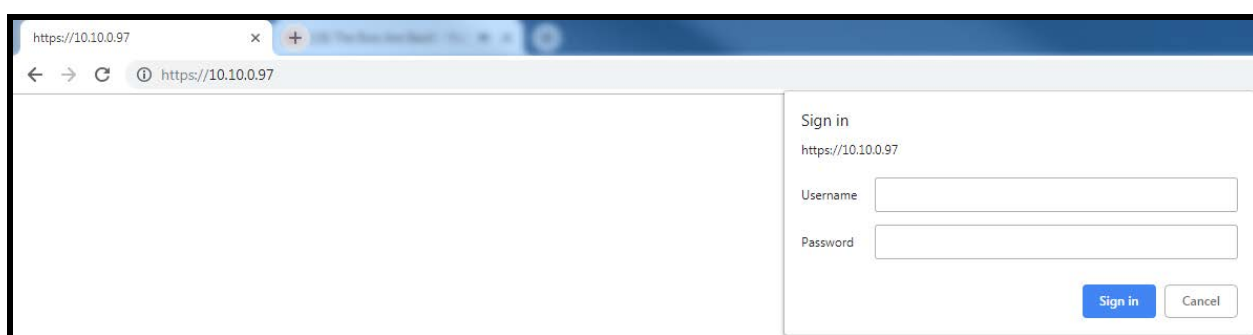


Figure 4-12. Home Page of Amplifier Web Interface

Home Device Network SIP Multicast Sensor Audiofiles Events Autoprov Firmware

CyberData Paging Amplifier

Current Status

Serial Number: 405000417
Mac Address: 00:20:f7:03:a3:2f
Firmware Version: v11.8.0

IP Addressing: DHCP
IP Address: 10.10.0.97
Subnet Mask: 255.0.0.0
Default Gateway: 10.0.0.1
DNS Server 1: 10.0.1.56
DNS Server 2:

SIP Mode: Enabled
Multicast Mode: Disabled
Event Reporting: Disabled
Nightringer: Disabled

Primary SIP Server: Registered
Backup Server 1: Not registered
Backup Server 2: Not registered
Nightringer Server: Not registered

Admin Settings

Username: admin
Password:
Confirm Password:

Save Reboot Toggle Help

Import Settings

Choose File No file chosen

Import Config

Export Settings

Export Config

3. On the Home Page, click **SIP** on the top toolbar of the screen to access the SIP Configuration page.

***Note:** The firmware version and registration status for the primary extension and Nightringer extensions appear here.*

4. Enter the provisioning information from the [Generic Paging Device Provisioning](#) popup window.

***Note:** The Local SIP Port is set to 5060 on default and is used by the amplifier as its source port for the auto-answer primary extension configured on this page.*

5. Set the *Re-registration Interval (in seconds)* to **30 seconds**.
6. Set the Keep Alive Period to **0**.
7. Enable Force Codec Selection and use **PCMU**.

8. Click **Save** and **Reboot** to store changes.

Figure 4-13. SIP Configuration

CyberData Paging Amplifier

SIP Settings

Enable SIP operation: ☒

SIP Transport Protocol: UDP ▾

Register with a SIP Server: ☒

Use Cisco SRST: ☐

Primary SIP Server:

Primary SIP User ID:

Primary SIP Auth ID:

Primary SIP Auth Password:

Backup SIP Server 1:

Backup SIP User ID 1:

Backup SIP Auth ID 1:

Backup SIP Auth Password 1:

Backup SIP Server 2:

Backup SIP User ID 2:

Backup SIP Auth ID 2:

Backup SIP Auth Password 2:

Remote SIP Port:

Local SIP Port:

Outbound Proxy:

Outbound Proxy Port:

Disable rport Discovery: ☐

Buffer SIP Calls: ☐

Re-registration Interval (in seconds):

Unregister on Boot: ☐

Keep Alive Period:

Nightringer Settings

Enable Nightringer: ☐

SIP Server:

Remote SIP Port:

Local SIP Port:

Outbound Proxy:

Outbound Proxy Port:

User ID:

Authenticate ID:

Authenticate Password:

Re-registration Interval (in seconds):

RTP Settings

RTP Port (even):

Jitter Buffer:

Call Disconnection

Terminate Call after delay:

Codec Selection

Force Selected Codec: ☒

Codec: PCMU (G.711, u-law) ▾

Save
Reboot
Toggle Help

Autoprovisioning

If autoprovisioning the amplifier, use the SIP Settings in the autoprovisioning template to register the amplifier with RingCentral.

An autoprovisioning template is provided in the respective firmware folder available on the **Downloads** tab of the product webpage here:

<https://www.cyberdata.net/products/011324>

Be sure to use the autoprovisioning template for the firmware version running on the amplifier. The firmware version can be verified on the [Home page of the web interface](#).

Refer to the Operations Guide for instructions on autoprovisioning configuration.

Figure 4-14. Autoprovisioning Template Example – SIP Settings

```
<SIPSettings>
  <EnableSIPOperation>Yes</EnableSIPOperation>
  <SIPServer>sip.ringcentral.com</SIPServer>
  <BackupSIPServer1></BackupSIPServer1>
  <BackupSIPServer2></BackupSIPServer2>
  <UseCiscoSRST>No</UseCiscoSRST>
  <RemoteSIPPort>5060</RemoteSIPPort>
  <LocalSIPPort>5060</LocalSIPPort>
  <OutboundProxy>sip20.ringcentral.com</OutboundProxy>
  <OutboundProxyPort>5090</OutboundProxyPort>
  <SIPUserID>18312234700*132261969011</SIPUserID>
  <SIPAuthID>132261969011</SIPAuthID>
  <SIPAuthPassword>*****</SIPAuthPassword>
  <SIPRegistrationTimeout>30</SIPRegistrationTimeout>
  <SIPUnregisterOnBoot>No</SIPUnregisterOnBoot>
  <DisableRportDiscovery>No</DisableRportDiscovery>
  <CallTimeout>0</CallTimeout>
  <RTPPort>10500</RTPPort>
</SIPSettings>
```

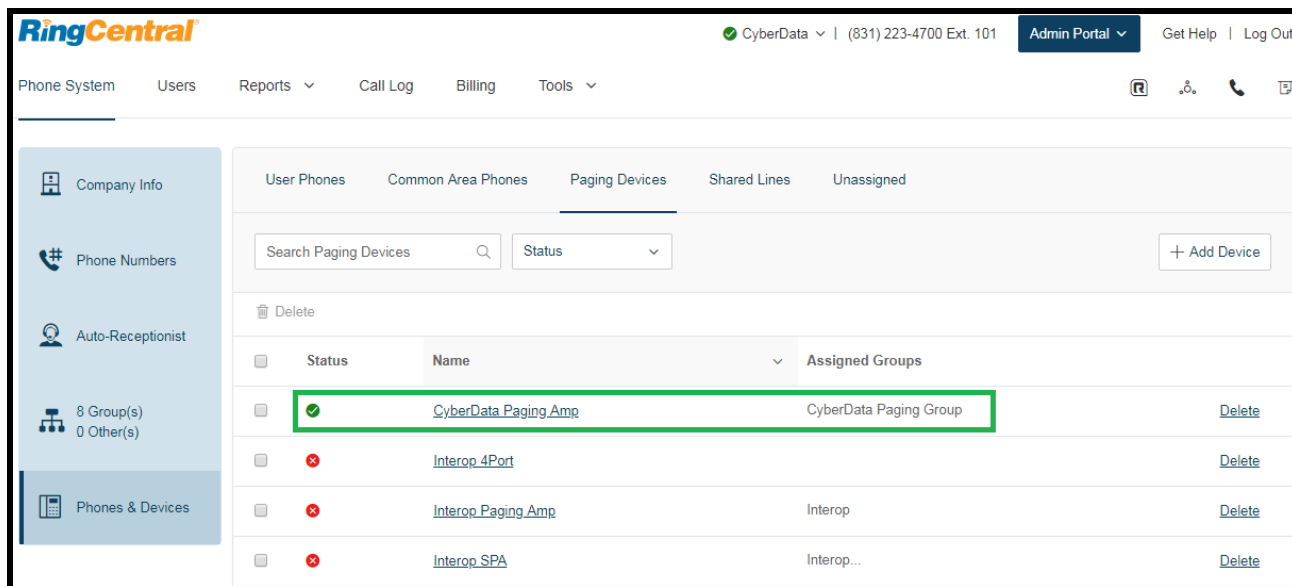
***Note:** These example values are published only for reference. The SIPAuthPassword value should be the actual value from the [Generic Paging Device Provisioning](#) popup window.*

Verify the Amplifier is Registered

After the device has rebooted and initialized, refresh the [Home page of the web interface](#). The device should show as **[Registered with SIP Server]** in green text on the bottom of the Home Page of the web interface.

Additionally, the registration status may be verified with RingCentral through the admin portal. From the **Phones & Devices** menu, select the Paging Device tab then find the device just created for the amplifier. The status should show as a green checkmark in the **Status** column.

Figure 4-15. Device Details – Status



Make a Test Call

Once the device has registered with RingCentral, use any phone associated with an [Allowed User](#) to dial the extension of the paging group.

Refer to this [RingCentral Knowledge article 5925](#) for instructions on paging a group from an IP phone.

5.0 Configuration Procedure: Voice-Prompted Paging

When an installation requires more flexibility than auto-answer live paging, the amplifier's primary extension can be provisioned as an IP phone associated with a user extension. Provisioning as a Paging Device does not allow the caller to receive audio from the amplifier to hear voice prompts from the amplifier's paging menu or enter DTMF digits for stored message selections.

Provision the amplifier's extension as an IP phone to enable the following features:

- Playing up to 9 configurable stored messages
- Security code

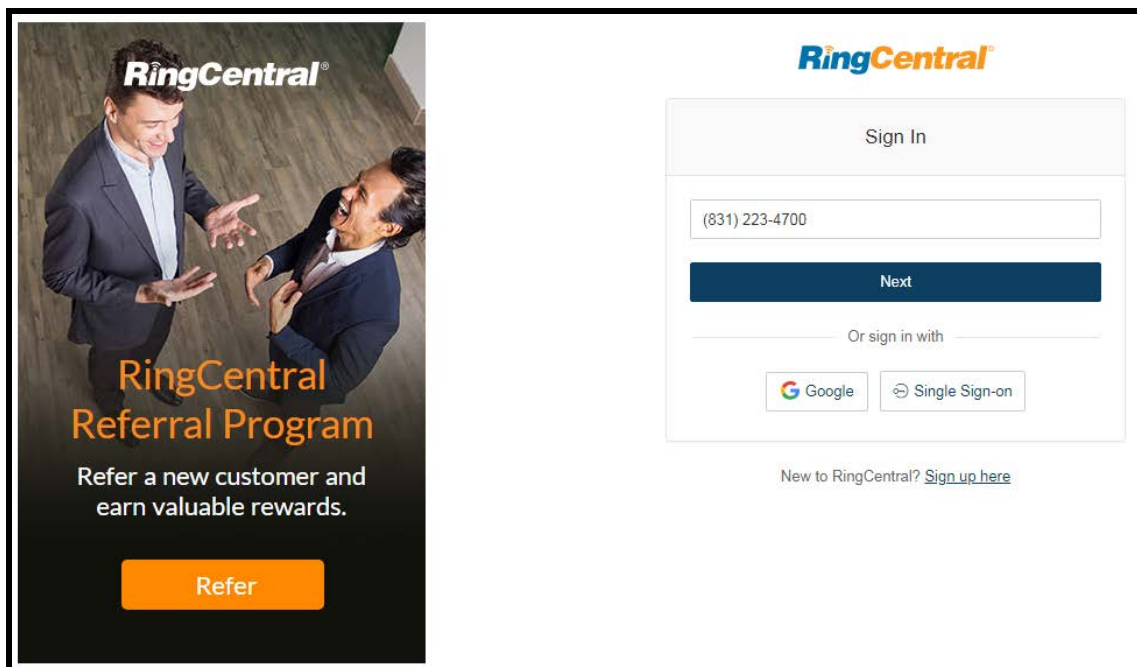
Add an IP Phone

This section describes the process of creating a user, provisioning an IP phone, and registering the primary extension that will be used for paging with RingCentral. First, a RingCentral user must be created for the paging amplifier.

Use the following steps to create a user and provision an IP phone for the primary extension through the RingCentral Admin Portal.

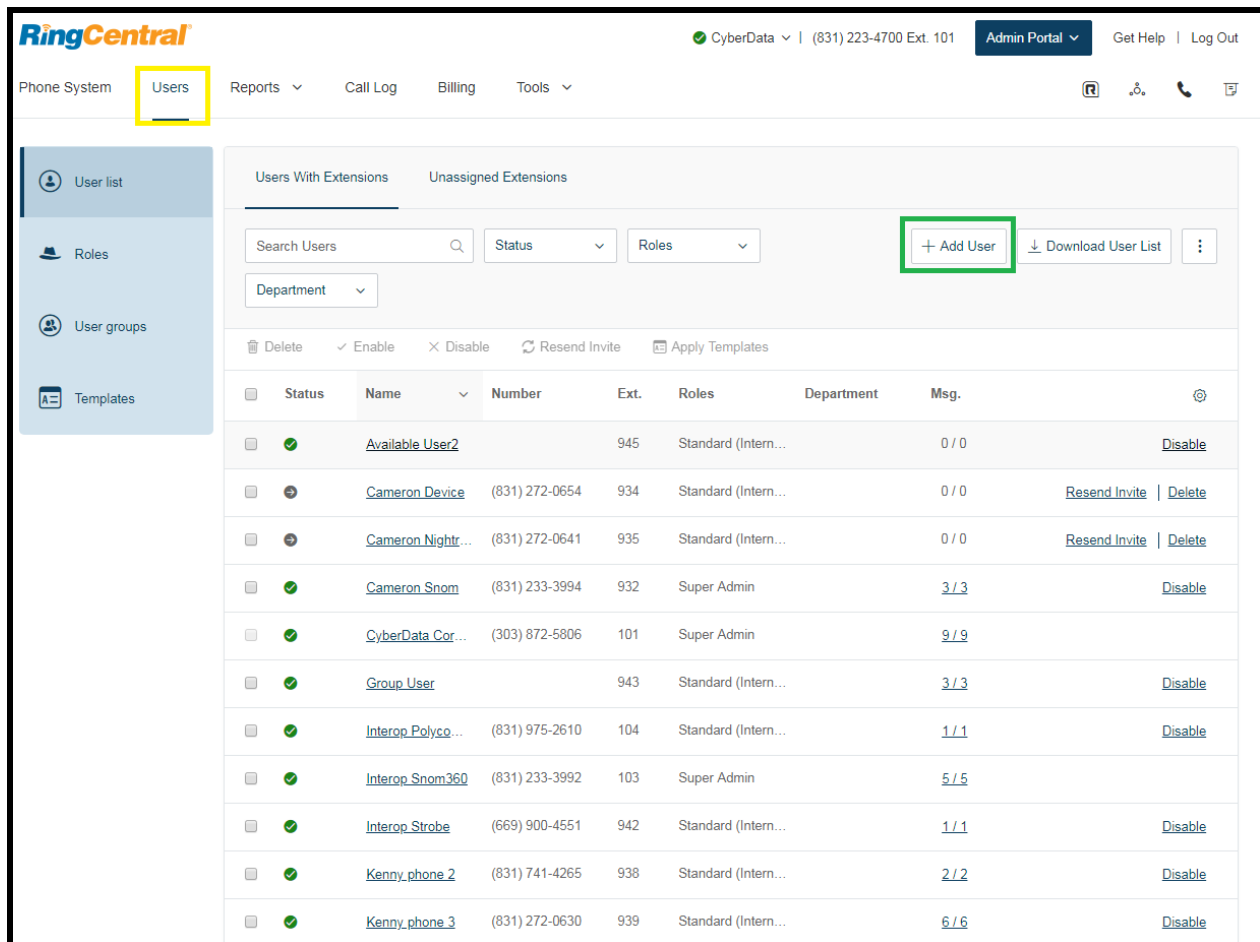
1. Login to the RingCentral Admin Portal at <https://service.ringcentral.com>.

Figure 5-1. RingCentral Admin Portal Login



2. Select **Users**, and then press the **Add User** button.

Figure 5-2. Add User Button



The screenshot shows the RingCentral Admin Portal interface. The top navigation bar includes 'Phone System', 'Users' (highlighted with a yellow box), 'Reports', 'Call Log', 'Billing', and 'Tools'. The left sidebar contains 'User list' (highlighted with a blue box), 'Roles', 'User groups', and 'Templates'. The main content area is titled 'Users With Extensions' and 'Unassigned Extensions'. It features a search bar, filters for 'Status' and 'Roles', and a 'Department' dropdown. A green box highlights the '+ Add User' button. Below the filters are action buttons: 'Delete', 'Enable', 'Disable', 'Resend Invite', and 'Apply Templates'. The table lists users with columns for 'Status', 'Name', 'Number', 'Ext.', 'Roles', 'Department', and 'Msg.'. The table includes several users, including 'Available User2', 'Cameron Device', 'Cameron Nightr...', 'Cameron Snom', 'CyberData Cor...', 'Group User', 'Interop Polyc...', 'Interop Snom360', 'Interop Strobe', 'Kenny_phone_2', and 'Kenny_phone_3'.

Status	Name	Number	Ext.	Roles	Department	Msg.	
<input type="checkbox"/>	Available User2		945	Standard (Intern...		0 / 0	Disable
<input type="checkbox"/>	Cameron Device	(831) 272-0654	934	Standard (Intern...		0 / 0	Resend Invite Delete
<input type="checkbox"/>	Cameron Nightr...	(831) 272-0641	935	Standard (Intern...		0 / 0	Resend Invite Delete
<input type="checkbox"/>	Cameron Snom	(831) 233-3994	932	Super Admin		3 / 3	Disable
<input type="checkbox"/>	CyberData Cor...	(303) 872-5806	101	Super Admin		9 / 9	
<input type="checkbox"/>	Group User		943	Standard (Intern...		3 / 3	Disable
<input type="checkbox"/>	Interop Polyc...	(831) 975-2610	104	Standard (Intern...		1 / 1	Disable
<input type="checkbox"/>	Interop Snom360	(831) 233-3992	103	Super Admin		5 / 5	
<input type="checkbox"/>	Interop Strobe	(669) 900-4551	942	Standard (Intern...		1 / 1	Disable
<input type="checkbox"/>	Kenny_phone_2	(831) 741-4265	938	Standard (Intern...		2 / 2	Disable
<input type="checkbox"/>	Kenny_phone_3	(831) 272-0630	939	Standard (Intern...		6 / 6	Disable

3. A popup window labeled **Add User** will appear. Select a location then press **Next**.

Figure 5-3. Add User Popup

The screenshot shows a modal window titled "Add Users" with a close button (X) in the top right corner. Below the title is a progress bar with four steps: "1 Location", "2 Add Users", "3 Shipping Address", and "4 Confirmation". The "1 Location" step is currently active and underlined. The main content area is titled "Select a Location" and contains two radio buttons: "Domestic" (which is selected) and "International". At the bottom right of the modal, there are two buttons: "Cancel" and "Next". The "Next" button is highlighted with a green rectangular border.

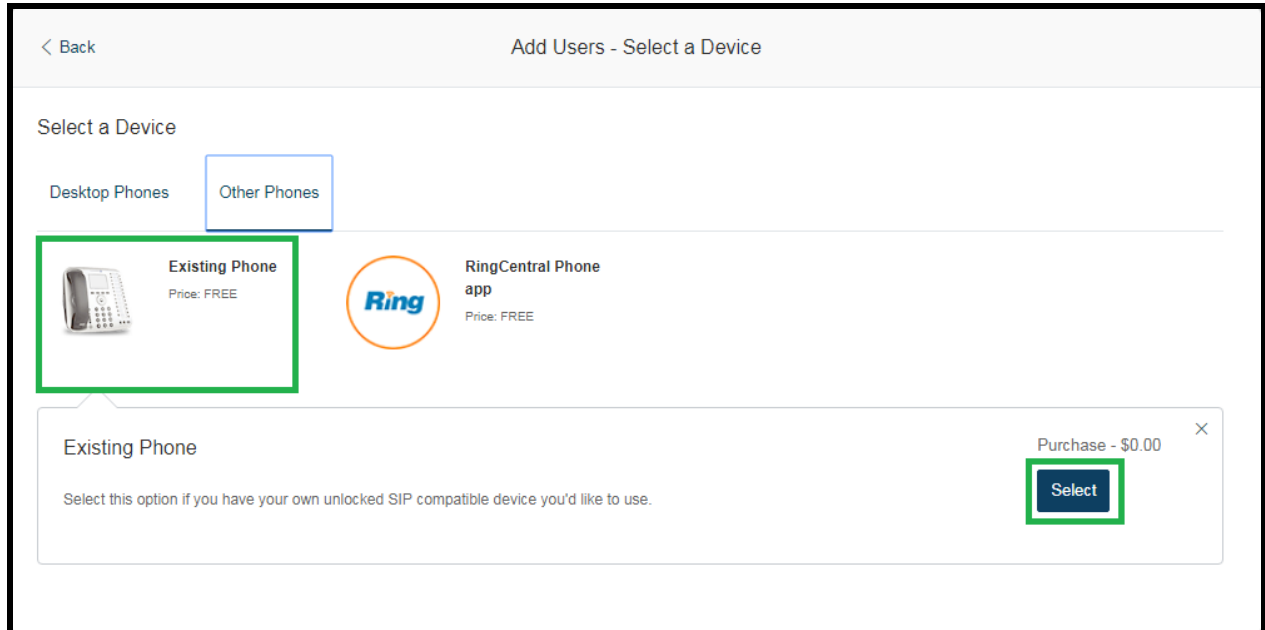
4. In the subsection **Add Users with Phones**, select the number of users, state, area code, and device.

Figure 5-4. Pick a Phone Number

The screenshot shows the same "Add Users" modal window, but now at step "2 Add Users". The progress bar shows "1 Location" as completed with a green checkmark, and "2 Add Users" as the current step. Below the progress bar are two tabs: "Add Users With Phones" (which is selected and underlined) and "Add Users Without Phones". The main content area is titled "Account Status" and displays the following information: "Your plan: 20 - 99 Users", "Used: 25", "Available: 0", and "Available for purchase: 74". Below this is a note: "You can add multiple users at a time if they will all use the same area code. [Learn More](#)". At the bottom of the main content area, there is a form with four fields: "Number of Users" (containing the value "1"), "State" (a dropdown menu showing "Select"), "Area Code" (a dropdown menu showing "Select"), and "Device" (a dropdown menu showing "Select a Device..."). The "Number of Users", "State", and "Area Code" fields are grouped together and highlighted with a yellow rectangular border. The "Device" field is highlighted with a green rectangular border. To the right of these fields is a grey "Add" button. At the bottom right of the modal, there are two buttons: "Back" and "Next".

5. A prompt will appear to select a phone type. Choose **Other Phones**, and then make sure **Existing Phone** is selected. Press **Select**.

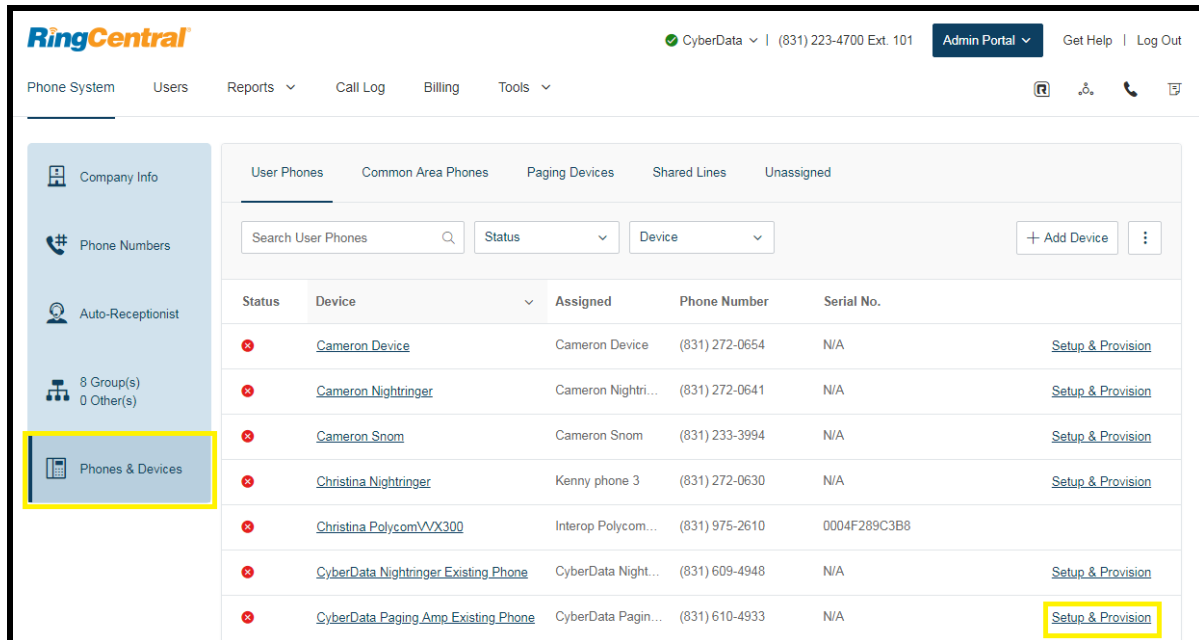
Figure 5-5. Select Phone Type



6. The next step leads to a six-step ordering process to set up a RingCentral DigitalLine. Click the **Select** button to choose an **Existing Phone** and follow the steps in the ordering window to complete the process.

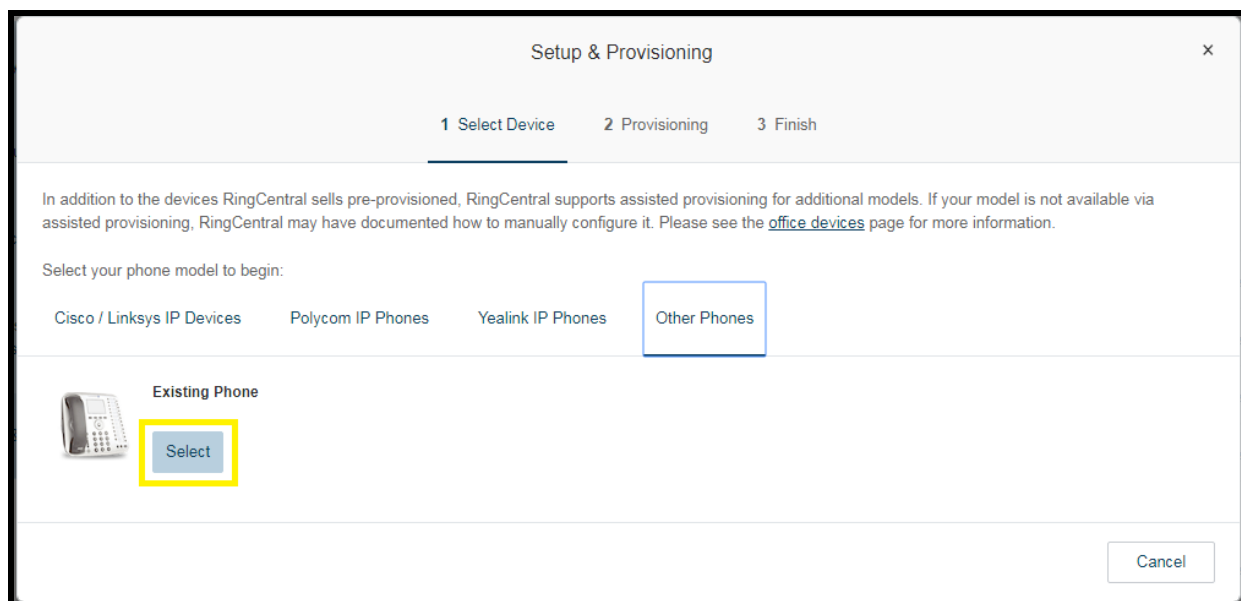
- From the **Phones & Devices** menu, select **User Phones** and select the user phone designated for the paging amplifier. Click **Setup and Provision**.

Figure 5-6. Setup and Provision



- A popup window labeled **Setup & Provisioning** will appear. Select **Other Phones** and click **Select**.

Figure 5-7. Setup & Provisioning - Other Phones



9. A popup window labeled **Setup & Provisioning** will appear. The information in this popup will be used to register the device with RingCentral.

Figure 5-8. IP Phone Provisioning Information

Field	Value
SIP Domain	sip.ringcentral.com:5060
Outbound Proxy	SIP10.ringcentral.com:5090
User Name	18316104933
Password	[obscured]
Authorization ID	802872093010

Note: The Password has been obscured. These values are published only for reference.

SIP Fields Table

Use the following table to determine how the RingCentral SIP field values above correlate to the CyberData SIP field values.

Table 5-1. CyberData Configuration Settings

Primary SIP Server field	From the IP Phone Provisioning Information popup: SIP Server
Primary SIP User ID field	From the IP Phone Provisioning Information popup: SIP User ID
Primary SIP Auth ID field	From the IP Phone Provisioning Information popup: Authenticate ID
Primary SIP Auth Password field	From the IP Phone Provisioning Information popup: Authenticate Password
Outbound Proxy field	From the IP Phone Provisioning Information popup: Outbound Proxy
Outbound Proxy Port field	From the IP Phone Provisioning Information popup: Outbound Proxy Port
Re-registration Interval (in seconds) field	30
Keep Alive Period field	0
Force Selected Codec checkbox	Yes
Codec dropdown	PCMU (G.711, u-law)

Configure SIP Parameters

If configuring through the web interface, use the following steps to login to the web interface of the paging amplifier and register the primary extension with RingCentral.

1. Click **Launch Browser** from the CyberData Discovery Utility or point a browser to the CyberData device's IP address to access the Home Page of the web interface.
2. Enter the web login credentials when prompted and click the **Log In** button.
3. On the Home Page, click **SIP** on the top toolbar of the screen to access the SIP page.
4. Enter the provisioning information from the [Assisted Generic IP Phone Provisioning](#) popup window. Use [Table 6-1](#) to enter RingCentral SIP values into the proper CyberData SIP fields.

***Note:** The Local SIP Port is set to 5060 on default and is used by the amplifier as its source port for the primary extension configured on this page.*

5. Set the *Re-registration Interval (in seconds)* to **30 seconds**.
6. Set the *Keep Alive Period* to **0**.
7. Enable *Force Codec Selection* and use **PCMU**.
8. Click **Save** and **Reboot** to store changes.

Figure 5-9. SIP Configuration

CyberData Paging Amplifier

SIP Settings

Enable SIP operation: ☒

SIP Transport Protocol:

Register with a SIP Server: ☒

Use Cisco SRST: ☐

Primary SIP Server:

Primary SIP User ID:

Primary SIP Auth ID:

Primary SIP Auth Password:

Backup SIP Server 1:

Backup SIP User ID 1:

Backup SIP Auth ID 1:

Backup SIP Auth Password 1:

Backup SIP Server 2:

Backup SIP User ID 2:

Backup SIP Auth ID 2:

Backup SIP Auth Password 2:

Remote SIP Port:

Local SIP Port:

Outbound Proxy:

Outbound Proxy Port:

Disable rport Discovery: ☐

Buffer SIP Calls: ☐

Re-registration Interval (in seconds):

Unregister on Boot: ☐

Keep Alive Period:

Nightringer Settings

Enable Nightringer: ☐

SIP Server:

Remote SIP Port:

Local SIP Port:

Outbound Proxy:

Outbound Proxy Port:

User ID:

Authenticate ID:

Authenticate Password:

Re-registration Interval (in seconds):

RTP Settings

RTP Port (even):

Jitter Buffer:

Call Disconnection

Terminate Call after delay:

Codec Selection

Force Selected Codec: ☒

Codec:

Save Reboot Toggle Help

Autoprovisioning

If autoprovisioning the paging amplifier, use the SIP Settings in the autoprovisioning template to register the primary extension with RingCentral.

Figure 5-10. Autoprovisioning Template Example – SIP Settings

```
<SIPSettings>
  <EnableSIPOperation>Yes</EnableSIPOperation>
  <SIPServer>sip.ringcentral.com</SIPServer>
  <RemoteSIPPort>5060</RemoteSIPPort>
  <BackupSIPServer1></BackupSIPServer1>
  <BackupSIPServer2></BackupSIPServer2>
  <LocalSIPPort>5060</LocalSIPPort>
  <OutboundProxy>sip20.ringcentral.com</OutboundProxy>
  <OutboundProxyPort>5090</OutboundProxyPort>
  <SIPUserID>18312333993</SIPUserID>
  <SIPAuthID>17422862010</SIPAuthID>
  <SIPAuthPassword>*****</SIPAuthPassword>
  <SIPRegistrationTimeout>30</SIPRegistrationTimeout>
  <SIPUnregisterOnBoot>No</SIPUnregisterOnBoot>
  <SIPRegisterOnBoot>Yes</SIPRegisterOnBoot>
  <BufferSIPCalls>No</BufferSIPCalls>
  <RTPPort>10500</RTPPort>
  <CallTimeout>0</CallTimeout>
  <UseCiscoSRST>No</UseCiscoSRST>
  <DisableRportDiscovery>No</DisableRportDiscovery>
  <KeepAlive>0</KeepAlive>
</SIPSettings>
```

Note: These example values are published only for reference. The SIPAuthPassword value should be the actual value from the [Assisted Generic IP Phone Provisioning](#) popup window.

Verify the Primary Extension Is Registered

After the amplifier has rebooted and initialized to store changes, refresh the Home page of the web interface. The device should show as **[Registered with SIP Server]** in green text on the bottom of the Home Page of the web interface.

Additionally, the registration status can be verified with RingCentral through the Admin Portal. From the **Phones & Devices** menu, select **User Phones** and the IP Phone just created for the amplifier. The status should show as “online” in the **Phone Details**.

Figure 5-11. Phone Details – Status

The screenshot shows the RingCentral Admin Portal interface. The left sidebar contains navigation options: Company Info, Phone Numbers, Auto-Receptionist, 8 Group(s) 0 Other(s), and Phones & Devices. The main content area is titled 'User Phones' and includes a search bar, status filter, and device filter. A table lists the following user phones:

Status	Device	Assigned	Phone Number	Serial No.	Action
✗	Cameron Device	Cameron Device	(831) 272-0654	N/A	Setup & Provision
✗	Cameron Nightringer	Cameron Nightri...	(831) 272-0641	N/A	Setup & Provision
✗	Cameron Snom	Cameron Snom	(831) 233-3994	N/A	Setup & Provision
✗	Christina Nightringer	Kenny phone 3	(831) 272-0630	N/A	Setup & Provision
✗	Christina PolycomVX300	Interop Polycom...	(831) 975-2610	0004F289C3B8	
✗	CyberData Nightringer Existing Phone	CyberData Night...	(831) 609-4948	N/A	Setup & Provision
✓	CyberData Paging Amp Existing Phone	CyberData Pagine...	(831) 610-4933	N/A	Setup & Provision
✗	Existing Phone	Interop Snom360	(831) 233-3992	N/A	Setup & Provision

Verify Stored Message Menu Is Enabled

Before making a test call, be sure to verify the stored message menu is enabled. The setting *Enable Stored Message Playback* is located on the **Device Configuration** page of the web interface. Make sure this setting is checked. On default, *Stored Message Playback* is disabled.

Figure 5-12. Enabled Paging Menu

The screenshot displays the 'CyberData Paging Amplifier' web interface. At the top, a navigation bar includes tabs for Home, Device, Network, SIP, Multicast, Sensor, Audiofiles, Events, Autopro, and Firmware. The 'Device' tab is selected. The main content area is titled 'CyberData Paging Amplifier' and contains several configuration sections:

- Volume Settings (0-9):** Includes sliders for SIP Volume, Multicast Volume, Ring Volume, Sensor Volume, and Loopback Volume, all set to 4. A 'Volume Boost' dropdown is set to 'No Volume Boost'.
- Line-in Settings:** Includes a checkbox for 'Enable Line-in to Line-out Loopback'.
- DTMF Settings:** Includes a checkbox for 'Require Security Code' and a text field for 'Security Code'. The 'Enable Stored Message Playback' checkbox is checked and highlighted with a red box.
- Clock Settings:** Includes a checkbox for 'Set Time with NTP server on boot', a text field for 'NTP Server' (north-america.pool.ntp.org), a text field for 'Posix Timezone String' (PST8PDT,M3.2.0/2:00:00,M11.1.), a checkbox for 'Periodically sync time with server', a text field for 'Time update period (in hours)' (24), and a text field for 'Current Time' (19:27:43).
- Relay Settings:** Includes a checkbox for 'Activate Relay with DTMF code', text fields for 'Relay Pulse Code' (123), 'Relay Pulse Duration (in seconds)' (2), 'Relay Activation Code' (456), and 'Relay Deactivation Code' (654). It also includes checkboxes for 'Activate Relay During Ring', 'Activate Relay During Night Ring', and 'Activate Relay While Call Active'.
- Power Settings:** Includes a checkbox for '802.3AT Mode' (Detected and enabled), a checkbox for 'Force 802.3AT Mode (NOT recommended)', and a checkbox for 'Auxiliary Power Supply'.
- Misc Settings:** Includes a text field for 'Device Name' (Paging Amplifier), a checkbox for 'Auto-Answer Incoming Calls', checkboxes for 'Beep on Init' and 'Beep on Page', a checkbox for 'Disable HTTPS (NOT recommended)', and a checkbox for 'Two Speakers Connected'.

If autoprovisioning the amplifier, set *Enable Stored Message Playback* to **Yes** under **DeviceSettings** in the autoprovisioning template.

Figure 5-13. Autoprovisioning Example – Enabled Paging Menu

```
<DeviceSettings>
  <AdminName>admin</AdminName>
  <AdminPassword>admin</AdminPassword>

  <UseDigitalVolume>No</UseDigitalVolume>
  <SpeakerVolume>4</SpeakerVolume>      <!-- This is the volume for SIP calls -->
  <MulticastVolume>4</MulticastVolume>
  <RingVolume>4</RingVolume>
  <SensorVolume>4</SensorVolume>
  <LoopbackVolume>4</LoopbackVolume>
  <BoostLevel>0</BoostLevel>             <!-- Speaker boost -->
  <MicGain>4</MicGain>
  <MicBoost1>No</MicBoost1>
  <MicBoost2>No</MicBoost2>
  <DualSpeaker>No</DualSpeaker>

  <ActivateRelayWithDTMF>Yes</ActivateRelayWithDTMF>
  <DTMFActivationCode>456</DTMFActivationCode>
  <DTMFDeactivationCode>654</DTMFDeactivationCode>
  <DTMFPulseCode>123</DTMFPulseCode>
  <DTMFPulseDuration>2</DTMFPulseDuration>

  <ActivateRelayDuringRing>No</ActivateRelayDuringRing>
  <ActivateRelayDuringNightRing>No</ActivateRelayDuringNightRing>
  <ActivateRelayDuringCall>No</ActivateRelayDuringCall>

  <ActivateRelayDuringButtonPress>No</ActivateRelayDuringButtonPress>
  <RelayOnButtonPressTimeout>3</RelayOnButtonPressTimeout>

  <BeepOnInitialization>No</BeepOnInitialization>
  <BeepBeforePage>No</BeepBeforePage>

  <UseSecurityCode>No</UseSecurityCode>
  <PageSecurityCode></PageSecurityCode>

  <AutoAnswerIncomingCalls>Yes</AutoAnswerIncomingCalls>
  <ButtonLitWhenIdle>Yes</ButtonLitWhenIdle>
  <EnablePushToTalk>No</EnablePushToTalk>
  <PWMBrightness>255</PWMBrightness>
  <DisableHTTPS>No</DisableHTTPS>
  <HighPowerMode>No</HighPowerMode>
  <AuxPowerMode>No</AuxPowerMode>

  <EnableLineLoopback>No</EnableLineLoopback>
  <EnableStoredMessagePlayback>Yes</EnableStoredMessagePlayback>
</DeviceSettings>
```

Make a Test Call

Once the primary extension has registered with RingCentral and has been configured with the appropriate Device settings for the installation, any RingCentral phone may be used to dial the primary extension.

6.0 Configuration Procedure: Nightringer

What is a Nightringer?

CyberData's SIP-enabled Amplifiers offer a secondary SIP extension called **Nightringer** in addition to the primary extension used for auto-answer paging.

The Nightringer plays a customizable ring tone when an incoming call is detected. The Nightringer extension can be added to ring groups for simultaneous ringing. When added to a ring group, the Nightringer will ring until a ring group member picks up the call. The Nightringer stops ringing when the call is answered by a ring group member or when the caller disconnects before a ring group member picks up the call. The Nightringer extension cannot answer a call.

Provisioning Nightringer with RingCentral

Provisioning a Nightringer extension with RingCentral differs from provisioning the auto-answer primary extension.

It is important to note the Primary Extension and Nightringer Extension must use separate sets of SIP extension parameters. That is, each must be assigned their own SIP extension. The Nightringer cannot use the same provisioning information already in use by the Primary Extension (and vice versa).

When integrating with RingCentral, the Nightringer extension must be provisioned as an IP phone rather than a Paging Device in order to allow the Nightringer to ring.

If the Nightringer is provisioned and registered as a Paging Device, the Nightringer will only ring for 2 seconds before the call is cancelled by the RingCentral server. Thus, it is necessary to provision the Nightringer as an IP phone for full functionality. Please consult with RingCentral for costs associated with IP phone provisioning on the account.

Note: For voice paging, use the provision the primary extension as a Paging Device following the instructions in [Section 4.0 "Configuration Procedure: Auto-answer Paging."](#)

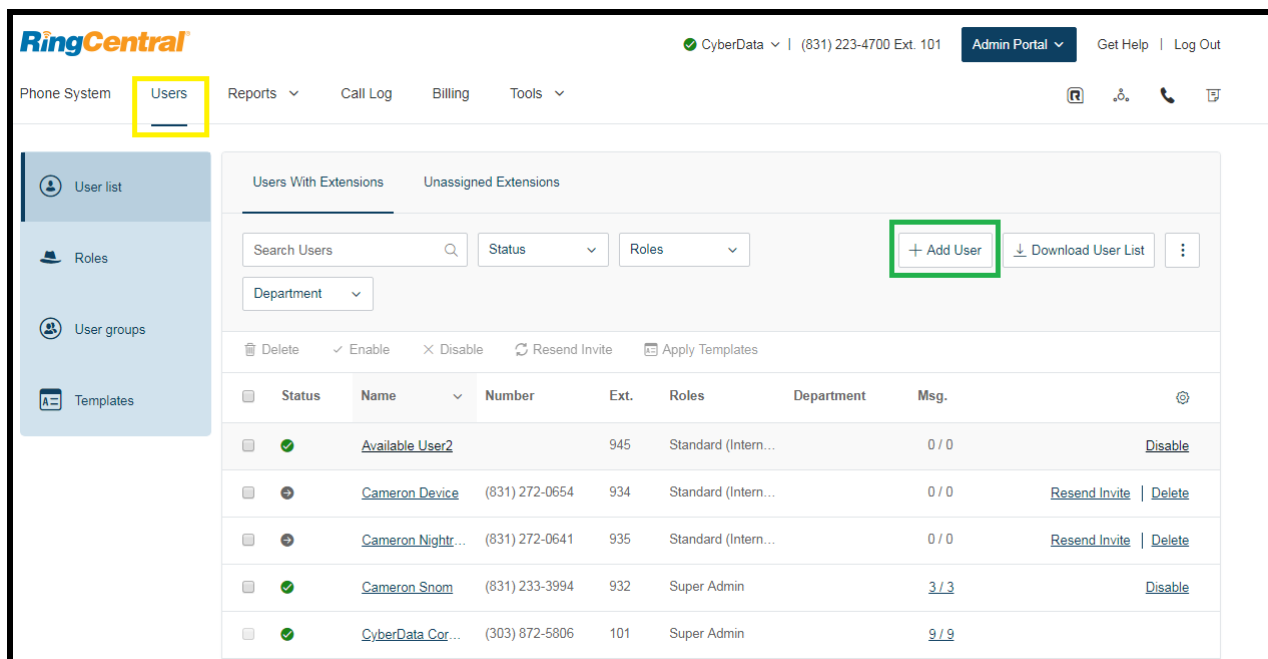
Add an IP Phone

To provision the amplifier's Nightringer extension, add a RingCentral Existing Phone through the RingCentral Admin Portal.

First, a RingCentral User must be created for the Nightringer.

1. From the [n] Users menu, click the **Add** button.

Figure 6-1. Add User Button



2. A popup window labeled **Add User** will appear. Choose the user location then press **next**.

Figure 6-2. Add User Location

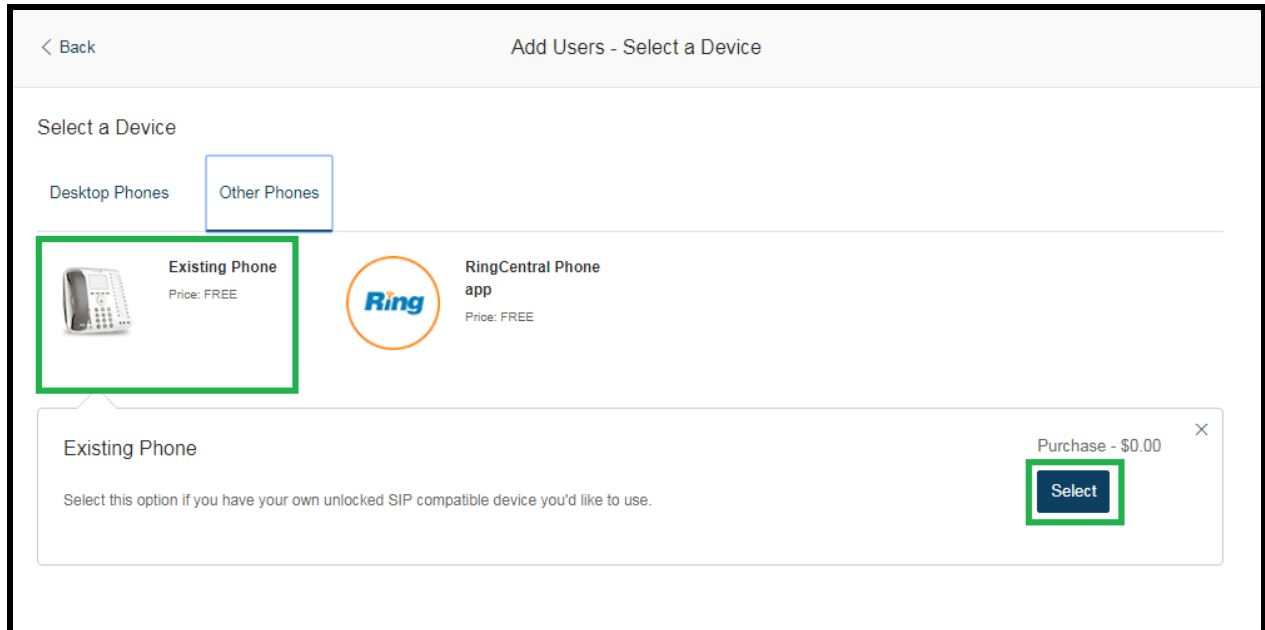
3. In the subsection **Add Users with Phones**, select the number of users, state, area code, and device.

Figure 6-3. Add User Phone Number

Learn More'. At the bottom, there are four input fields: 'Number of Users' (value: 1), 'State' (dropdown: Select), 'Area Code' (dropdown: Select), and 'Device' (dropdown: Select a Device... >). The 'Number of Users', 'State', and 'Area Code' fields are highlighted with a yellow box, and the 'Device' field is highlighted with a green box. At the bottom right, there are 'Back' and 'Next' buttons."/>

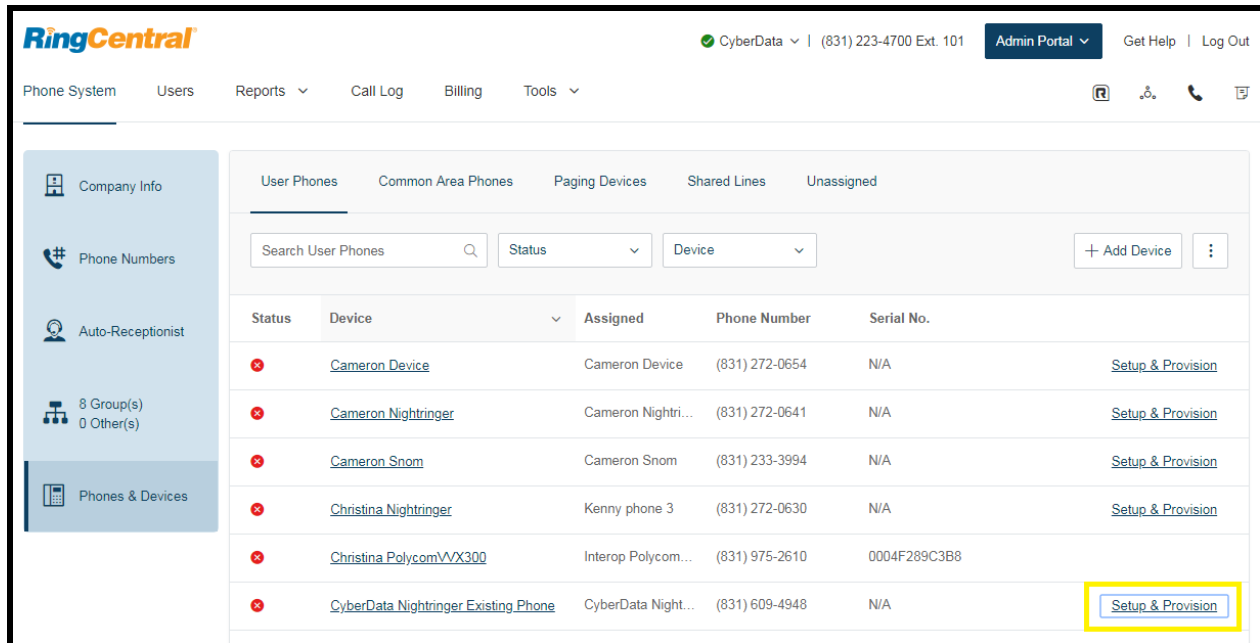
4. A prompt will appear to select a phone type. Click the **Select** button to choose an **Existing Phone**. Select **Existing Phone**.

Figure 6-4. Select Phone Type



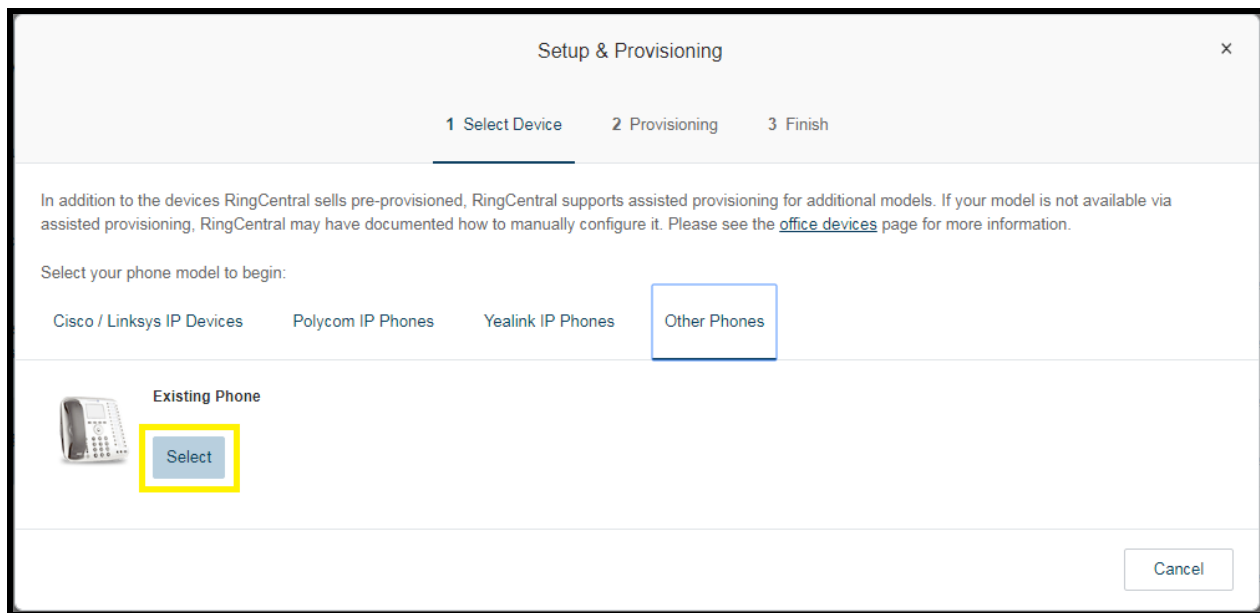
- From the **Phones & Devices** menu, select **User Phones** and then select the user phone designated for the Nightringer. Click **Setup and Provision**.

Figure 6-5. Setup and Provision



- A popup window labeled **Assisted provisioning – Step 1** will appear. Select **Other Phone** and click **Next**.

Figure 6-6. Assisted Provisioning – Step 1



7. A popup window labeled **Assisted Generic IP Phone/Adaptor Provisioning** will appear. The provisioning information will be used to register the amplifier's Nightringer extension with RingCentral.

Figure 6-7. IP Phone Provisioning Information

The screenshot shows a 'Setup & Provisioning' window with a progress bar at the top indicating three steps: 'Select Device' (checked), 'Provisioning' (checked), and '3 Finish' (active). Below the progress bar, there is instructional text and a table of configuration values.

Field	Value
SIP Domain	sip.ringcentral.com:5060
Outbound Proxy	SIP10.ringcentral.com:5090
User Name	18316094948
Password	[Obscured]
Authorization ID	802872227010

A 'Done' button is located at the bottom right of the window.

Note: The Password has been obscured. These values are published only for reference.

SIP Fields Table

Use the following table to determine how the RingCentral SIP field values above correlate to the CyberData SIP field values.

Table 6-1. CyberData Configuration Settings

Primary SIP Server field	From the IP Phone Provisioning Information popup: SIP Server
Primary SIP User ID field	From the IP Phone Provisioning Information popup: SIP User ID
Primary SIP Auth ID field	From the IP Phone Provisioning Information popup: Authenticate ID
Primary SIP Auth Password field	From the IP Phone Provisioning Information popup: Authenticate Password
Outbound Proxy field	From the IP Phone Provisioning Information popup: Outbound Proxy
Outbound Proxy Port field	From the IP Phone Provisioning Information popup: Outbound Proxy Port
Re-registration Interval (in seconds) field	30
Keep Alive Period field	0
Force Selected Codec checkbox	Yes
Codec dropdown	PCMU (G.711, u-law)

Configure Nightringer SIP Parameters

If configuring the Nightringer extension through the web interface, use the following steps to register Nightringer with RingCentral.

1. Review [Configure the SIP Parameters](#).
2. From the Home page of the web interface, click **SIP** from the top toolbar of the screen.

Figure 6-8. Home Page of the Web Interface

CyberData Paging Amplifier

Current Status

Serial Number: 405000417
Mac Address: 00:20:f7:03:a3:2f
Firmware Version: v11.8.0

IP Addressing: DHCP
IP Address: 10.10.0.97
Subnet Mask: 255.0.0.0
Default Gateway: 10.0.0.1
DNS Server 1: 10.0.1.56
DNS Server 2:

SIP Mode: Enabled
Multicast Mode: Disabled
Event Reporting: Disabled
Nightringer: Enabled

Primary SIP Server: Registered
Backup Server 1: Not registered
Backup Server 2: Not registered
Nightringer Server: Registered

Admin Settings

Username: admin
Password:
Confirm Password:

Save Reboot Toggle Help

Import Settings

Choose File No file chosen

Import Config

Export Settings

Export Config

3. Enter the provisioning information from the [Assisted Generic IP Phone/Adaptor Provisioning](#) popup.

Note: The Local SIP Port is set to 5061 on default and is used by the amplifier as its source port for the Nightringer extension configured on this page.

4. Set the *Re-registration Interval (in seconds)* to **30 seconds**.
5. Set the keep alive period to **0**.
6. Enable Force Codec Selection and select **PCMU**.
7. Click **Save** and **Reboot** to store changes.

Figure 6-9. Nightringer Configuration Page of the Web Interface

CyberData Paging Amplifier

SIP Settings

Enable SIP operation: ☒

SIP Transport Protocol: UDP ▾

Register with a SIP Server: ☒

Use Cisco SRST: ☐

Primary SIP Server:

Primary SIP User ID:

Primary SIP Auth ID:

Primary SIP Auth Password:

Backup SIP Server 1:

Backup SIP User ID 1:

Backup SIP Auth ID 1:

Backup SIP Auth Password 1:

Backup SIP Server 2:

Backup SIP User ID 2:

Backup SIP Auth ID 2:

Backup SIP Auth Password 2:

Remote SIP Port:

Local SIP Port:

Outbound Proxy:

Outbound Proxy Port:

Disable rport Discovery: ☐

Buffer SIP Calls: ☐

Re-registration Interval (in seconds):

Unregister on Boot: ☐

Keep Alive Period:

Nightringer Settings

Enable Nightringer: ☒

SIP Server:

Remote SIP Port:

Local SIP Port:

Outbound Proxy:

Outbound Proxy Port:

User ID:

Authenticate ID:

Authenticate Password:

Re-registration Interval (in seconds):

RTP Settings

RTP Port (even):

Jitter Buffer:

Call Disconnection

Terminate Call after delay:

Codec Selection

Force Selected Codec: ☒

Codec: PCMU (G.711, u-law) ▾

Save

Reboot

Toggle Help

Autoprovisioning

If autoprovisioning the amplifier, use the Nightringer Settings in the autoprovisioning template to register the Nightringer with RingCentral.

Figure 6-10. Autoprovisioning Template Example – Nightringer Settings

```
<NightringerSettings>
  <EnableNightringer>Yes</EnableNightringer>
  <NightringerSIPServer>sip.ringcentral.com</NightringerSIPServer>
  <NightringerRemotePort>5060</NightringerRemotePort>
  <NightringerLocalPort>5061</NightringerLocalPort>
  <NightringerOutboundProxy>sip20.ringcentral.com</NightringerOutboundProxy>
  <NightringerOutboundProxyPort>5090</NightringerOutboundProxyPort>
  <NightringerUserID>18312074707</NightringerUserID>
  <NightringerAuthID>191437726011</NightringerAuthID>
  <NightringerAuthPassword>*****</NightringerAuthPassword>
  <NightringerRegistrationTimeout>30</NightringerRegistrationTimeout>
</NightringerSettings>
```

Note: These example values are published only for reference. The *NightringerAuthID* value should be the actual value from the [Assisted Generic IP Phone/Adaptor Provisioning](#) popup.

Verify the Nightringer is Registered

After the device has rebooted and initialized, refresh the [Home page of the web interface](#). The device should show as **[Registered with SIP Server]** in green text on the bottom of the Home Page of the web interface.

Additionally, the registration status may be verified with RingCentral through the admin portal. From the **Phones & Devices** menu, select **User Phones** and the IP Phone just created for the Nightringer. The status should show as “online” in the **Phone Details**.

Figure 6-11. Phone Details – Status

The screenshot shows the RingCentral Admin Portal interface. The left sidebar contains navigation options: Company Info, Phone Numbers, Auto-Receptionist, 8 Group(s) 0 Other(s), and Phones & Devices. The main content area is titled 'User Phones' and includes a search bar, status filter, and device filter. A table lists several devices, with the last row, 'CyberData Nightringer Existing Phone', highlighted in yellow. This row shows a green status icon, the device name, 'CyberData Night...', the phone number '(831) 609-4948', and the serial number 'N/A'. A 'Setup & Provision' button is visible next to the highlighted row.

Status	Device	Assigned	Phone Number	Serial No.	
✖	Cameron Device	Cameron Device	(831) 272-0654	N/A	Setup & Provision
✖	Cameron Nightringer	Cameron Nightri...	(831) 272-0641	N/A	Setup & Provision
✖	Cameron Snom	Cameron Snom	(831) 233-3994	N/A	Setup & Provision
✖	Christina Nightringer	Kenny phone 3	(831) 272-0630	N/A	Setup & Provision
✖	Christina PolycomVX300	Interop Polycom...	(831) 975-2610	0004F289C3B8	
✔	CyberData Nightringer Existing Phone	CyberData Night...	(831) 609-4948	N/A	Setup & Provision

Make a Test Call

Once the device has registered with RingCentral, any RingCentral phone may be used to dial the Nightringer extension.

7.0 Contact CyberData Corporation

Sales

For sales-related questions, please visit our [Contact CyberData Sales](#) web page for more information.

Technical Support

For CyberData Technical Support, please submit a [Contact CyberData VoIP Technical Support](#) form on our website.

The CyberData VoIP Technical Support Contact form initiates a troubleshooting ticket which CyberData uses for quality assurance purposes.

Additionally, the Contact VoIP Tech Support form tells us which phone system you are using, the make and model of the network switch, and other essential troubleshooting information we need to efficiently assist with a resolution. Please also include as much detail as possible in the Describe Problem section of the form. Your installation is extremely important to us.

Documentation Feedback

We realize changes to the software or hardware of the RingCentral Cloud PBX solution may render this document obsolete. We welcome and encourage documentation feedback to ensure continued applicability.