



RING CENTRAL CONFIGURATION GUIDE: SIP PAGING ADAPTER (SPA)

Document Part #931050E

CyberData Corporation
3 Justin Court
Monterey, CA 93940
(831) 373-2601

**RingCentral Configuration Guide: SIP Paging Adapter (SPA)
Document #931050E**

COPYRIGHT NOTICE:

© 2021, CyberData Corporation, ALL RIGHTS RESERVED.

This configuration guide and related materials are the copyrighted property of CyberData Corporation. No part of this configuration guide or related materials may be reproduced or transmitted, in any form or by any means (except for internal use by licensed customers), without prior express written permission of CyberData Corporation. This configuration guide, and the products, software, firmware, and/or hardware described in this configuration guide are the property of CyberData Corporation, provided under the terms of an agreement between CyberData Corporation and recipient of this configuration guide, and their use is subject to that agreement and its terms.

DISCLAIMER: Except as expressly and specifically stated in a written agreement executed by CyberData Corporation, CyberData Corporation makes no representation or warranty, express or implied, including any warranty or merchantability or fitness for any purpose, with respect to this configuration guide or the products, software, firmware, and/or hardware described herein, and CyberData Corporation assumes no liability for damages or claims resulting from any use of this configuration guide or such products, software, firmware, and/or hardware. CyberData Corporation reserves the right to make changes, without notice, to this configuration guide and to any such product, software, firmware, and/or hardware.

OPEN SOURCE STATEMENT: Certain software components included in CyberData products are subject to the GNU General Public License (GPL) and Lesser GNU General Public License (LGPL) “open source” or “free software” licenses. Some of this Open Source Software may be owned by third parties. Open Source Software is not subject to the terms and conditions of the CyberData COPYRIGHT NOTICE or software licenses. Your right to copy, modify, and distribute any Open Source Software is determined by the terms of the GPL, LGPL, or third party, according to who licenses that software. Software or firmware developed by CyberData that is unrelated to Open Source Software is copyrighted by CyberData, subject to the terms of CyberData licenses, and may not be copied, modified, reverse-engineered, or otherwise altered without explicit written permission from CyberData Corporation.

TRADEMARK NOTICE: CyberData Corporation and the CyberData Corporation logos are trademarks of CyberData Corporation. Other product names, trademarks, and service marks may be the trademarks or registered trademarks of their respective owners.

Revision Information

Revision 931050A was released on March 16, 2015.

- Initial release.

Revision 931050B was released on September 18, 2017.

- This revision features new device photos and updated configuration process

Revision 931050C was released on May 2nd, 2019

- Updated extension creation on Ringcentral side with new screenshots.

Revision 931050D was released on May 18th, 2020.

- Corrected mistakes with nomenclature.

Revision 931050E was released on May 4th, 2021

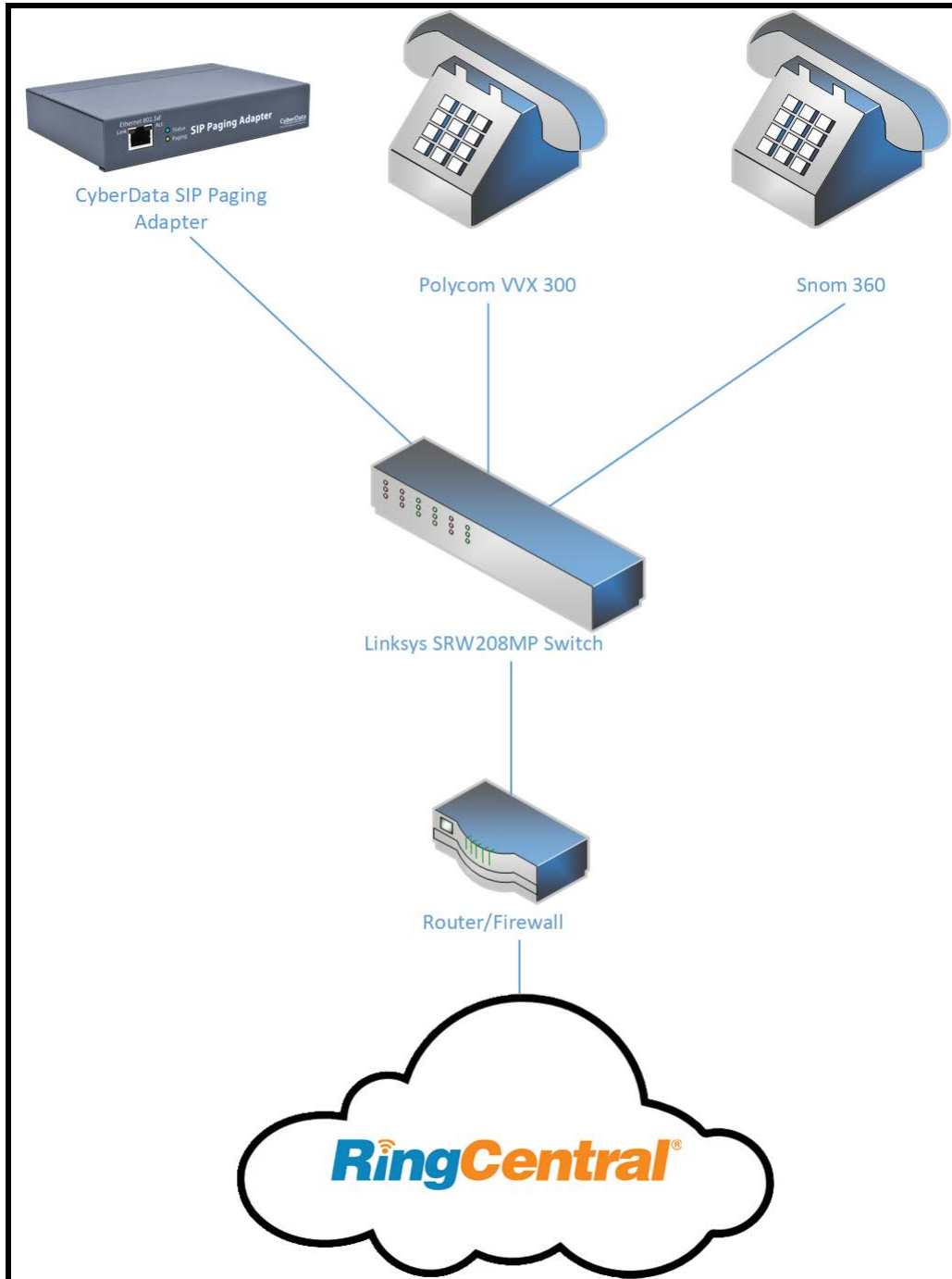
- Added section for TLS and SRTP Configuration

Table of Contents

| | |
|--|----|
| Table of Contents | 3 |
| 1.0 Setup Diagram | 4 |
| 2.0 Test Setup Equipment | 5 |
| 3.0 Before You Start | 6 |
| 4.0 Configuration Procedure: TLS and SRTP | 7 |
| 4.1 TLS and SRTP: Auto-Answer Paging..... | 7 |
| 4.2 TLS and SRTP: Voice Prompted Paging..... | 19 |
| 5.0 Configuration Procedure: UDP Paging Extension..... | 32 |
| 6.0 Configuration Procedure: UDP Voice-Prompted Paging | 49 |
| 7.0 Configuration Procedure: Nightringer | 61 |
| 8.0 Multicast Configuration | 74 |
| 9.0 Contact CyberData Corporation | 82 |

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 SIP PAGING ADAPTER | 011233B | v11.7.2 |
| CYBERDATA SIP PAGING ADAPTER | 011233C | v20.1.0 |
| 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 Paging Adapter (SPA).

Network Advisories

RingCentral uses a Fully Qualified Domain Name (FQDN) for the SIP server and Outbound Proxy addresses. The SPA 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 SPA to use:

- UDP 5060-5061, 5090 (SIP)
- TCP 5060, 5096 (SIP)
- UDP 10500 (RTP)

The SPA will need to traverse the public internet in order to operate with RingCentral in the cloud. The SPA'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 you start, download the Operation and Quick Start guides from the SPA's product webpage:

<https://www.cyberdata.net/collections/sip/products/011233>

The CyberData Discovery Utility can be used to locate CyberData devices on your network. You may download it from the following web address:

<http://www.cyberdata.net/assets/common/discovery.zip>

Note: DHCP addressing mode is enabled on default.

4.0 Configuration Procedure: TLS and SRTP

RingCentral has been recently updated and added support for TLS and SRTP for SIP and RTP transmission to better protect conversations. TLS and SRTP use encryption to protect the call setup process and audio from those that may wish to intercept traffic and spy on conversations. Therefore, using TLS and SRTP is recommended when all VoIP equipment supports both features.

This section will extension creation (Auto-Answer Paging and Voice Prompted Paging) and how to setup the CyberData SIP Paging Adapter (SPA) for use with TLS and SRTP.

4.1 TLS and SRTP: Auto-Answer Paging

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

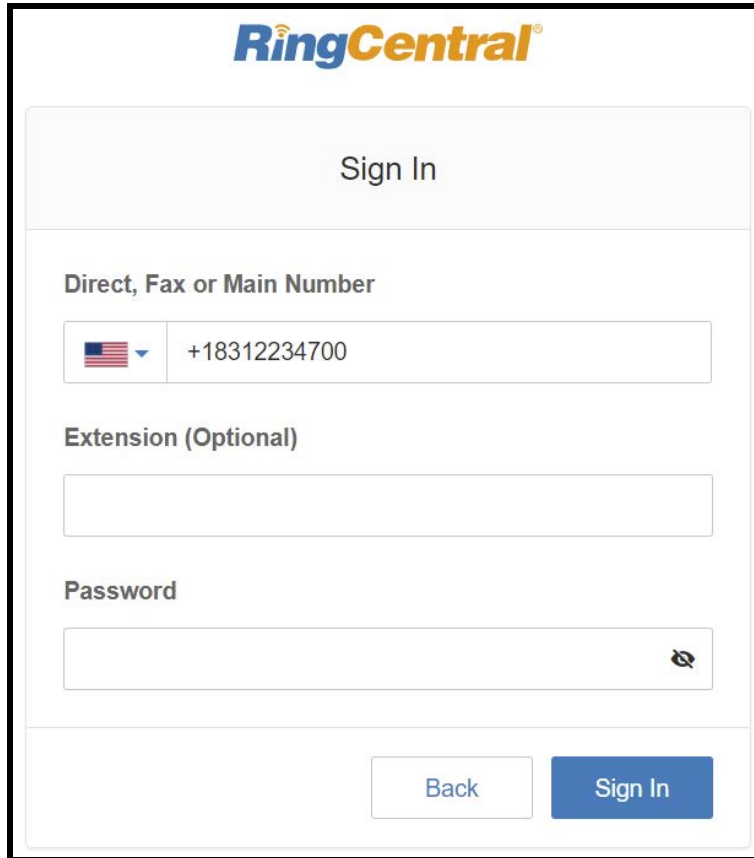
Add a Paging Extension

This section describes the process of creating a user, provisioning a paging device, and registering the paging extension that will be used for paging with RingCentral. First, a user must be created for the paging adapter.

Use the following steps to create a user and provision a paging device for the adapter's primary extension through the RingCentral Admin Portal.

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

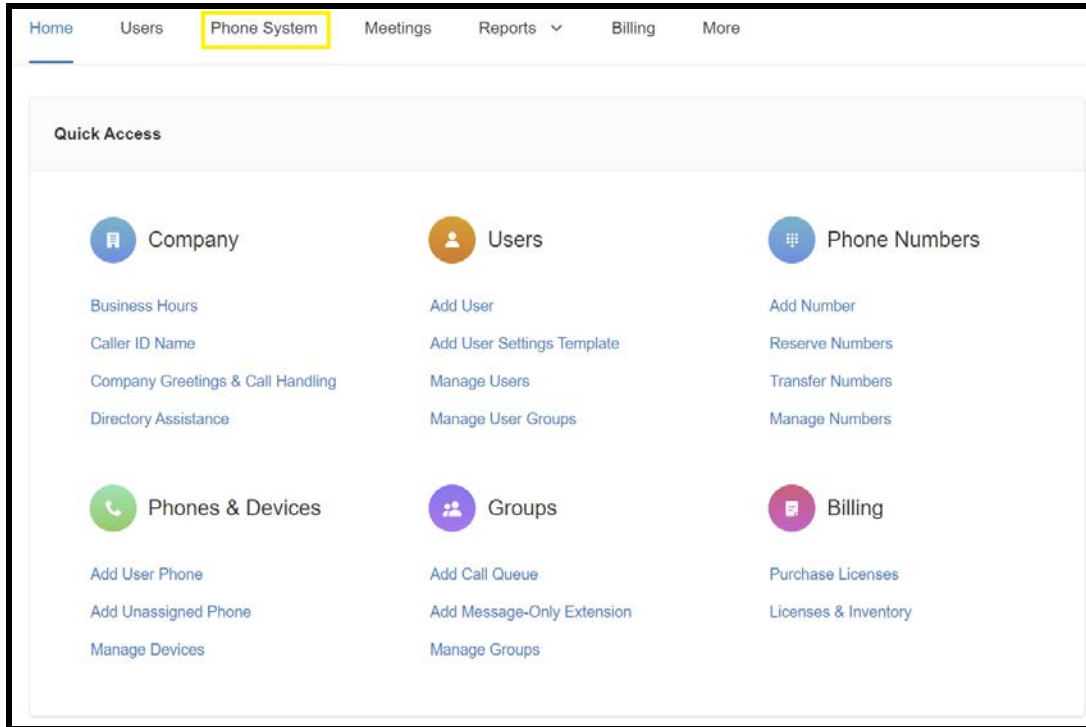
Figure 4-1: RingCentral Admin Portal Login



The screenshot shows the RingCentral Admin Portal Sign In page. At the top is the RingCentral logo. Below it is a 'Sign In' header. The form contains three input fields: 'Direct, Fax or Main Number' with a country dropdown (USA) and the number '+18312234700'; 'Extension (Optional)'; and 'Password' with a toggle for visibility. At the bottom are 'Back' and 'Sign In' buttons.

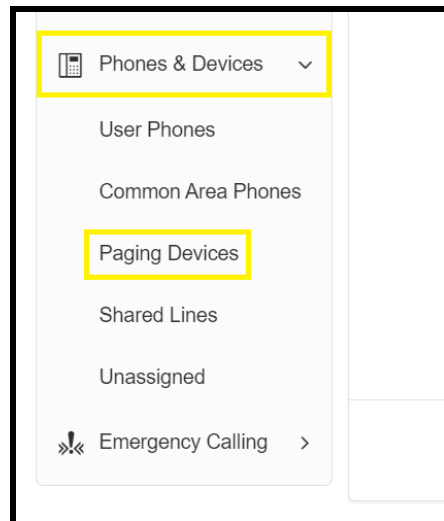
2. From the login page select **Phone System**.

Figure 4-2: Phone System



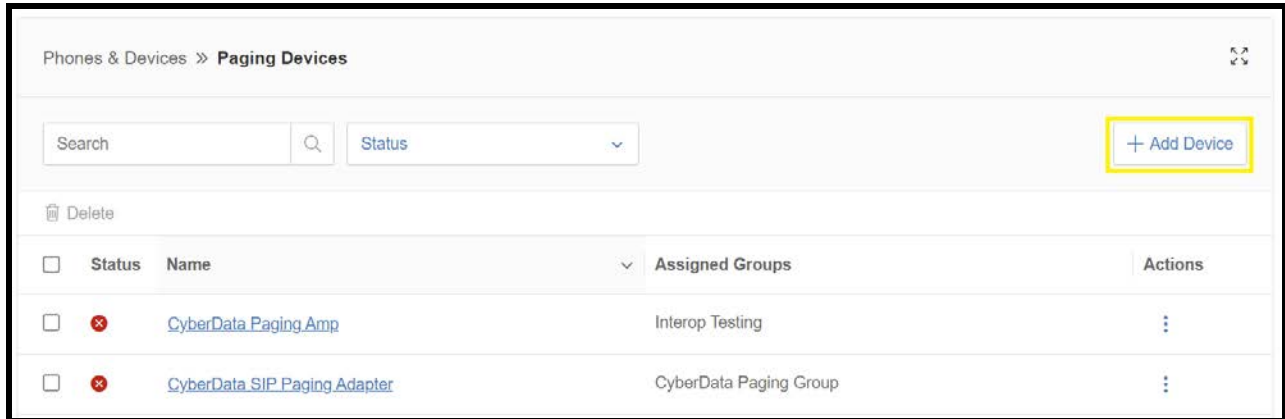
3. From the Phone System page select **Phones & Devices** and then **Paging Devices**.

Figure 4-3: Phones & Devices → Paging devices



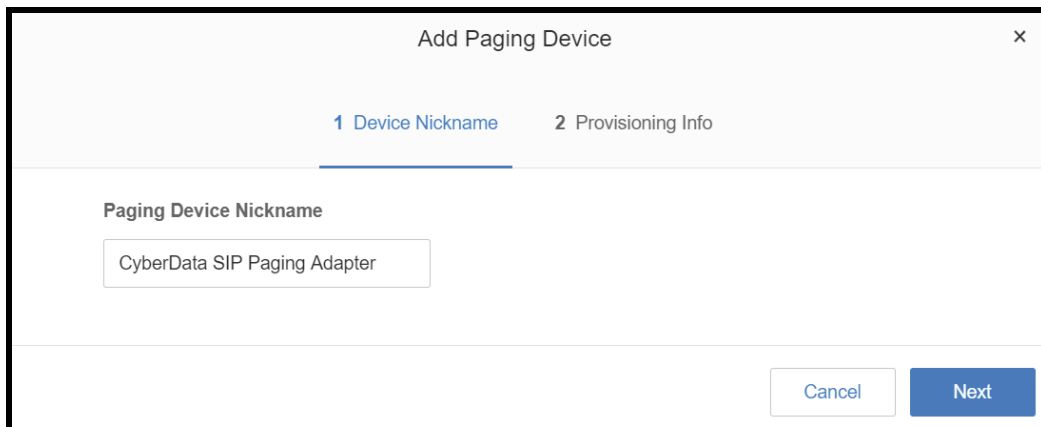
4. From the Paging Device page press **Add Device** to make a new paging device.

Figure 4-4: Add Device



5. A pop-up will appear that allows the Paging Device to be named.

Figure 4-5: Name Paging Device



6. After naming the device press **Next**.

7. The pop-up will now display configuration information to setup the CyberData device. Make sure to select an Outbound Proxy in your area.

Figure 4-6: Configuration details

×

✓ Device Nickname 2 Provisioning Info

📄 Copy

Provisioning Information
Paging devices need to be programmed with the information given below to make them fully functional when assigned to paging group. Configuration for each device may vary, please check with your device's manufacturer for specific instructions.

Step 1: Will you be using secure voice transport on this device?

Yes - The device must support Transport Protocol version TLS 1.2 [Learn More](#)

No

Step 2: Set TLS on your device's Transport Protocol

Step 3: Enable Offer and Answer on the device's SRTP (Secure Real-Time Transport Protocol)

Step 4: Configure SIP information

| Field | Value |
|---------------------|--|
| SIP Domain | sjp.ringcentral.com:5060 |
| Remote SIP port | 5060 |
| Local SIP port | 5060 |
| Outbound Proxy | <input style="width: 100%;" type="text" value="sip10.ringcentral.com:5096"/> |
| Outbound Proxy Port | 5096 |
| User Name | 18312234700*803842887011 |
| Password | [Obscured] |
| Authorization ID | 803842887011 |

Done

Note: For the purposes of this document the password has been obscured.

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 SIP Paging Adapter’s operation guide for complete information on configuration through the web interface and CyberData’s “autoprovisioning” method using templates via HTTP, HTTPS, and TFTP protocols.

Table 4-1: CyberData Configuration Settings

| | |
|--|---|
| Primary SIP Server field | From the Paging Device Provisioning Information popup: SIP Server/SIP Domain |
| Primary SIP User ID field | From the Paging Device Provisioning Information popup: User Name |
| Primary SIP Auth ID field | From the Paging Device Provisioning Information popup: Authorization ID |
| Primary SIP Auth Password field | From the Paging Device Provisioning Information popup: 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) |
| SIP Transport Protocol | TLS |
| TLS Version | 1.2 only (recommended) |
| Verify Server Certificate | Enabled |
| Set Time with NTP Server on boot | Enabled |
| SRTP | Enabled |

Web Configuration

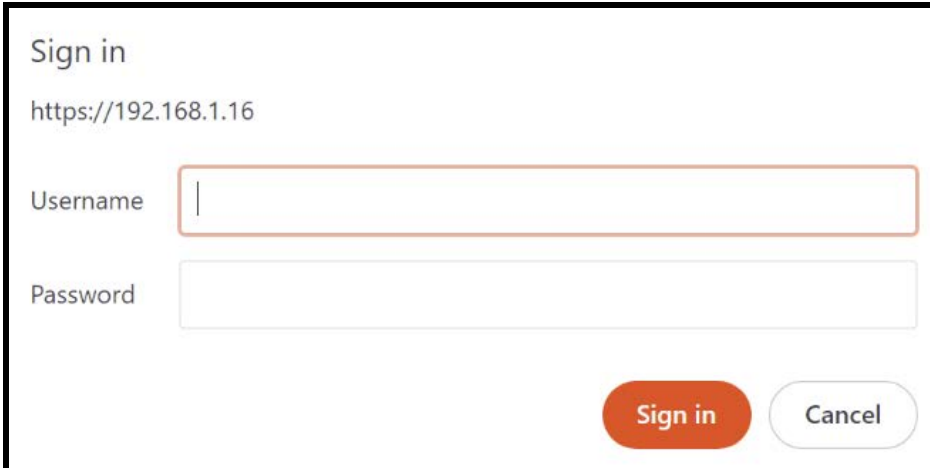
If configuring through the web interface, use the following steps to login to the web interface of the CyberData device.

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 4-7: Web Interface Login



Sign in

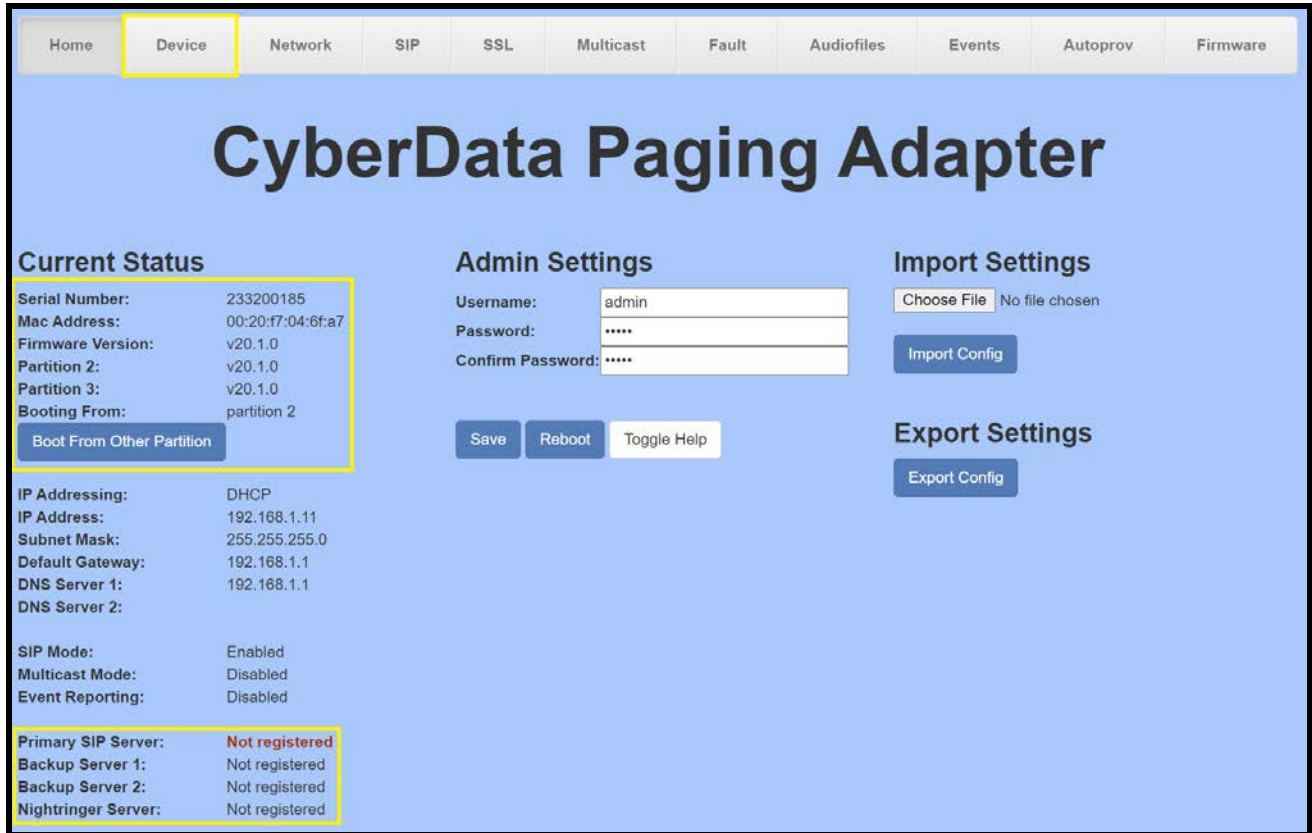
https://192.168.1.16

Username

Password

Sign in Cancel

Figure 4-8: Home Page

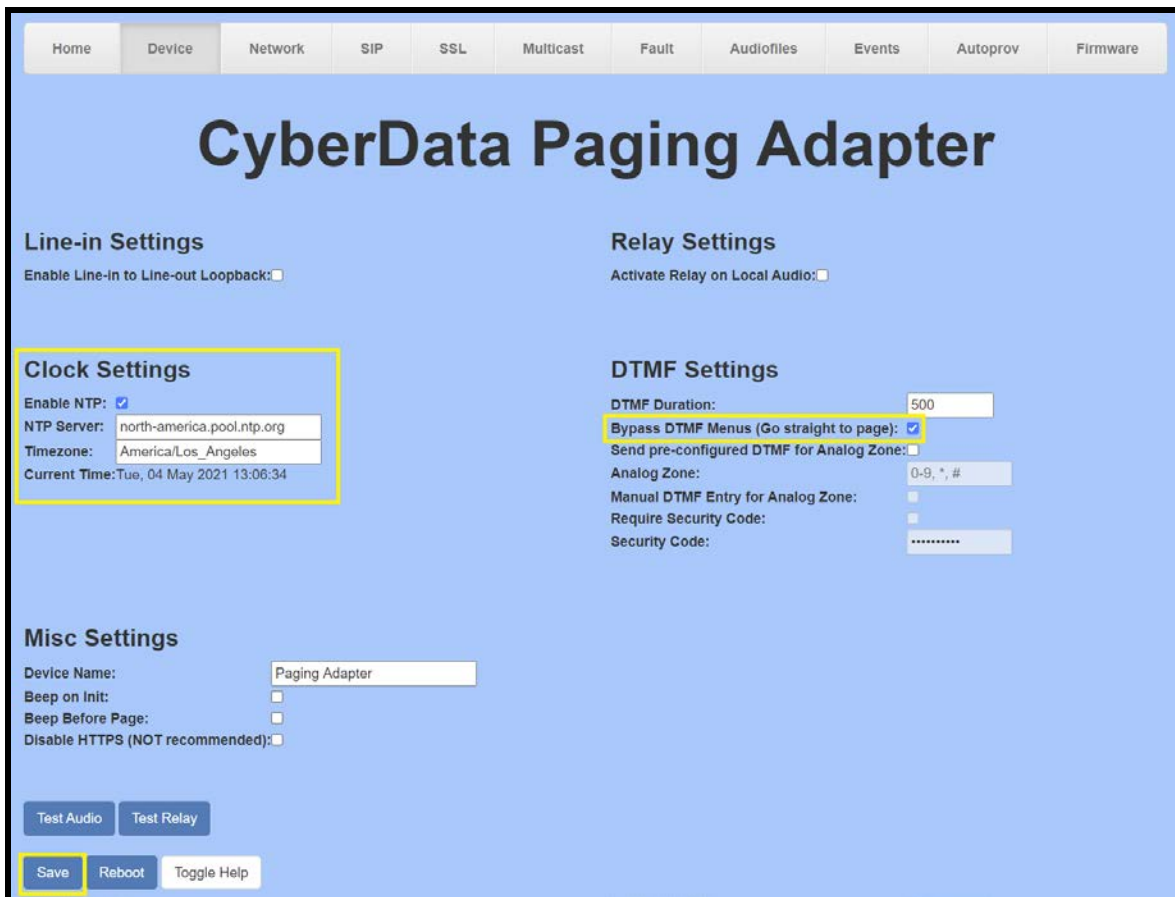


Note: The firmware version and registration status for the paging extension and Nightringer extensions appear here.

3. On the Home Page, click **Device** on the top toolbar to access the Device page.

4. On the **Device** page scroll to the **Clock Settings** section.

Figure 4-9: Device Tab



4. Ensure **Enable NTP** is enabled.
5. Adjust the **NTP Server** as necessary.
6. Adjust the **Timezone** as necessary.
7. Check the box for **Bypass DTMF Menus (Go straight to page)**.
8. **Save**.
9. Press **SIP** to navigate to the SIP configuration page.
10. Set the **SIP Transport Protocol** to **TLS**.

Note: NTP enabled should appear in green.

11. Verify that **TLS Version** is set to **1.2** and **Verify Server Certificate** is checked.
12. Enter the provisioning information from the **Generic Paging Device Provisioning** popup window.
13. Set the **Re-registration interval** to **30**.
14. Set the **Keep Alive Period** to **0**.

Figure 4-10: SIP Configuration

The screenshot displays the SIP Configuration interface with several sections highlighted in yellow:

- SIP Settings:** Includes fields for Primary SIP Server (sip.ringcentral.com), Primary SIP User ID (18312234700*803842887011), Primary SIP Auth ID (803842887011), Primary SIP Auth Password (masked), Re-registration Interval (30), Backup SIP Server 1, Backup SIP User ID, Backup SIP Auth ID, Backup SIP Auth Password, Re-registration Interval (360), Backup SIP Server 2, Backup SIP User ID, Backup SIP Auth ID, Backup SIP Auth Password, Re-registration Interval (360), Remote SIP Port (5060), and Local SIP Port (5060).
- Audio Codec Selection:** Codec is set to PCMU (G.711, u-law).
- RTP Settings:** RTP Port (even) is 10500, Asymmetric RTP is unchecked, Jitter Buffer is 50, and RTP Encryption (SRTP) is set to Mandatory.
- Other SIP Settings:** SIP Transport Protocol is TLS (NTP enabled), TLS Version is 1.2 only (recommended), Verify Server Certificate is unchecked, Outbound Proxy is sip10.ringcentral.com, Outbound Proxy Port is 5096, Use Cisco SRST is unchecked, Disable rport Discovery is unchecked, and Keep Alive Period is 0.

Buttons for Save, Reboot, and Toggle Help are located at the bottom right of the configuration area.

15. Set SRTP to Enabled.

16. Save and Reboot.

Autoprovisioning

If autoprovisioning the device, use the SIP Settings in the autoprovisioning template to register with RingCentral. An autoprovisioning template is provided in the respective firmware folder available on the **Downloads** tab of the product webpage here:

Be sure to use the autoprovisioning template for the firmware version running on the device. 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 4-11: Autoprovisioning Template Example – SIP Settings

```
<SIPSettings>
  <sip_enable>1</sip_enable>
  <sip_register>1</sip_register>
  <sip_unregister>0</sip_unregister>
  <sip_proxy>sip10.ringcentral.com</sip_proxy>
  <sip_proxy_port>5096</sip_proxy_port>
  <use_cisco_srst>0</use_cisco_srst>
  <local_sip_port>5060</local_sip_port>
  <keepalive>0</keepalive>
  <call_timeout>0</call_timeout>
  <disable_rport_discovery>0</disable_rport_discovery>
  <rtp_port>10500</rtp_port>
  <asymmetric_rtp>0</asymmetric_rtp>
  <jitterbuffer>50</jitterbuffer>
  <default_codec>0</default_codec>
  <sip_transport>2</sip_transport>
  <sip_tls_version>0</sip_tls_version>
  <sip_verify_server_cert>0</sip_verify_server_cert>
  <sip_rtp_encryption>2</sip_rtp_encryption>
  <buffer_sip_page>0</buffer_sip_page>
  <nightringer_multicast_enable>0</nightringer_multicast_enable>
  <nightringer_multicast_address>224.1.2.32</nightringer_multicast_address>
  <nightringer_multicast_port>2020</nightringer_multicast_port>
</SIPSettings>

<!--
SIPServerSettings

index0 is the primary sip server
index1 is the backup sip server 1
index2 is the backup sip server 2
index3 is the nightringer
-->
<SIPServerSettings>
  <index0>
    <server>sip.ringcentral.com</server>
    <port>5060</port>
    <userid>18312234700*803836578011</userid>
    <authid>803836578011</authid>
    <password>*****</password>
    <registration_timeout>30</registration_timeout>
  </index0>
  <index1>
  <index2>
  <index3>
</SIPServerSettings>
```

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 Paging Extension is Registered

After the adapter 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 **Devices** and the Paging Device just created for the Speaker. The status should show as “online” in the **Device Details**.

Figure 4-12: Device Details – Status

Phones & Devices » Paging Devices

Search [] [] Status [] [] + Add Device

Delete

| <input type="checkbox"/> | Status | Name | Assigned Groups | Actions |
|--------------------------|--------|--|-----------------|---------|
| <input type="checkbox"/> | ✖ | CyberData Paging Amp | Interop Testing | ⋮ |
| <input type="checkbox"/> | ✖ | CyberData SIP Paging Adapter | | ⋮ |
| <input type="checkbox"/> | ✔ | CyberData SIP Paging Server | | ⋮ |

Make a Test Call

Once the device has registered with RingCentral, use a phone associated with an [Allowed User](#) to dial the extension of the paging group. Refer to [RingCentral Article Number 5983](#) for instructions on paging a group from an IP phone.

4.2 TLS and SRTP: Voice Prompted Paging

When an installation requires more flexibility than auto-answer live paging, the SIP Paging Adapter's primary extension can be provisioned as an IP phone associated with a user extension. Provisioning as a Paging Device does not allow for sending of DTMF characters for stored message playback or analog zone selection. Provision the adapter's paging extension as an IP phone to enable the following features:

- Stored Message Playback
- Analog Zone selection via DTMF

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 designated for the SIP Paging Adapter. 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 4-13: RingCentral Admin Portal Login

The screenshot shows the RingCentral Admin Portal login interface. At the top is the RingCentral logo. Below it is a 'Sign In' heading. The form contains three input fields: 'Direct, Fax or Main Number' (with a country code dropdown set to +1 and the number 18312234700), 'Extension (Optional)', and 'Password' (with a toggle for visibility). At the bottom are 'Back' and 'Sign In' buttons.

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

Figure 4-14: Add User Button

The screenshot shows the RingCentral Admin Portal interface. At the top, the RingCentral logo is on the left, and the user's name 'CyberData' and phone number '(831) 223-4700 Ext. 101' are on the right. Below the logo, the 'Phone System' menu is open, and the 'Users' option is highlighted with a yellow box. 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, there are action buttons: 'Delete', 'Enable', 'Disable', 'Resend Invite', and 'Apply Templates'. A table lists users with columns for 'Status', 'Name', 'Number', 'Ext.', 'Roles', 'Department', and 'Msg.'. The table contains 13 rows of user data.

| Status | Name | Number | Ext. | Roles | Department | Msg. | |
|--------|--------------------|----------------|------|---------------------|------------|-------|------------------------|
| ✓ | Available User2 | | 945 | Standard (Intern... | | 0 / 0 | Disable |
| ➔ | Cameron Device | (831) 272-0654 | 934 | Standard (Intern... | | 0 / 0 | Resend Invite Delete |
| ➔ | Cameron Nightr... | (831) 272-0641 | 935 | Standard (Intern... | | 0 / 0 | Resend Invite Delete |
| ✓ | Cameron Snom | (831) 233-3994 | 932 | Super Admin | | 3 / 3 | Disable |
| ✓ | CyberData Cor... | (303) 872-5806 | 101 | Super Admin | | 9 / 9 | |
| ✓ | Group User | | 943 | Standard (Intern... | | 3 / 3 | Disable |
| ✓ | Interop Polycy ... | (831) 975-2610 | 104 | Standard (Intern... | | 1 / 1 | Disable |
| ✓ | Interop Snom360 | (831) 233-3992 | 103 | Super Admin | | 5 / 5 | |
| ✓ | Interop Strobe | (669) 900-4551 | 942 | Standard (Intern... | | 1 / 1 | Disable |
| ✓ | Kenny_phone_2 | (831) 741-4265 | 938 | Standard (Intern... | | 2 / 2 | Disable |
| ✓ | 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 4-15: Add User Popup

Add Users

1 Location 2 Add Users 3 Shipping Address 4 Confirmation

Select a Location

Domestic International

Cancel Next

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

Figure 4-16: Pick a Phone Number

Add Users

✓ Location 2 Add Users 3 Shipping Address 4 Confirmation

Add Users With Phones Add Users Without Phones

Account Status

Your plan: 20 - 99 Users Used: 25 Available: 0 Available for purchase: 74

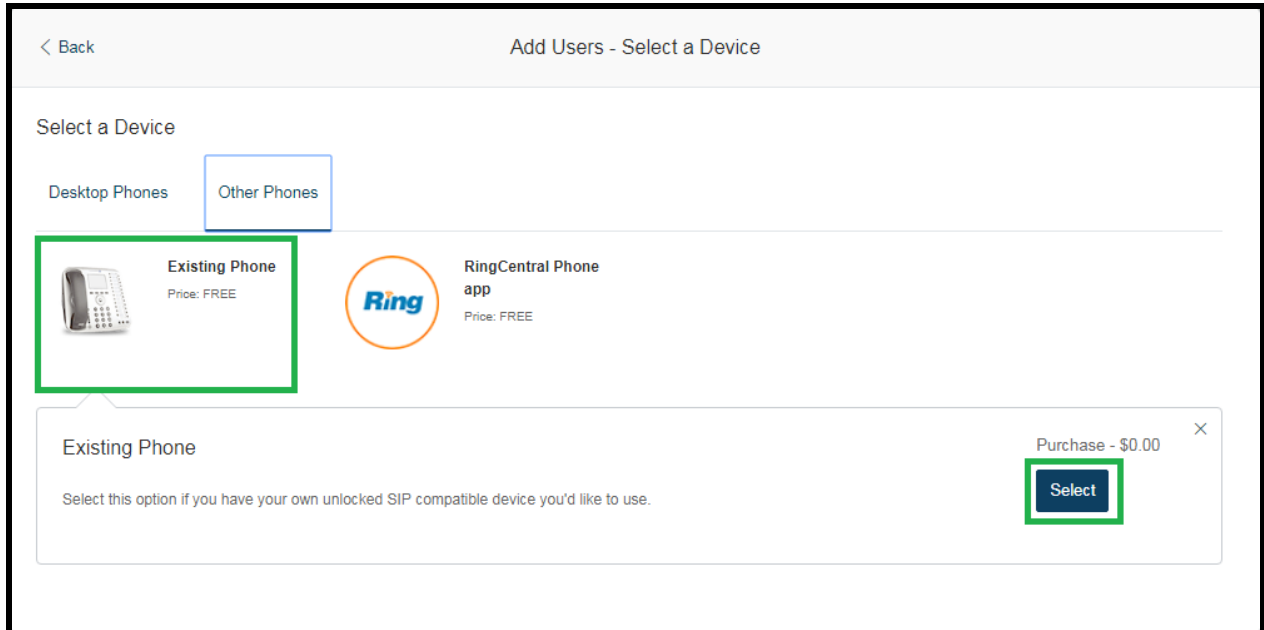
You can add multiple users at a time if they will all use the same area code. [Learn More](#)

| | | | | |
|-----------------|--------|-----------|----------------------|-----|
| Number of Users | State | Area Code | Device | |
| 1 | Select | Select | Select a Device... > | Add |

Back Next

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

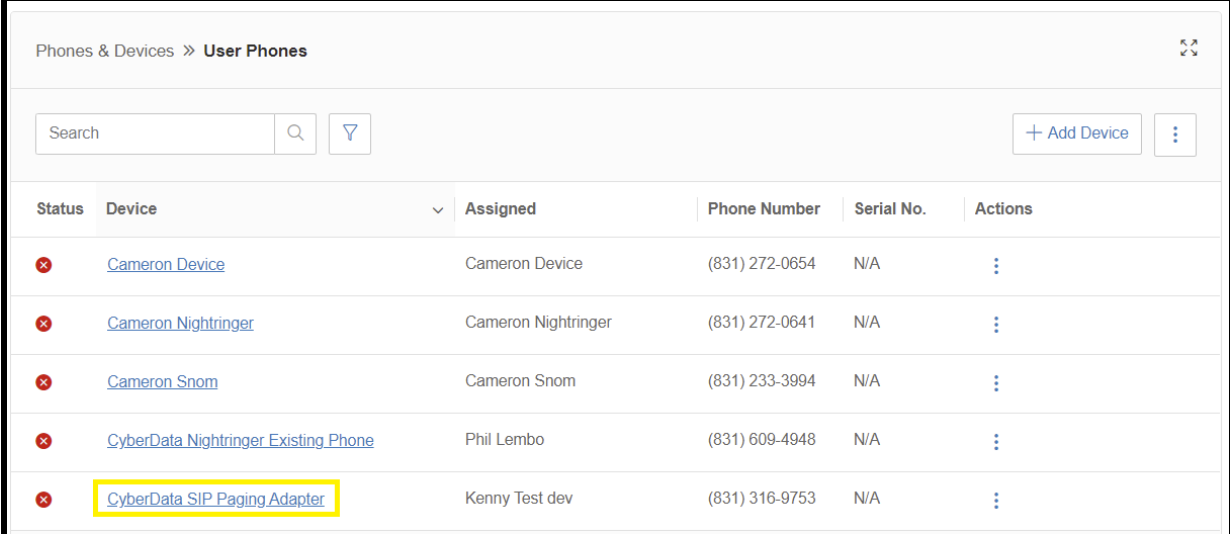
Figure 4-17: Select Phone Type



5. The process will lead through a six-step ordering process to set up a RingCentral Digital Line. Click the **Select** button to choose an **Existing Phone** and follow the steps in the ordering window to complete the order.

- From the **Phones & Devices** menu, select **User Phones** and select the user phone designated for the SIP Paging Adapter.

Figure 4-18: Select User



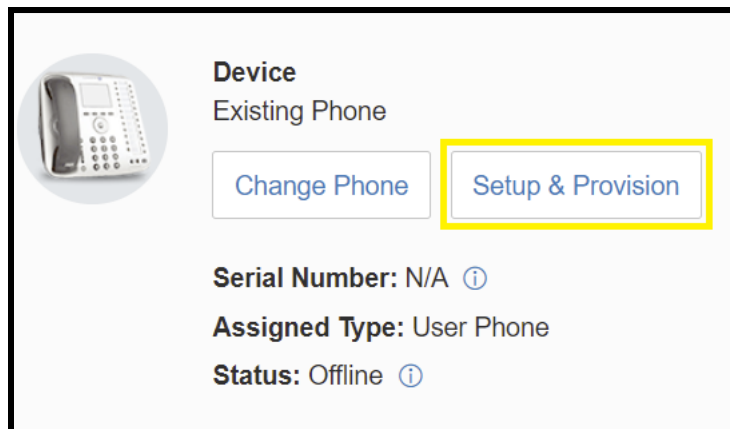
Phones & Devices » User Phones

Search [] [] [] [+ Add Device] [⋮]

| Status | Device | Assigned | Phone Number | Serial No. | Actions |
|--------|--|---------------------|----------------|------------|---------|
| ✘ | Cameron Device | Cameron Device | (831) 272-0654 | N/A | ⋮ |
| ✘ | Cameron Nightringer | Cameron Nightringer | (831) 272-0641 | N/A | ⋮ |
| ✘ | Cameron Snom | Cameron Snom | (831) 233-3994 | N/A | ⋮ |
| ✘ | CyberData Nightringer Existing Phone | Phil Lembo | (831) 609-4948 | N/A | ⋮ |
| ✘ | CyberData SIP Paging Adapter | Kenny Test dev | (831) 316-9753 | N/A | ⋮ |

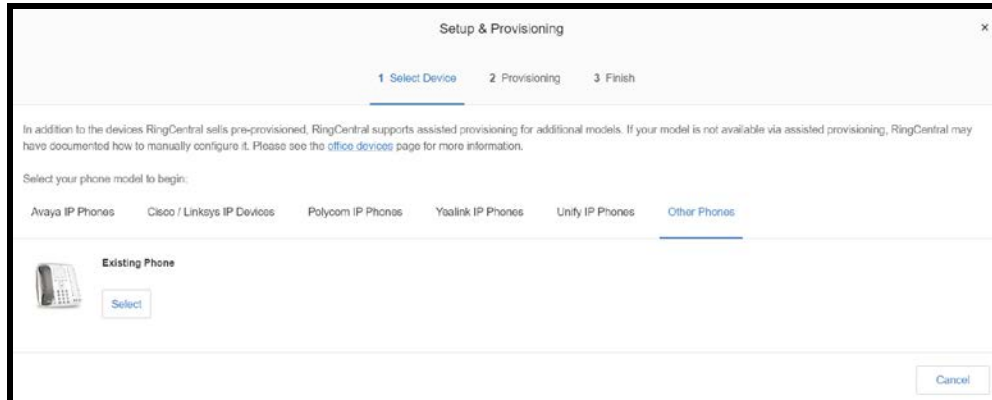
- From the Device's page press the **Setup & Provision** button.

Figure 4-19: Setup & Provision



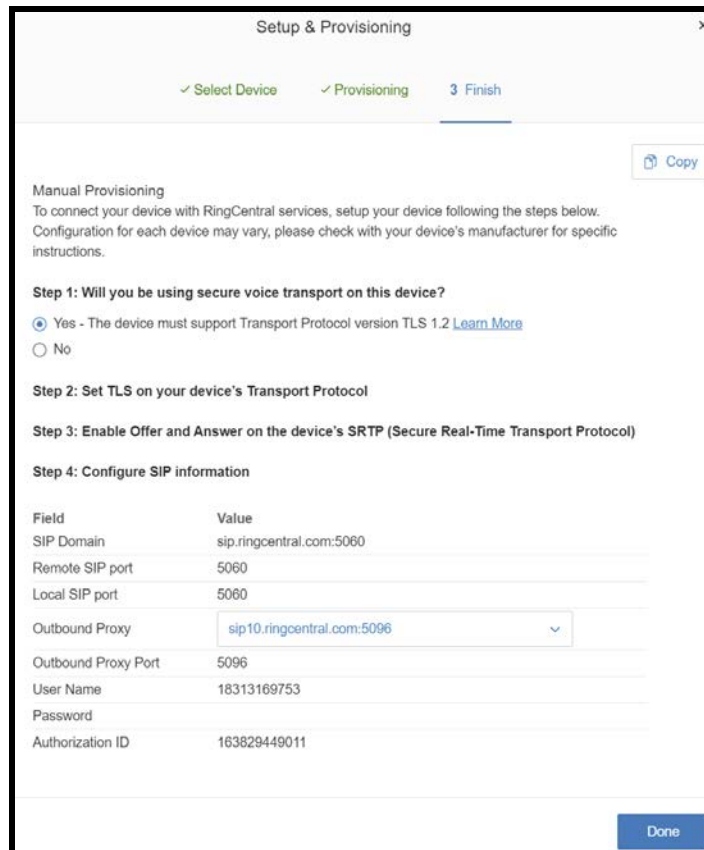
- A popup window labeled **Setup & Provisioning** will appear. Select **Other Phones** and click **Existing Phone**.

Figure 4-20: Existing Phone



9. A popup window labeled **Assisted Generic IP Phone/Adaptor Provisioning** will appear. The provisioning information to register the primary extension with RingCentral. Make sure to select an Outbound proxy in your area.

Figure 4-21: IP Phone Provisioning Information



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 4-2: CyberData Configuration Settings

| | |
|--|---|
| Primary SIP Server field | From the Paging Device Provisioning Information popup: SIP Server/SIP Domain |
| Primary SIP User ID field | From the Paging Device Provisioning Information popup: User Name |
| Primary SIP Auth ID field | From the Paging Device Provisioning Information popup: Authorization ID |
| Primary SIP Auth Password field | From the Paging Device Provisioning Information popup: 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) |
| SIP Transport Protocol | TLS |
| TLS Version | 1.2 only (recommended) |
| Verify Server Certificate | Enabled |
| Set Time with NTP Server on boot | Enabled |
| S RTP | Enabled |

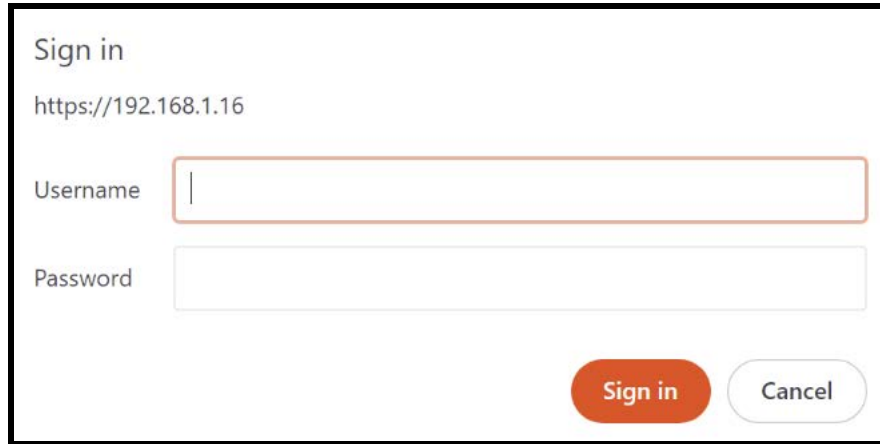
Configure SIP Parameters

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 4-22: Web Interface Login



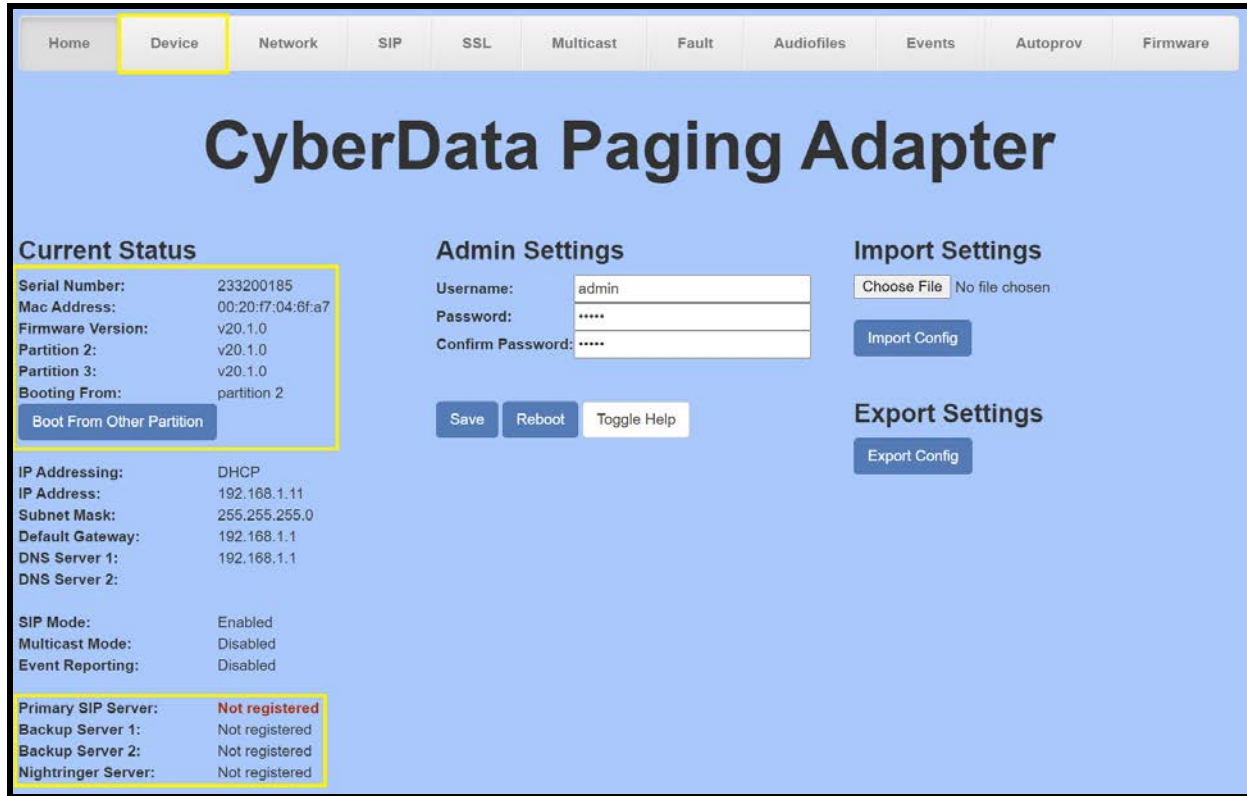
Sign in
https://192.168.1.16

Username

Password

Sign in Cancel

Figure 4-23: Home Page

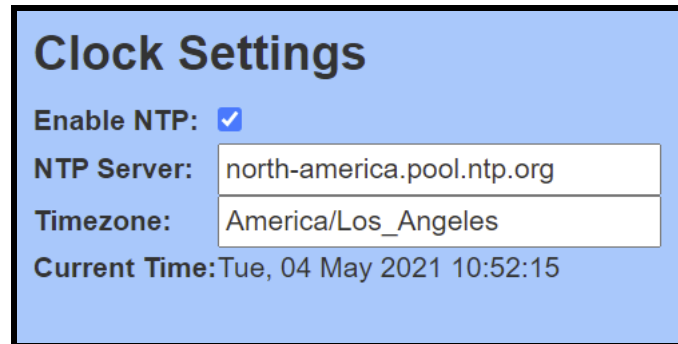


Note: The firmware version and registration status for the paging extension and Nightringer extensions appear here.

3. On the Home Page, click **Device** on the top toolbar to access the Device page.

4. On the **Device** page scroll to the **Clock Settings** section.

Figure 4-24: Clock Settings



Clock Settings

Enable NTP:

NTP Server: north-america.pool.ntp.org

Timezone: America/Los_Angeles

Current Time: Tue, 04 May 2021 10:52:15

5. Ensure Enable NTP is enabled.
6. Adjust the NTP Server as necessary.
7. Adjust the Timezone as necessary.
8. **Save.**
9. Press **SIP** to navigate to the SIP configuration page.
10. Set the **SIP Transport Protocol** to **TLS**.

Note: NTP enabled should appear in green.

11. Verify that **TLS Version** is set to **1.2** and **Verify Server Certificate** is checked.
12. Enter the provisioning information from the **Setup & Provisioning** popup window.
13. Set the **Re-registration interval** to **30**.
14. Set the **Keep Alive Period** to **0**.
15. Set **SRTP** to **Enabled**.
16. **Save and Reboot.**

Figure 4-25: SIP Configuration

| SIP Settings | | Nightringer Settings | |
|--|---|--|--------------------|
| Enable SIP operation: | <input checked="" type="checkbox"/> | SIP Server: | Host or IP address |
| Register with a SIP Server: | <input checked="" type="checkbox"/> | SIP User ID: | User ID |
| Buffer SIP Calls: | <input type="checkbox"/> | SIP Auth ID: | Auth ID |
| Primary SIP Server: | sip.ringcentral.com | SIP Auth Password: | Password |
| Primary SIP User ID: | 18313169753 | Re-registration Interval (in seconds): | 360 |
| Primary SIP Auth ID: | 163829449011 | | |
| Primary SIP Auth Password: | ***** | | |
| Re-registration Interval (in seconds): | 30 | | |
| Backup SIP Server 1: | Host or IP address | | |
| Backup SIP User ID: | User ID | | |
| Backup SIP Auth ID: | Auth ID | | |
| Backup SIP Auth Password: | Password | | |
| Re-registration Interval (in seconds): | 360 | | |
| Backup SIP Server 2: | Host or IP address | | |
| Backup SIP User ID: | User ID | | |
| Backup SIP Auth ID: | Auth ID | | |
| Backup SIP Auth Password: | Password | | |
| Re-registration Interval (in seconds): | 360 | | |
| Remote SIP Port: | 5060 | | |
| Local SIP Port: | 5060 | | |
| SIP Transport Protocol: | TLS <input checked="" type="checkbox"/> NTP enabled | | |
| TLS Version: | 1.2 only (recommended) | | |
| Verify Server Certificate: | <input type="checkbox"/> | | |
| Outbound Proxy: | sip10.ringcentral.com | | |
| Outbound Proxy Port: | 5096 | | |
| Use Cisco SRST: | <input type="checkbox"/> | | |
| Disable rport Discovery: | <input type="checkbox"/> | | |
| Keep Alive Period: | 0 | | |

| Call Disconnection | |
|-----------------------------|---|
| Terminate Call after delay: | 0 |

| Audio Codec Selection | |
|-----------------------|---------------------|
| Codec: | PCMU (G.711, u-law) |

| RTP Settings | |
|------------------------|--------------------------|
| RTP Port (even): | 10500 |
| Asymmetric RTP: | <input type="checkbox"/> |
| Jitter Buffer: | 50 |
| RTP Encryption (SRTP): | Mandatory |

Autoprovisioning

If autoprovisioning the device, use the SIP Settings in the autoprovisioning template to register 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/collections/sip/products/011393>

Be sure to use the autoprovisioning template for the firmware version running on the device. 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 4-26: Autoprovisioning Template Example

```
<!--
<SIPSettings>
  <sip_enable>1</sip_enable>
  <sip_register>1</sip_register>
  <sip_unregister>0</sip_unregister>
  <sip_proxy>sip10.ringcentral.com</sip_proxy>
  <sip_proxy_port>5096</sip_proxy_port>
  <use_cisco_srst>0</use_cisco_srst>
  <local_sip_port>5060</local_sip_port>
  <keepalive>0</keepalive>
  <call_timeout>0</call_timeout>
  <disable_rport_discovery>0</disable_rport_discovery>
  <rtp_port>10500</rtp_port>
  <asymmetric_rtp>0</asymmetric_rtp>
  <jitterbuffer>50</jitterbuffer>
  <default_codec>1</default_codec>
  <sip_transport>2</sip_transport>
  <sip_tls_version>0</sip_tls_version>
  <sip_verify_server_cert>0</sip_verify_server_cert>
  <sip_rtp_encryption>2</sip_rtp_encryption>
  <buffer_sip_page>0</buffer_sip_page>
</SIPSettings>

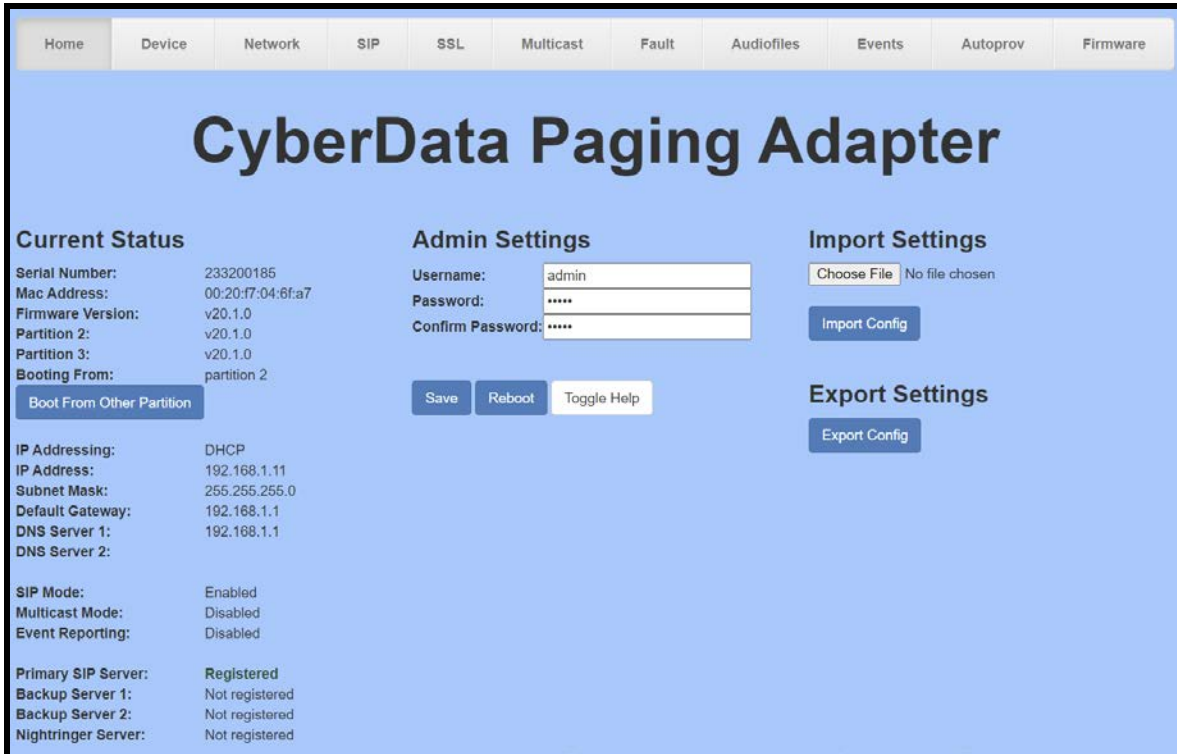
<SIPServerSettings>
  <index0>
    <server>sip.ringcentral.com</server>
    <port>5060</port>
    <userid>18313169753</userid>
    <authid>163829449011</authid>
    <password>*****</password>
    <registration_timeout>30</registration_timeout>
  </index0>
  <index1>
  <index2>
  <index3>
</SIPServerSettings>
```

***Note:** These example values are published only for reference. The SIPAuthPassword value should be the actual value from the **Setup & Provisioning** popup window.*

Verify the Extension is Registered

After the Speaker 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.

Figure 4-27: Phone Details – Status



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

5.0 Configuration Procedure: UDP Paging Extension

When integrating with RingCentral, the paging adapter can be provisioned as a Paging Device associated with a user extension. Provisioning as a Paging Device does not allow the caller to receive audio from the paging adapter to hear voice prompts from the page menu or enter DTMF digits for page menu selections, group passwords, or pass-through to an analog amplifier or zone controller for analog zone control.

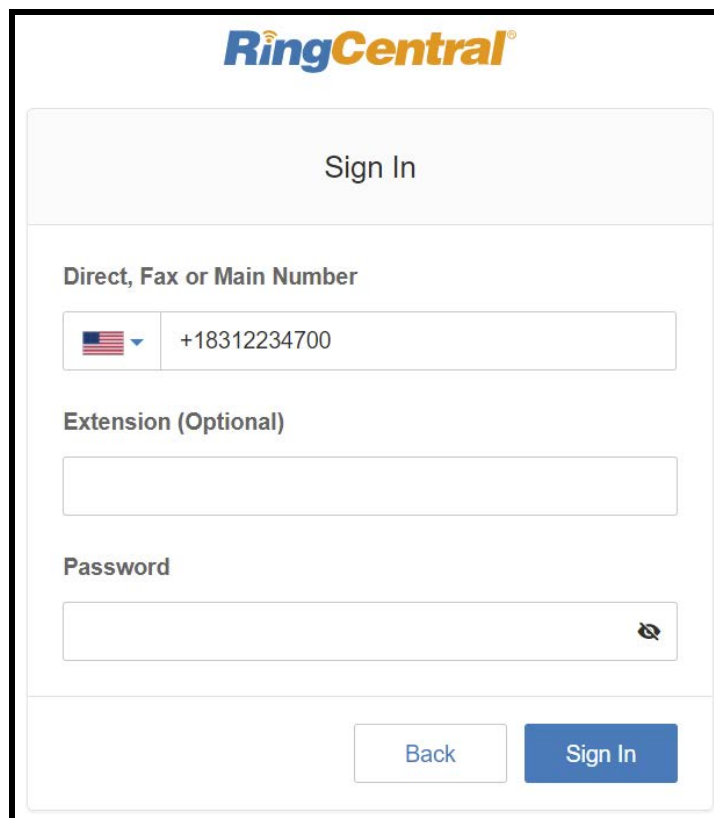
Add a Paging Device

This section describes the process of creating a user, provisioning an IP phone, and registering the primary extension that you will use for paging with RingCentral. First, you must designate a RingCentral User for the paging adapter.

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>.

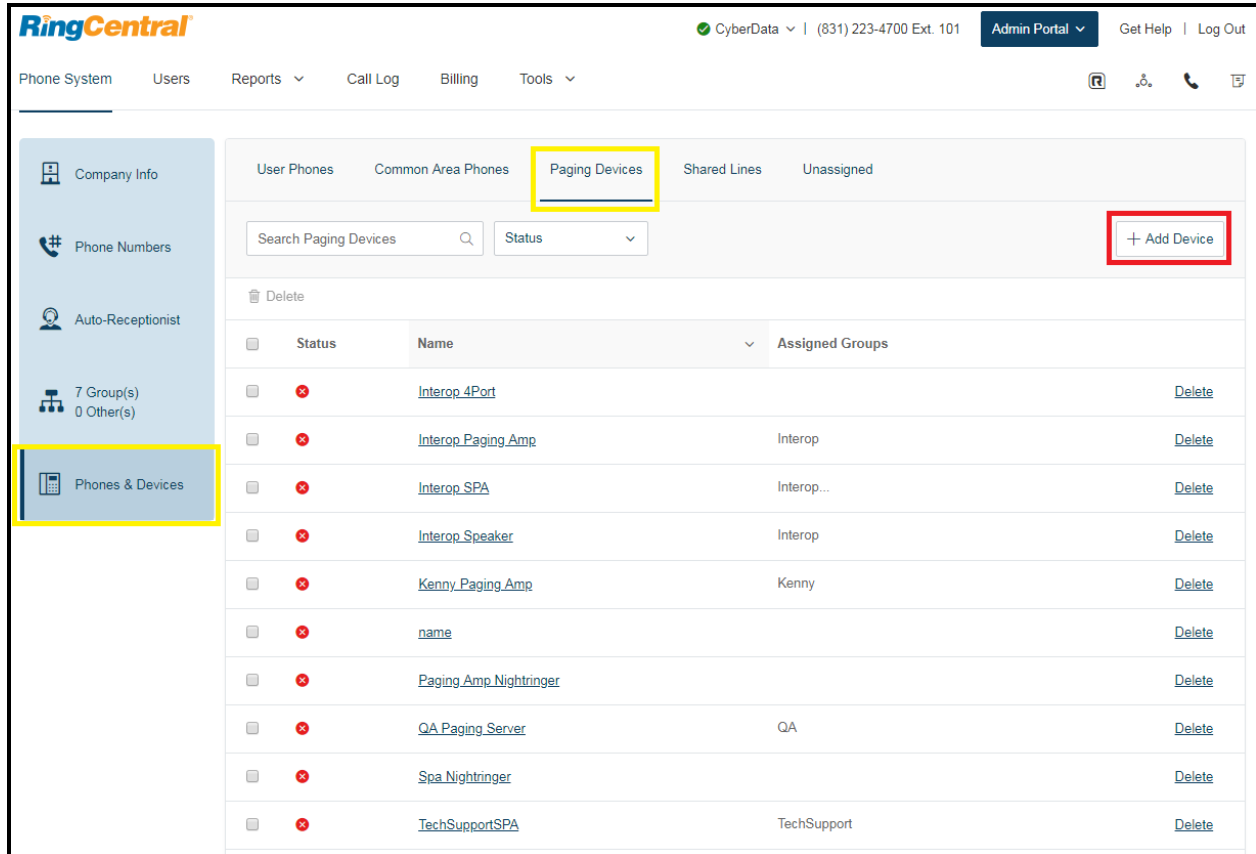
Figure 5-1: RingCentral Admin Portal Login



The screenshot shows the RingCentral Admin Portal login interface. At the top is the RingCentral logo. Below it is a 'Sign In' header. The form contains three main sections: 'Direct, Fax or Main Number' with a country dropdown (USA) and a text field containing '+18312234700'; 'Extension (Optional)' with an empty text field; and 'Password' with an empty text field and a toggle icon. At the bottom are 'Back' and 'Sign In' buttons.

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

Figure 5-2: Add Device



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

Figure 5-3: Add Paging Device - Nickname

The following paging devices are supported by RingCentral:

- CyberData SIP-enabled IP V2 Paging Speaker
- CyberData SIP-enabled IP V2 Paging Amplifier

Paging Device Nickname

CyberData SIP Paging Adapter

Cancel Next

4. A popup window labeled **Generic Paging Device Provisioning** will appear. You will use the provisioning information to register the paging adapter's primary extension with RingCentral.

Figure 5-4: Provisioning Information

×

✓ 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.

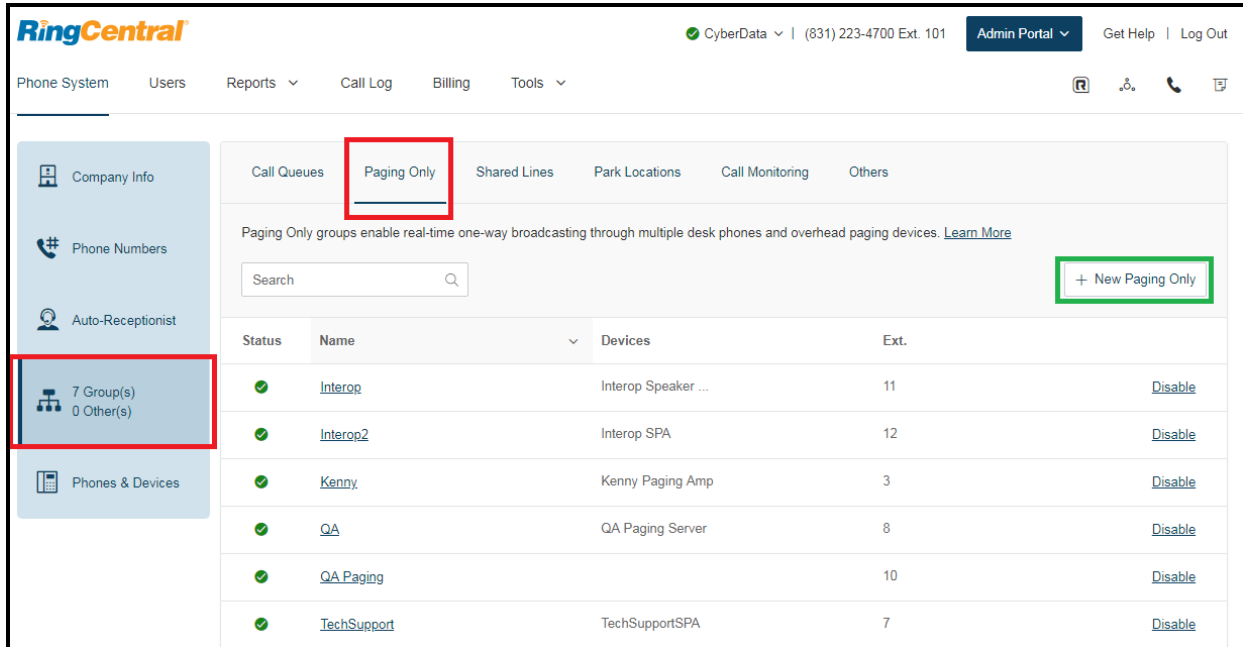
| Field | Value |
|---------------------|--------------------------|
| SIP Domain | sip.ringcentral.com |
| Remote SIP port | 5060 |
| Local SIP port | 5060 |
| Outbound Proxy | sip20.ringcentral.com |
| Outbound Proxy Port | 5090 |
| User Name | 18312234700*803301850011 |
| Authorization ID | 803301850011 |
| Password | |

Done

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

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

Figure 5-5: Add Group



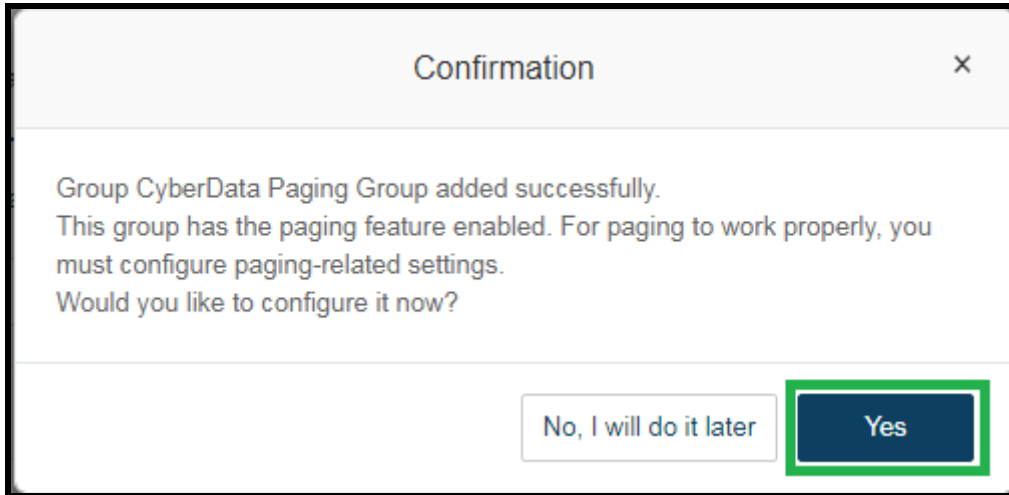
A popup window labeled **Add Paging Group** will appear. Enter an available extension number and name for your *Paging Only* group, then click **Save**.

Figure 5-6: Add Paging Group

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

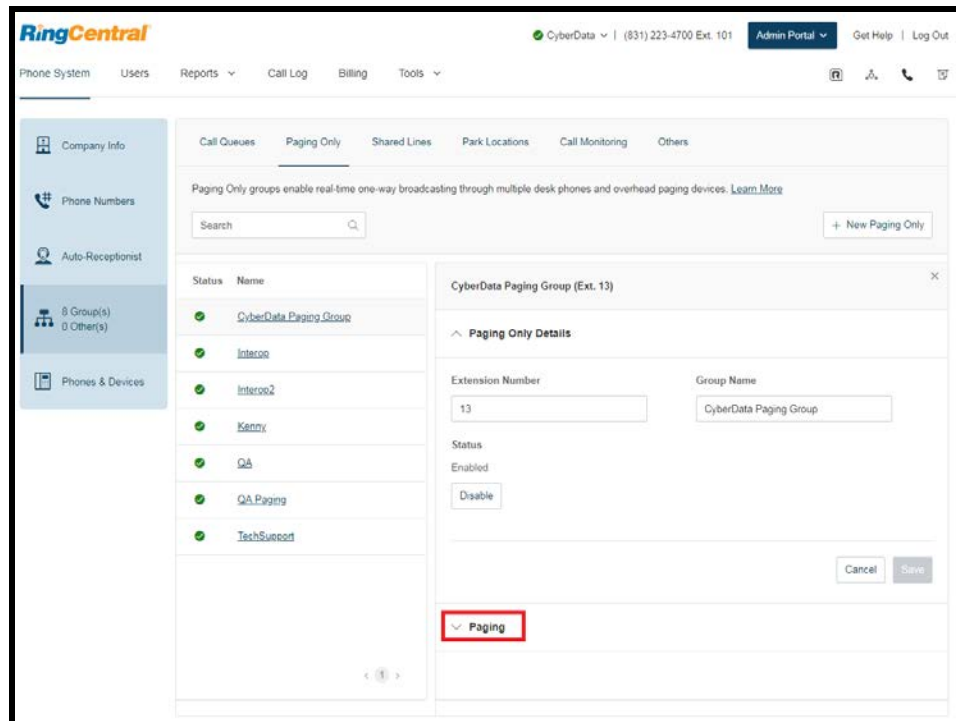
A confirmation screen will confirm the paging group has been created. Select **Yes** to configure paging settings.

Figure 5-7: 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 5-8: Group Paging Menu



- From the **Paging** menu, select **Devices to Receive Page**, then check the devices to add to the group and press **Save**.

Figure 5-9: Devices to Receive Page

^ **Paging**

Devices to Receive Page Users Allowed to Page this Group

Only-Paging capable phones are displayed in the list. You can select up to 25 devices.

Search Phone Type: All Phone T... ▾

Show All | Show Selected (3)

| <input type="checkbox"/> | Phone Type | Phone Name | Ext. |
|-------------------------------------|---------------|------------------------------|------|
| <input type="checkbox"/> | User Phone | Christina PolycomV VX300 | 104 |
| <input checked="" type="checkbox"/> | Paging Device | CyberData Paging Amp | - |
| <input checked="" type="checkbox"/> | Paging Device | CyberData SIP Paging Adapter | - |
| <input type="checkbox"/> | Paging Device | CyberData SIP Paging Server | - |
| <input checked="" type="checkbox"/> | Paging Device | Paging Amp Nightringer | - |
| <input type="checkbox"/> | User Phone | QA Polycom | 602 |
| <input type="checkbox"/> | Paging Device | SIP IP66 Outdoor Horn | - |

Total: 7 Show: 10 ▾ < 1 >

Cancel Save

- 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 5-10: Users Allowed to Page This Group

The screenshot shows a web interface for configuring paging settings. At the top, there is a 'Paging' header. Below it, there are two tabs: 'Devices to Receive Page' and 'Users Allowed to Page this Group'. The 'Users Allowed to Page this Group' tab is selected and highlighted with a green box. Below the tabs, there is a search bar and a dropdown menu for 'All Departments'. Below that, there are two links: 'Show All' and 'Show Selected (3)'. The main part of the interface is a table with columns for 'Name', 'Ext.', and 'Department'. The table contains the following rows:

| <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 PolycomV VX300 | 104 | |
| <input checked="" type="checkbox"/> | Interop Snom360 | 103 | |
| <input type="checkbox"/> | Interop Strobe | 942 | |
| <input type="checkbox"/> | Kenny phone 2 | 938 | |

At the bottom of the table, there is a 'Total: 23' label and a 'Show: 10' dropdown menu. Below that, there are two buttons: 'Cancel' and 'Save'. The 'Save' button is highlighted with a green box.

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

Configure SIP Parameters

You 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 paging server'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 5-1: CyberData Configuration Settings

| | |
|--|---|
| Primary SIP Server field | From the Paging Device Provisioning Information popup: SIP Server/SIP Domain |
| Primary SIP User ID field | From the Paging Device Provisioning Information popup: User Name |
| Primary SIP Auth ID field | From the Paging Device Provisioning Information popup: Authorization ID |
| Primary SIP Auth Password field | From the Paging Device Provisioning Information popup: 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) |

Web Configuration

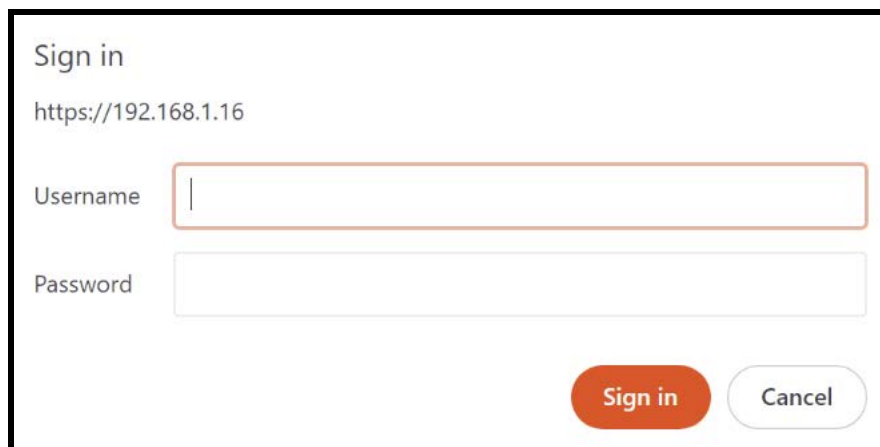
If you are configuring through the web interface, use the following steps to login to the web interface of your CyberData device.

1. Click **Launch Browser** from the CyberData Discovery Utility or point your 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

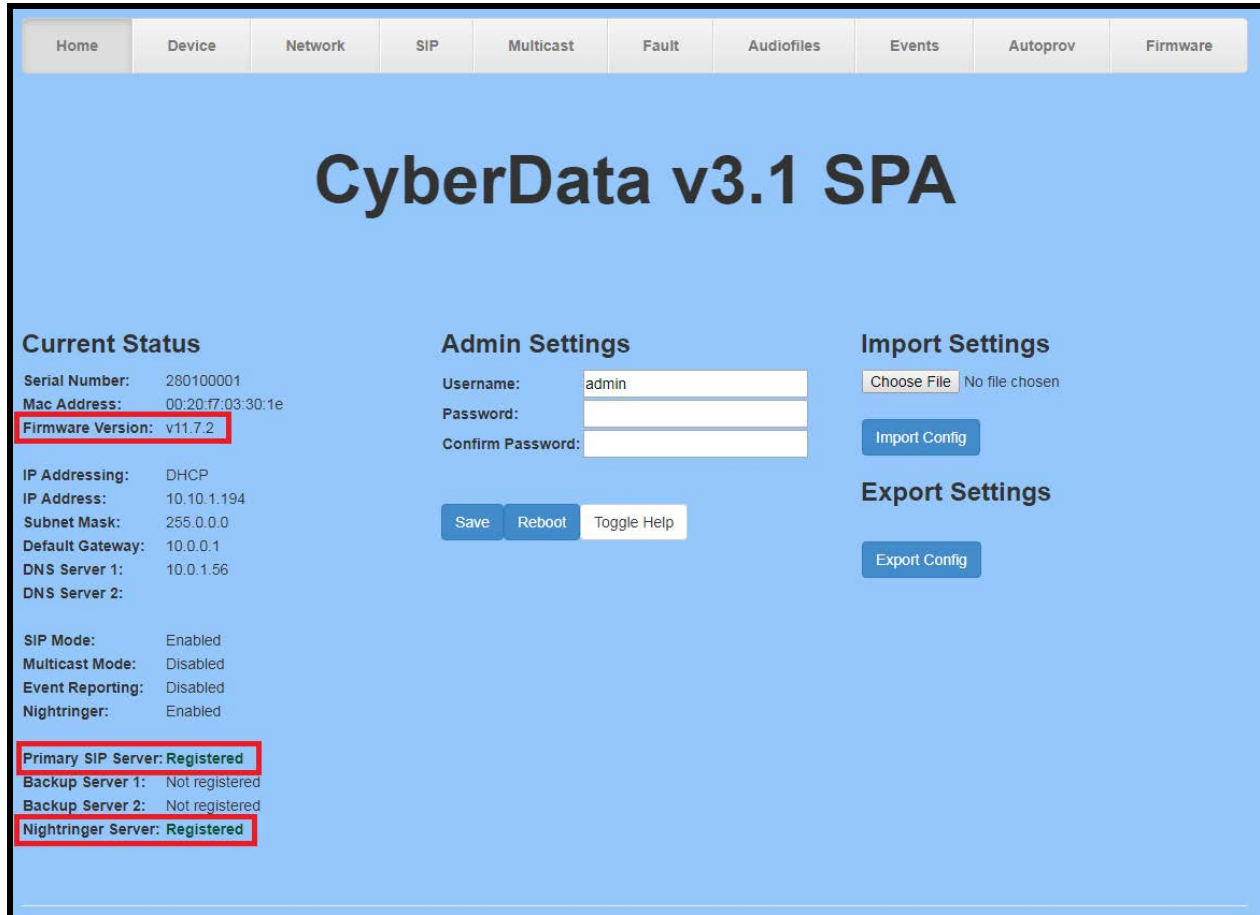
Password: admin

Figure 5-11: Web Interface Login



The screenshot shows a web browser window with a login form. The title of the window is "Sign in". Below the title, the URL "https://192.168.1.16" is displayed. The form contains two input fields: "Username" and "Password". The "Username" field is currently empty and has a red border. The "Password" field is also empty. At the bottom right of the form, there are two buttons: "Sign in" (a red button) and "Cancel" (a white button with a grey border).

Figure 5-12: Home Page of SPA Web Interface



3. On the Home Page, click **SIP Config** on the left-hand side of your 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 SPA as its source port for the paging 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 5-13: SIP Configuration

The screenshot displays the configuration page for a CyberData v3.1 SPA. The interface includes a navigation menu at the top with tabs for Home, Device, Network, SIP, Multicast, Fault, Audiofiles, Events, Autoprovisioning, and Firmware. The main content area is titled "CyberData v3.1 SPA" and is divided into several sections:

- SIP Settings:** Includes checkboxes for "Enable SIP operation" (checked), "Register with a SIP Server" (checked), and "Use Cisco SRST" (unchecked). Primary SIP fields are highlighted in yellow: Primary SIP Server (sip.ringcentral.com), Primary SIP User ID (18312234700*803301850011), Primary SIP Auth ID (803301850011), and Primary SIP Auth Password (masked). Backup SIP fields (Server 1, User ID 1, Auth ID 1, Password 1, and Server 2, User ID 2, Auth ID 2, Password 2) are empty. Remote SIP Port (5060) and Local SIP Port (5060) are set. Outbound Proxy (sip20.ringcentral.com) and Outbound Proxy Port (5090) are also highlighted in yellow. Other options include "Disable rport Discovery" (unchecked), "Buffer SIP Calls" (unchecked), "Re-registration Interval (in seconds)" (30), "Unregister on Boot" (unchecked), and "Keep Alive Period" (0).
- Nightringer Settings:** "Enable Nightringer" is unchecked. Fields include SIP Server (10.0.0.253), Remote SIP Port (5060), Local SIP Port (5061), Outbound Proxy (empty), Outbound Proxy Port (0), User ID (241), Authenticate ID (241), Authenticate Password (masked), and Re-registration Interval (360).
- Call Disconnection:** "Terminate Call after delay" is set to 0.
- Codec Selection:** "Force Selected Codec" is checked, and the Codec is set to "PCMU (G.711, u-law)".
- RTP Settings:** RTP Port (10500), Jitter (50), and Buffer (50) are configured.

At the bottom left, there are three buttons: "Save" (highlighted with a green box), "Reboot", and "Toggle Help".

Autoprovisioning

If you are autoprovisioning the SPA, use the SIP Settings in the autoprovisioning template to register the SPA with RingCentral. An autoprovisioning template is provided in the respective firmware folder available on the **Downloads** tab of the product webpage here:

<http://www.cyberdata.net/voip/011233/>

Be sure to use the autoprovisioning template for the firmware version running on the SPA. 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 5-14: 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>18312234700*194773016011</SIPUserID>
  <SIPAuthID>194773016011</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>
```

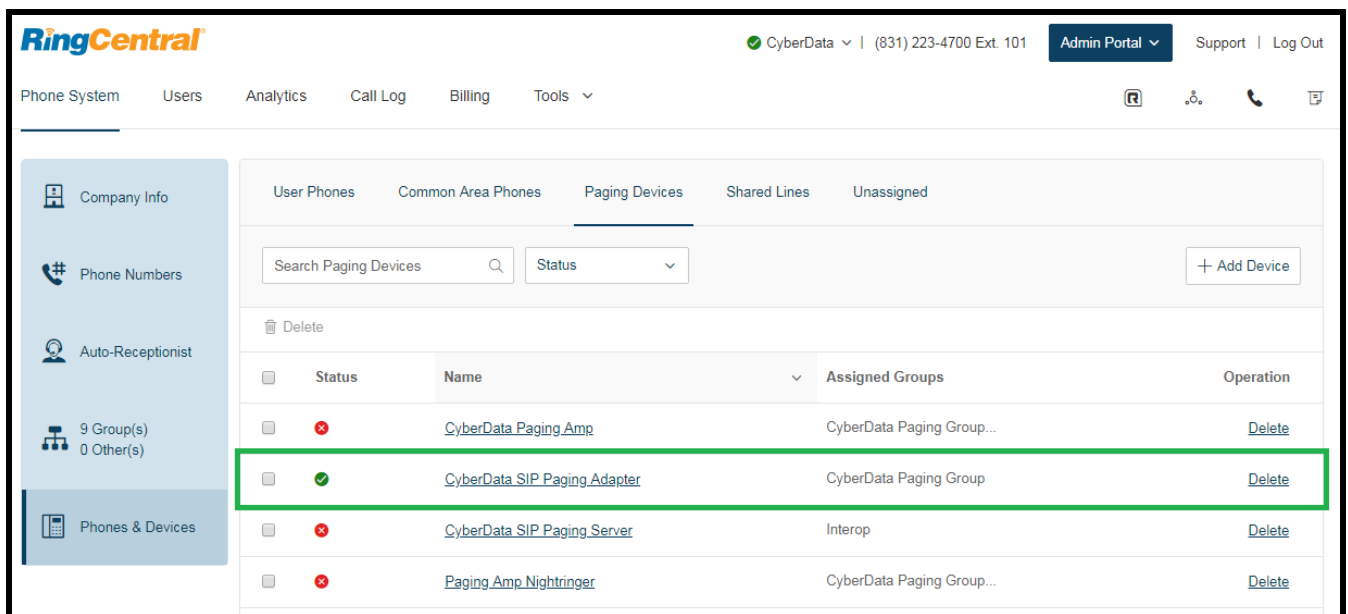
Note: These example values are published only for reference. The SIPAuthPassword value should be the actual value from the [Generic Paging Device Provisioning](#) popup window.

Verify the Paging Extension is Registered

After the SPA has rebooted and initialized to store changes, refresh the Home page of the web interface. Your device should show as **[Registered with SIP Server]** in green text on the bottom of the Home Page of the web interface as well as at the top of the SIP Configuration page next to *Enable SIP Operation*. See [Figure 5-17](#) and [Figure 5-18](#).

Additionally, you may verify the paging extension is registered with RingCentral through the Admin Portal. From the **Phones & Devices** menu, select **Devices** and the Paging Device you just created for the SPA. The status should show as “online” in the **Device Details**.

Figure 5-15: Device Details – Status



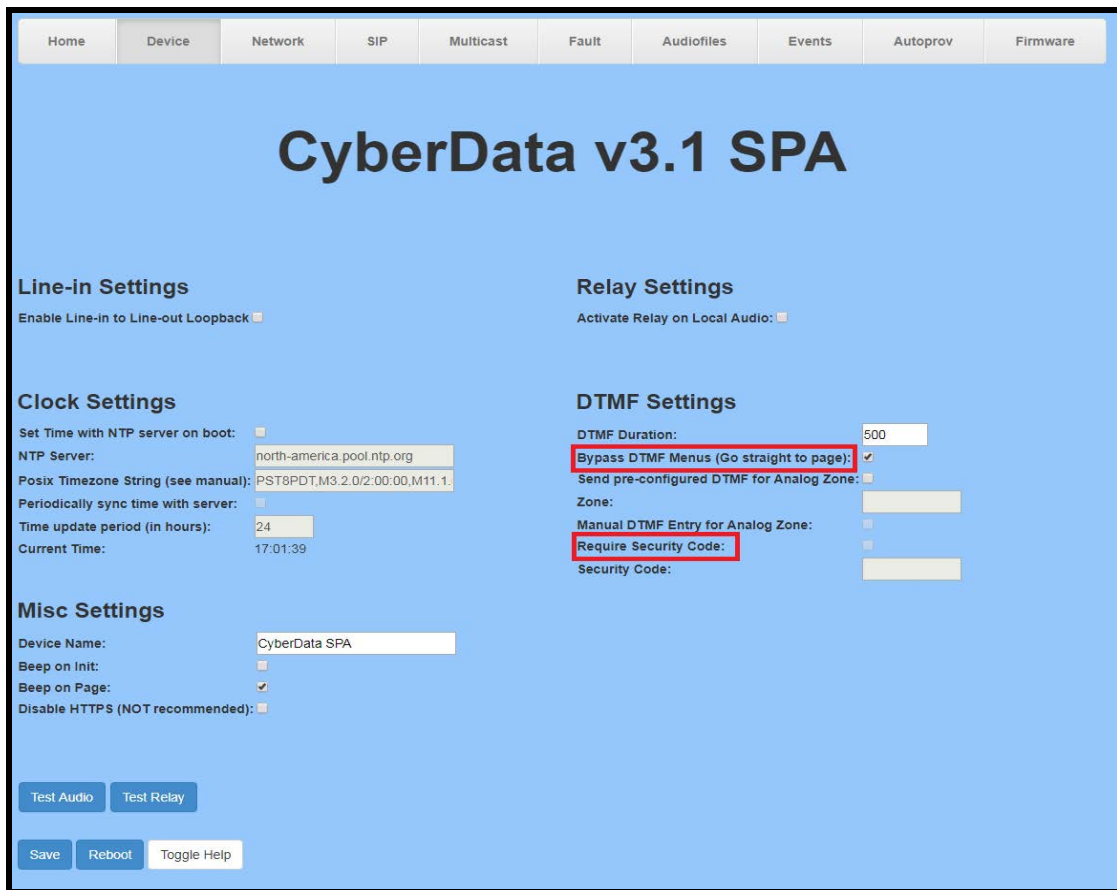
Bypass Voice-Prompted Paging Menu

There is one final step after registering the paging extension for auto-answer paging. On default, a caller to the SPA's primary extension will be voice-prompted to enter digits into an IP phone for paging menu selections. The paging menu also prompts the the opportunity to enter a security code if enabled.

When provisioned as a RingCentral Paging Device, it is necessary to configure the SPA to bypass the paging menu and disable the Security Code (disabled on default) in order to allow the SPA to auto-answer calls to the RingCentral Paging Only group for live paging. Otherwise, the SPA will wait to receive paging menu selections that are not possible to send to a Paging Device. This results in a failed page. RingCentral Paging Devices cannot receive DTMF digits during a call to the Paging Only group.

The necessary settings to disable are located on the **Device Configuration** page of the web interface. Make sure the *Bypass DTMF Menus (Go straight to page)* is checked and *Require Security Code* is unchecked (unchecked on default) or else pages to the SPA will not be played out of the attached analog devices.

Figure 5-16: Device Configuration



Alternately, set *Bypass DTMF* to **Yes** and *Use Security Code* to **No** under **DeviceSettings** in the autoprovisioning template if you are autoprovisioning the SPA.

Figure 5-17: Autoprovisioning Template Example – Device Settings

```
<DeviceSettings>
  <DisableHTTPS>Yes</DisableHTTPS>
  <ActivateRelayOnLocalAudio>No</ActivateRelayOnLocalAudio>
  <BeepOnInitialization>No</BeepOnInitialization>
  <BeepBeforePage>No</BeepBeforePage>
  <EnableLineLoopback>No</EnableLineLoopback>
  <DTMFDuration>500</DTMFDuration>
  <BypassDTMF>Yes</BypassDTMF>
  <AllowZoneEntry>No</AllowZoneEntry>
  <UseSecurityCode>No</UseSecurityCode>
  <PageSecurityCode></PageSecurityCode>
</DeviceSettings>
```

Note: While a security code cannot be used when the SPA’s primary extension is provisioned as a Paging Device, you can restrict users allowed to page through the [Paging Only group’s Paging menu](#) in the RingCentral Admin Portal.

Beep on Page

RingCentral sends a beep before transmitting the voice page made by the caller to the Paging Only group. It is not necessary to enable *Beep on Page*, also known as *BeepBeforePage* in the autoprovisioning template, on the SPA. This setting is disabled on default.

If you are hearing an unusual sounding beep before voice pages play when making a call to the Paging Only group, disable the SPA’s *Beep on Page*.

This setting is located on the **Device Configuration** page of the web interface (see [Figure 5-21](#)). It is also listed under **DeviceSettings** in the autoprovisioning template (see [Figure 5-22](#)).

Make a Test Call

Once your primary extension has registered with RingCentral, you may use any allowed RingCentral phone to dial the paging extension.

6.0 Configuration Procedure: UDP Voice-Prompted Paging

When an installation requires more flexibility than auto-answer live paging, the SPA's primary extension can be provisioned as an IP phone associated with a user extension. Provisioning as a IP Phone allows the caller to receive audio from the SPA to hear voice prompts from the SPA's paging menu or enter DTMF digits for paging menu selections. Provision the SPA's extension as an IP phone to enable the following features:

- Playing up to 9 configurable stored pages
- Security code

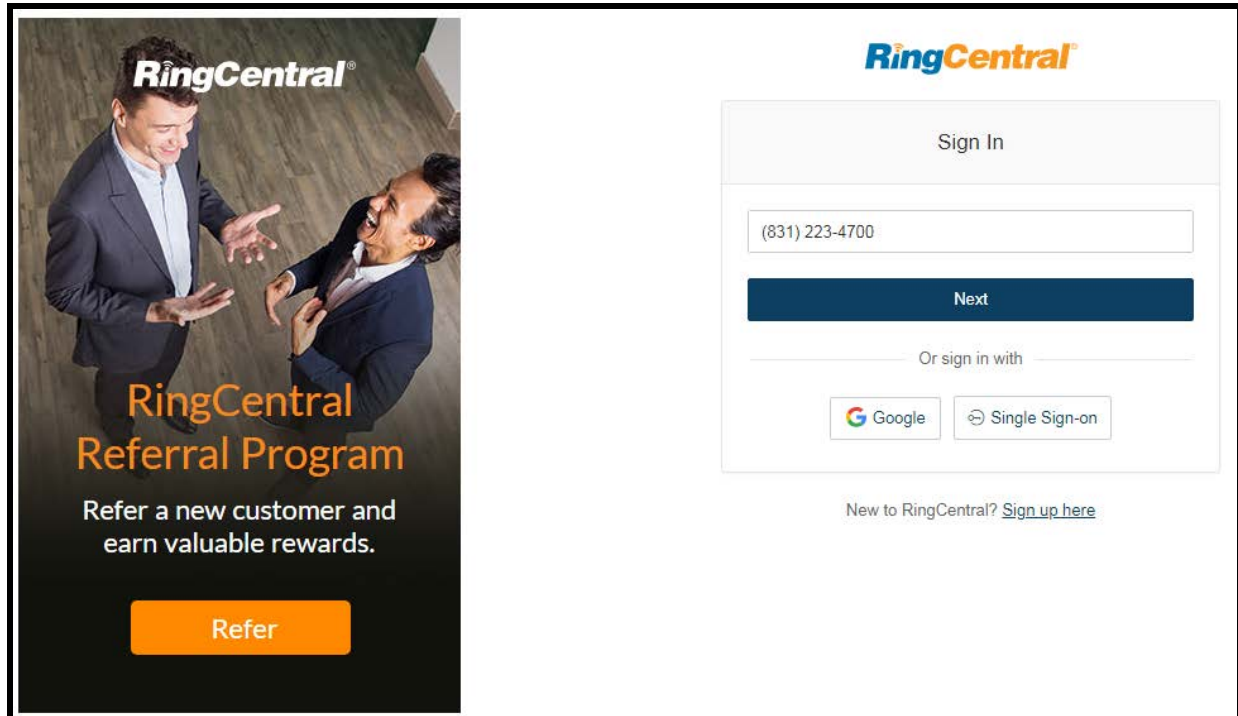
Add an IP Phone

This section describes the process of creating a user, provisioning an IP phone, and registering the primary extension that you will use for paging with RingCentral. First, you must designate a RingCentral User for the SPA.

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 6-1: RingCentral Admin Portal Login



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

Figure 6-2: Add User Button

The screenshot shows the RingCentral Admin Portal interface. The 'Users' tab is selected in the top navigation bar. On the left sidebar, 'User list' is highlighted. The main content area shows a table of users with columns for Status, Name, Number, Ext., Roles, Department, and Msg. A '+ Add User' button is highlighted with a green box in the top right of the user list area.

| Status | Name | Number | Ext. | Roles | Department | Msg. | |
|-----------|-------------------|----------------|------|---------------------|------------|-------|------------------------|
| Available | Available User2 | | 945 | Standard (Intern... | | 0 / 0 | Disable |
| Available | Cameron Device | (831) 272-0654 | 934 | Standard (Intern... | | 0 / 0 | Resend Invite Delete |
| Available | Cameron Nightr... | (831) 272-0641 | 935 | Standard (Intern... | | 0 / 0 | Resend Invite Delete |
| Available | Cameron Snom | (831) 233-3994 | 932 | Super Admin | | 3 / 3 | Disable |
| Available | CyberData Cor... | (303) 872-5806 | 101 | Super Admin | | 9 / 9 | |
| Available | Group User | | 943 | Standard (Intern... | | 3 / 3 | Disable |
| Available | Interop Polyc... | (831) 975-2610 | 104 | Standard (Intern... | | 1 / 1 | Disable |
| Available | Interop Snom360 | (831) 233-3992 | 103 | Super Admin | | 5 / 5 | |
| Available | Interop Strobe | (669) 900-4551 | 942 | Standard (Intern... | | 1 / 1 | Disable |
| Available | Kenny_phone_2 | (831) 741-4265 | 938 | Standard (Intern... | | 2 / 2 | Disable |
| Available | 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 6-3: 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 button options: "Domestic" (which is selected) and "International". At the bottom right of the window, there are two buttons: "Cancel" and "Next". The "Next" button is highlighted with a green border.

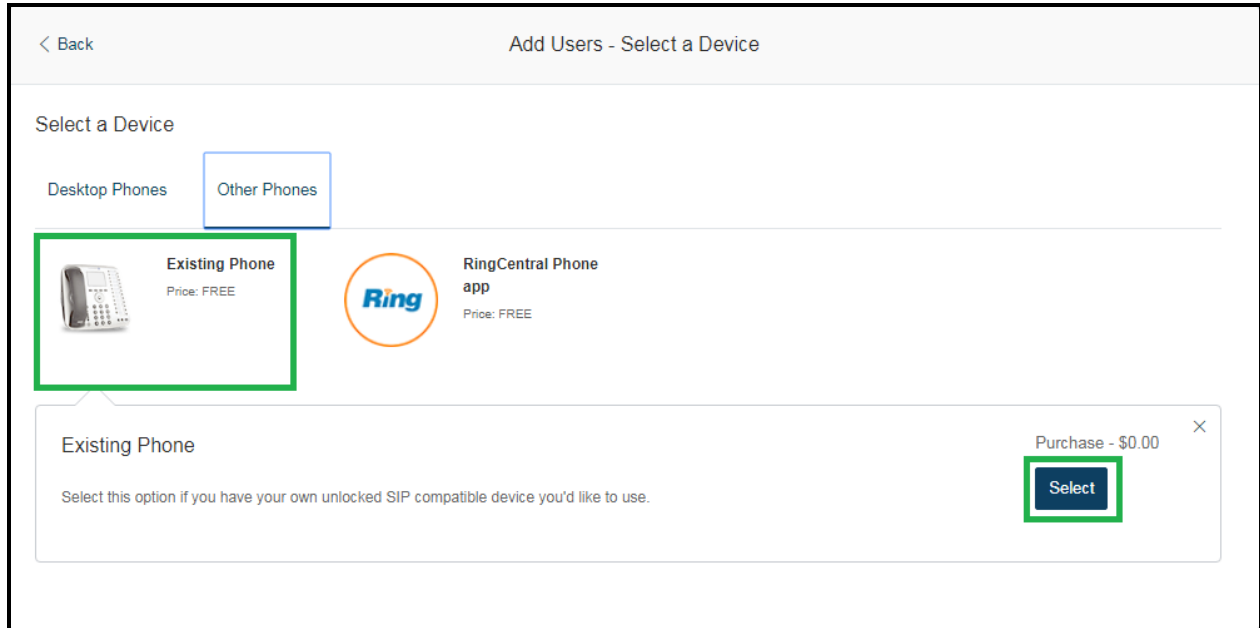
4. In the subsection **Add Users with Phones**, select the number of users, state, area code, and device.

Figure 6-4: Pick a Phone Number

The screenshot shows the "Add Users" modal window at step 2, "Add Users". The progress bar now shows "1 Location" as completed with a checkmark and "2 Add Users" as the active step. Below the progress bar are two tabs: "Add Users With Phones" (which is selected) and "Add Users Without Phones". Under the "Add Users With Phones" tab, there is a section titled "Account Status" with 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](#)". The main form area contains four input fields: "Number of Users" (with the value "1"), "State" (a dropdown menu with "Select" visible), "Area Code" (a dropdown menu with "Select" visible), and "Device" (a dropdown menu with "Select a Device... >" visible). The "Number of Users", "State", and "Area Code" fields are highlighted with a yellow border, and the "Device" field is highlighted with a green border. To the right of these fields is a grey "Add" button. At the bottom of the window, there are "Back" and "Next" buttons.

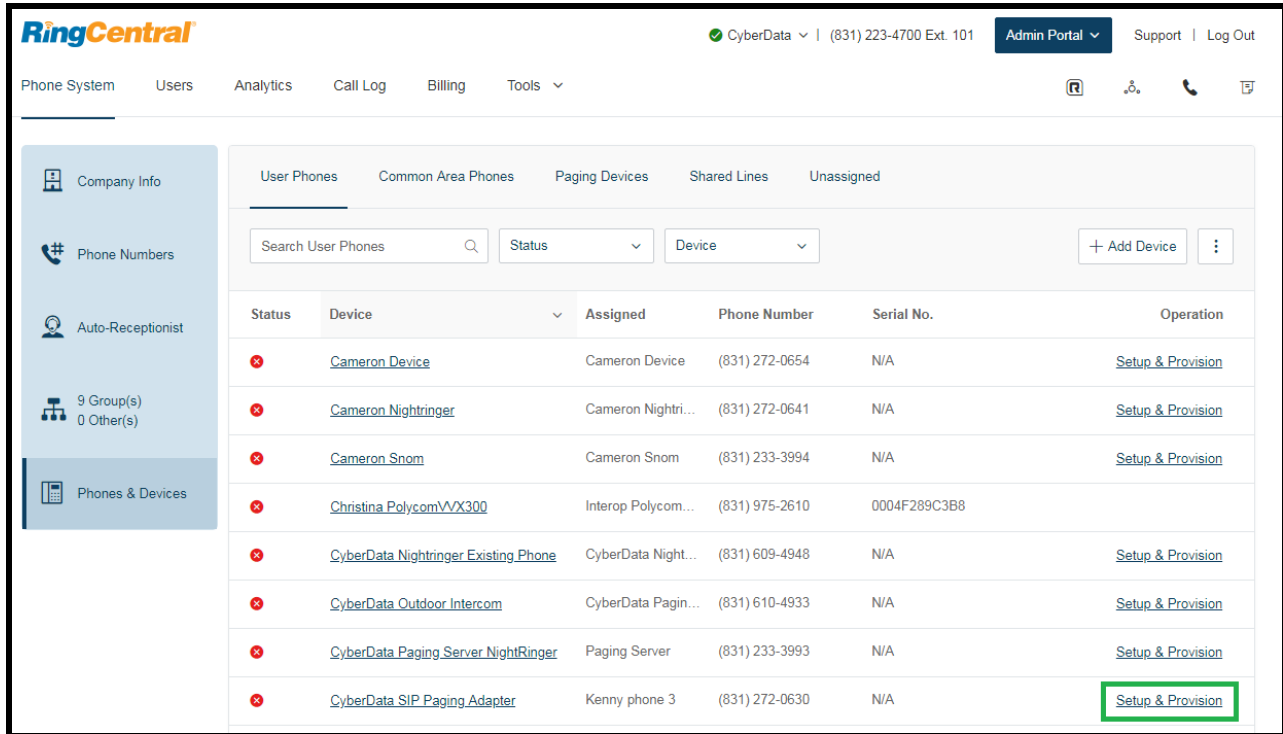
5. You will be asked to select a phone type. Choose **Other Phones**, and then make sure **Existing Phone** is selected. Press **Select**.

Figure 6-5: Select Phone Type



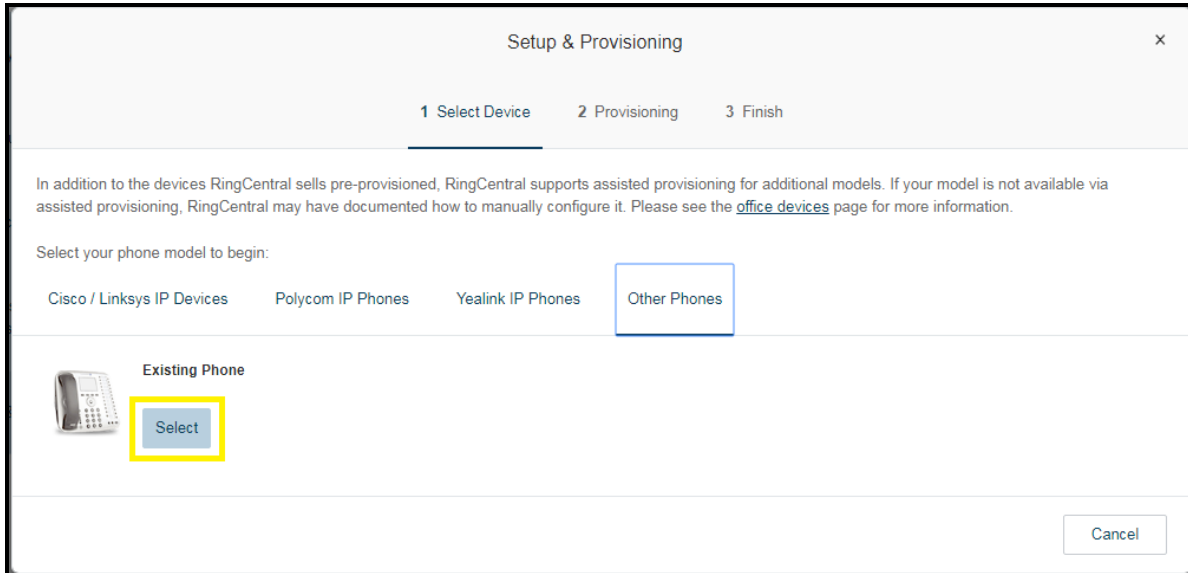
6. Next, you will be taken to a six-step ordering process to set up a RingCentral Digital Line. Click the **Select** button to choose an **Existing Phone** and follow the steps in the ordering window to complete your order.
7. From the **Phones & Devices** menu, select **User Phones** and select the user phone designated for the paging server. Click **Setup and Provision**.

Figure 6-6: Setup and Provision



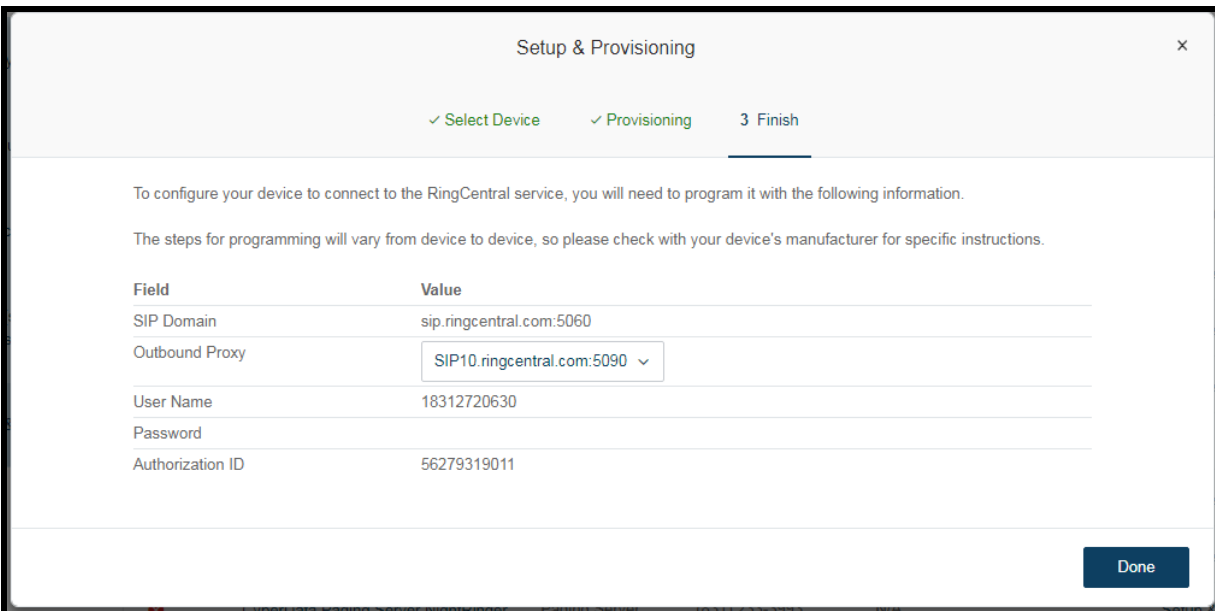
8. A popup window labeled **Assisted provisioning – Step 1** will appear. Select **Other Phone** and click **Next**.

Figure 6-8: Assisted provisioning



9. A popup window labeled **Assisted Generic IP Phone/Adaptor Provisioning** will appear. You will use the provisioning information to register the primary extension with RingCentral.

Figure 6-9: IP Phone Provisioning Information



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: SIP Fields Table

| | |
|--|---|
| Primary SIP Server field | From the Paging Device Provisioning Information popup: SIP Server/SIP Domain |
| Primary SIP User ID field | From the Paging Device Provisioning Information popup: User Name |
| Primary SIP Auth ID field | From the Paging Device Provisioning Information popup: Authorization ID |
| Primary SIP Auth Password field | From the Paging Device Provisioning Information popup: 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) |

Configure SIP Parameters

If you are configuring through the web interface, use the following steps to login to the web interface of your SPA and register the primary extension with RingCentral.

10. Click **Launch Browser** from the CyberData Discovery Utility or point your browser to the CyberData device's IP address to access the Home Page of the web interface.
11. Enter the web login credentials when prompted and click the **Log In** button.
12. On the Home Page, click **SIP Config** on the left-hand side of your screen to access the SIP Configuration page.
13. 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 SPA as its source port for the primary extension configured on this page.

14. Set the *Re-registration Interval (in seconds)* to **30 seconds**.
15. Set the *Keep Alive Period* to **0**.

Figure 6-10: SIP Configuration

The screenshot shows the configuration page for a CyberData v3.1 SPA. The interface has a top navigation bar with tabs: Home, Device, Network, SIP (selected), Multicast, Fault, Audiofiles, Events, Autoprovisioning, and Firmware. The main title is "CyberData v3.1 SPA".

SIP Settings

- Enable SIP operation:
- Register with a SIP Server:
- Use Cisco SRST:
- Primary SIP Server: sip.ringcentral.com
- Primary SIP User ID: 18312720630
- Primary SIP Auth ID: 56279319011
- 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: 5060
- Local SIP Port: 5060
- Outbound Proxy: sip20.ringcentral.com
- Outbound Proxy Port: 5090
- Disable rport Discovery:
- Buffer SIP Calls:
- Re-registration Interval (in seconds): 30
- Unregister on Boot:
- Keep Alive Period: 0

Nighthringer Settings

- Enable Nighthringer:
- SIP Server: 10.0.0.253
- Remote SIP Port: 5060
- Local SIP Port: 5061
- Outbound Proxy: []
- Outbound Proxy Port: 0
- User ID: 241
- Authenticate ID: 241
- Authenticate Password: *****
- Re-registration Interval (in seconds): 360

Call Disconnection

- Terminate Call after delay: 0

Codec Selection

- Force Selected Codec:
- Codec: PCMU (G.711, u-law)

RTP Settings

- RTP Port: 10500
- (even): []
- Jitter: 50
- Buffer: []

At the bottom, there are three buttons: Save (highlighted with a green box), Reboot, and Toggle Help.

10. Enable *Force Codec Selection* and use **PCMU**.
11. Click **Save** and **Reboot** to store changes.

Autoprovisioning

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

Figure 6-11: Autoprovisioning Template Example

```
<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>18312720630</SIPUserID>
  <SIPAuthID>56279319011</SIPAuthID>
  <SIPAuthPassword>*****</SIPAuthPassword>
  <SIPUserID2></SIPUserID2>
  <SIPAuthID2></SIPAuthID2>
  <SIPAuthPassword2></SIPAuthPassword2>
  <SIPUserID3></SIPUserID3>
  <SIPAuthID3></SIPAuthID3>
  <SIPAuthPassword3></SIPAuthPassword3>
  <SIPRegistrationTimeout>30</SIPRegistrationTimeout>
  <SIPRegisterOnBoot>Yes</SIPRegisterOnBoot>
  <BufferSIPCalls>No</BufferSIPCalls>
  <RTPPort>10500</RTPPort>
  <JitterBuffer>50</JitterBuffer>
  <CallTimeout>0</CallTimeout>
  <UseCiscoSRST>No</UseCiscoSRST>
  <DisableRportDiscovery>No</DisableRportDiscovery>
  <NatPingOptions>No</NatPingOptions>
  <KeepAlive>0</KeepAlive>
  <DefaultCodec>1</DefaultCodec>
</SIPSettings>
```

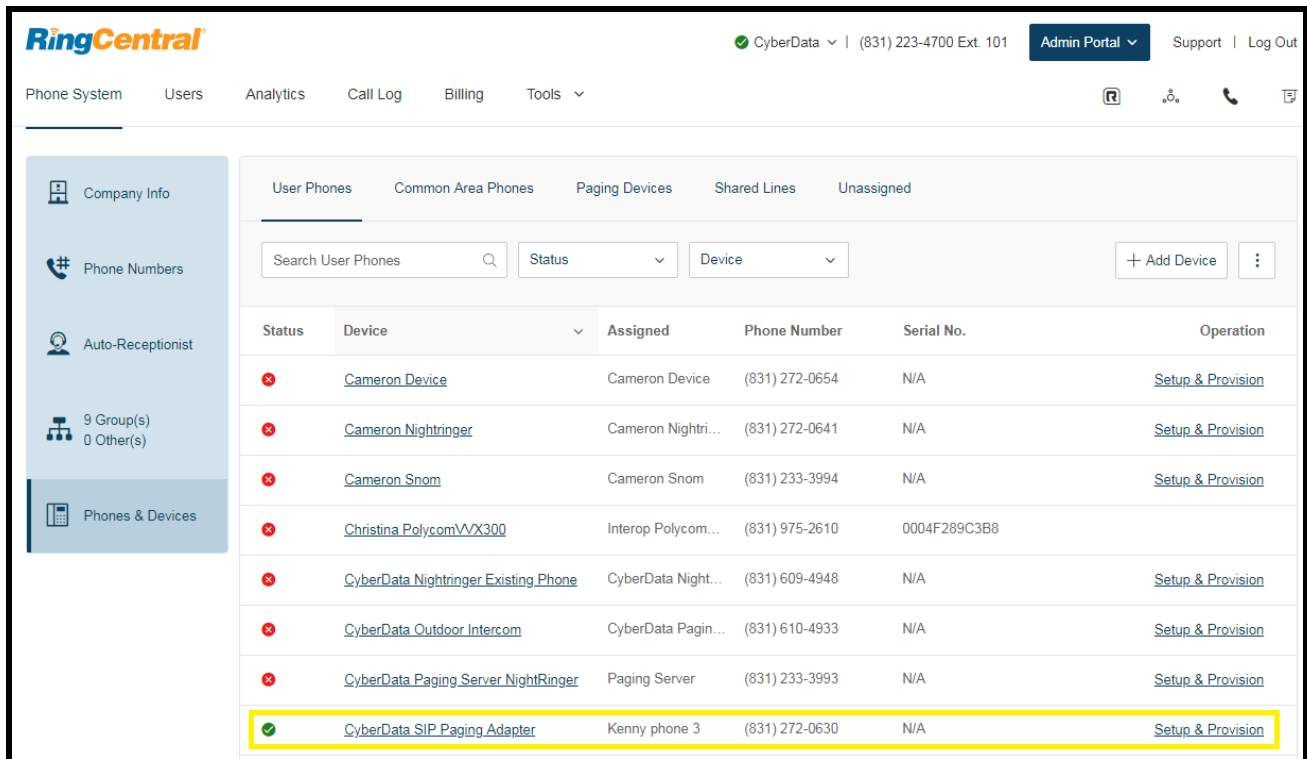
Note: These example values are published only for reference. The `SIPAuthPassword` value should be the actual value from the [Assisted Generic IP Phone Provisioning](#) popup window.

Verify the Primary Extension Is Registered

After the SPA has rebooted and initialized to store changes, refresh the Home page of the web interface. Your device should show as **[Registered with SIP Server]** in green text on the bottom of the Home Page of the web interface as well as at the top of the SIP Configuration page next to *Enable SIP Operation*. See [Figure 5-17](#) and [Figure 6-10](#).

Additionally, you may verify the primary extension is registered with RingCentral through the Admin Portal. From the **Phones & Devices** menu, select **User Phones** and the IP Phone you just created for the SPA. The status should show as “online” in the **Phone Details**.

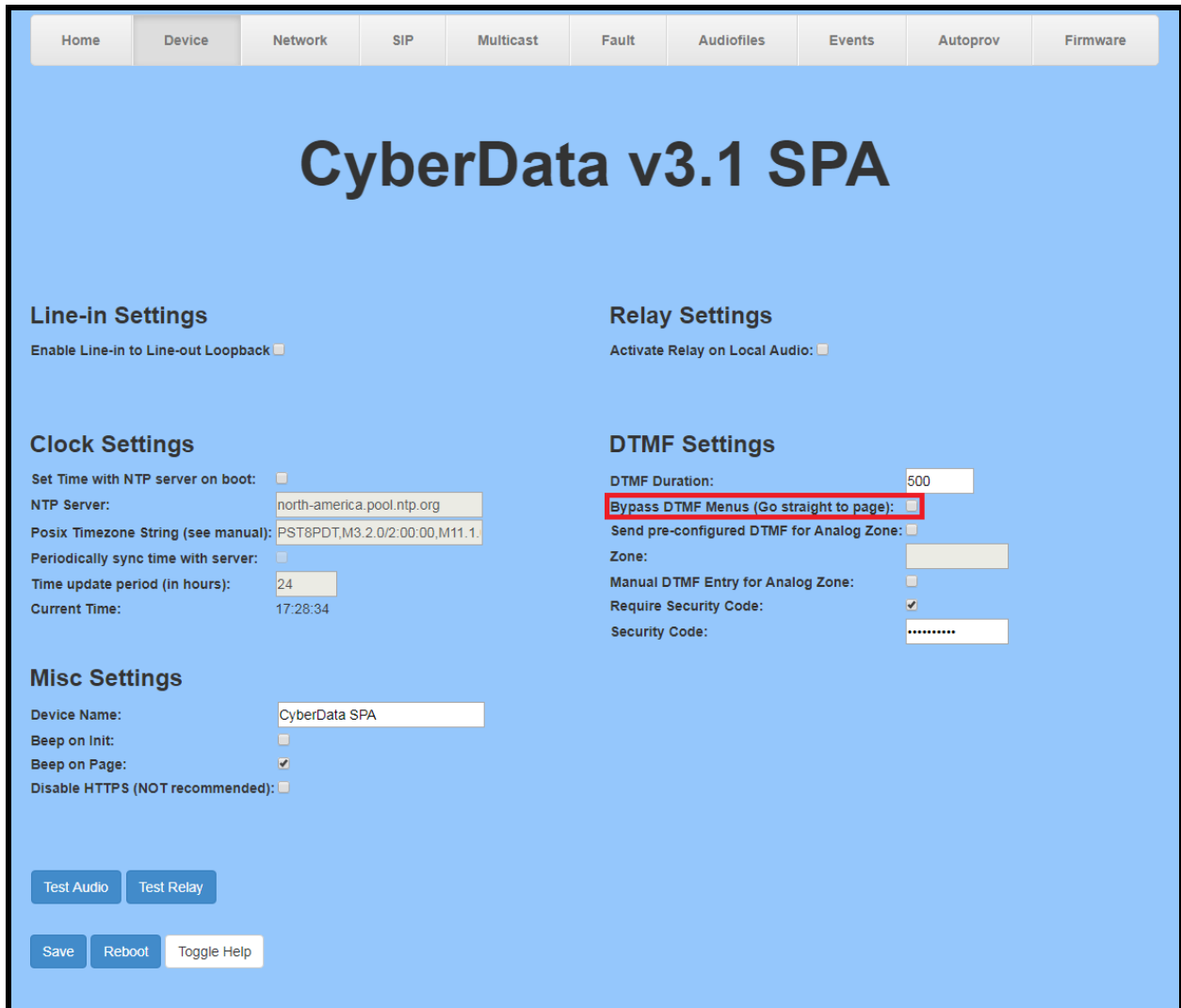
Figure 6-12: Phone Details – Status



Verify Paging Menu Is Enabled

Before making a test call, be sure to verify the paging menu is enabled. The setting *Bypass DTMF Menus (Go straight to page)* is located on the **Device Configuration** page of the web interface. Make sure this setting is unchecked. On default, *Bypass DTMF Menus (Go straight to page)* is disabled.

Figure 6-13: Enabled Paging Menu



If you are autoprovisioning the SPA, set *Bypass DTMF* to **No** under **DeviceSettings** in the autoprovisioning template.

Figure 6-14: Autoprovisioning Example – Enabled Paging Menu

```
<DeviceSettings>
  <DisableHTTPS>Yes</DisableHTTPS>
  <ActivateRelayOnLocalAudio>No</ActivateRelayOnLocalAudio>
  <BeepOnInitialization>No</BeepOnInitialization>
  <BeepBeforePage>Yes</BeepBeforePage>
  <EnableLineLoopback>No</EnableLineLoopback>
  <DTMFDuration>500</DTMFDuration>
  <BypassDTMF>No</BypassDTMF>
  <AllowZoneEntry>No</AllowZoneEntry>
  <UseSecurityCode>Yes</UseSecurityCode>
  <PageSecurityCode>12345</PageSecurityCode>
</DeviceSettings>
```

Make a Test Call

Once your primary extension has registered with RingCentral and you have configured the appropriate Device settings for the installation, you may use any RingCentral phone to dial the primary extension.

7.0 Configuration Procedure: Nightringer

What is a Nightringer?

The CyberData SIP Paging Adapter offers a secondary SIP extension called **Nightringer** in addition to the primary extension used for 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 requires creating a user and provisioning an IP phone in the same manner as the primary extension in [Section 6.0 "Configuration Procedure: Voice-Prompted Paging"](#). Therefore, if you plan to use the Nightringer extension in addition to voice prompted paging, then you will need a total of two RingCentral users associated with IP Phones.

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).

To be clear, 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 your account.

Once you have created a user and associated an IP phone for the Nightringer extension, refer to the popup window labeled **Assisted Generic IP Phone/Adaptor Provisioning** that appears after following assisted provisioning steps for the Nightringer. You will use the provisioning information to register the Nightringer extension with RingCentral.

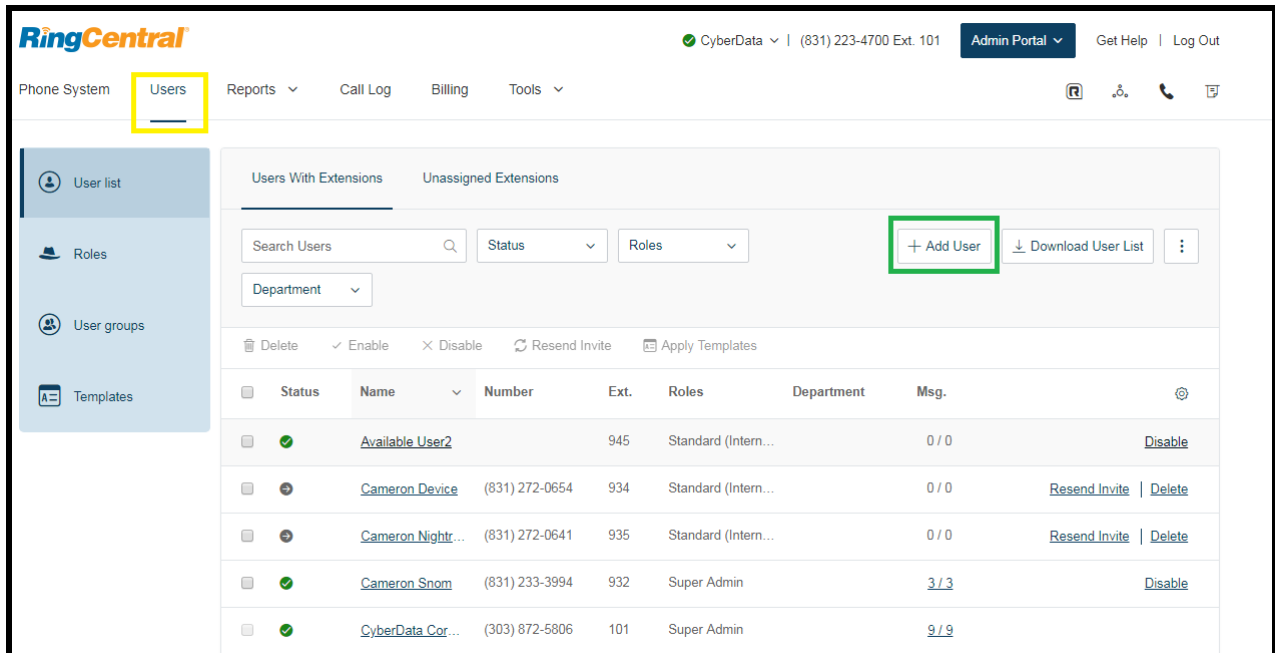
Add an IP Phone

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

First, you must designate a RingCentral User for the Nightringer.

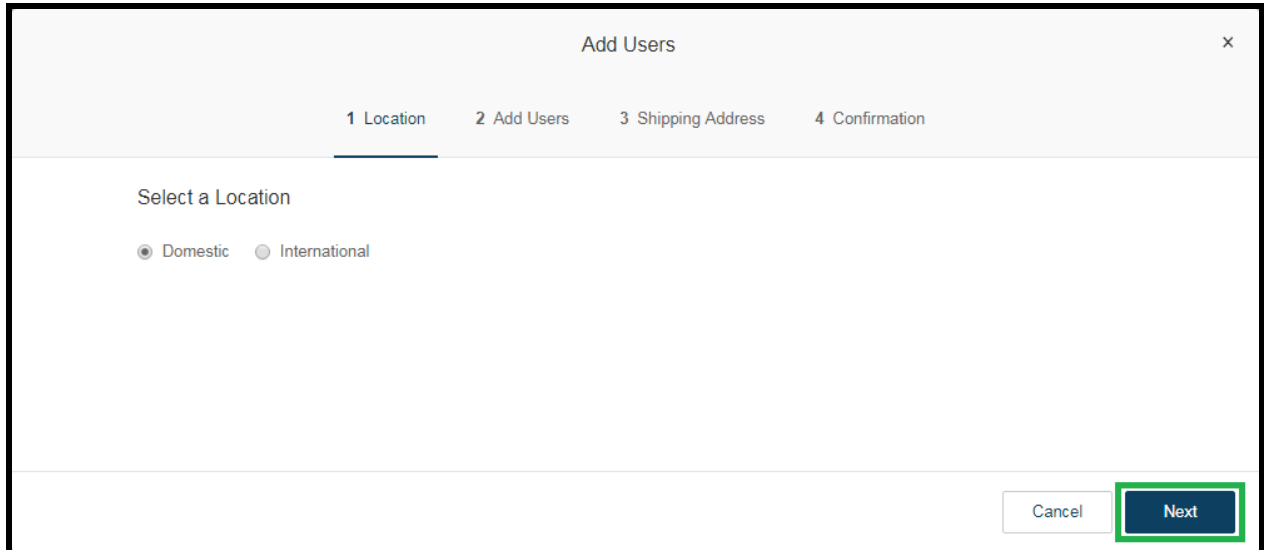
1. From the **Users** menu, click the **Add** button.

Figure 7-1: Add User Button



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

Figure 7-2. Add User Location



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 indicator 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 button options: "Domestic" (which is selected) and "International". At the bottom right of the window, there are two buttons: "Cancel" and "Next". The "Next" button is highlighted with a green border.

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

Figure 7-3: Add User Phone Number

Add Users ×

✓ Location 2 Add Users 3 Shipping Address 4 Confirmation

Add Users With Phones Add Users Without Phones

Account Status

Your plan: 20 - 99 Users Used: 25 Available: 0 Available for purchase: 74

You can add multiple users at a time if they will all use the same area code. [Learn More](#)

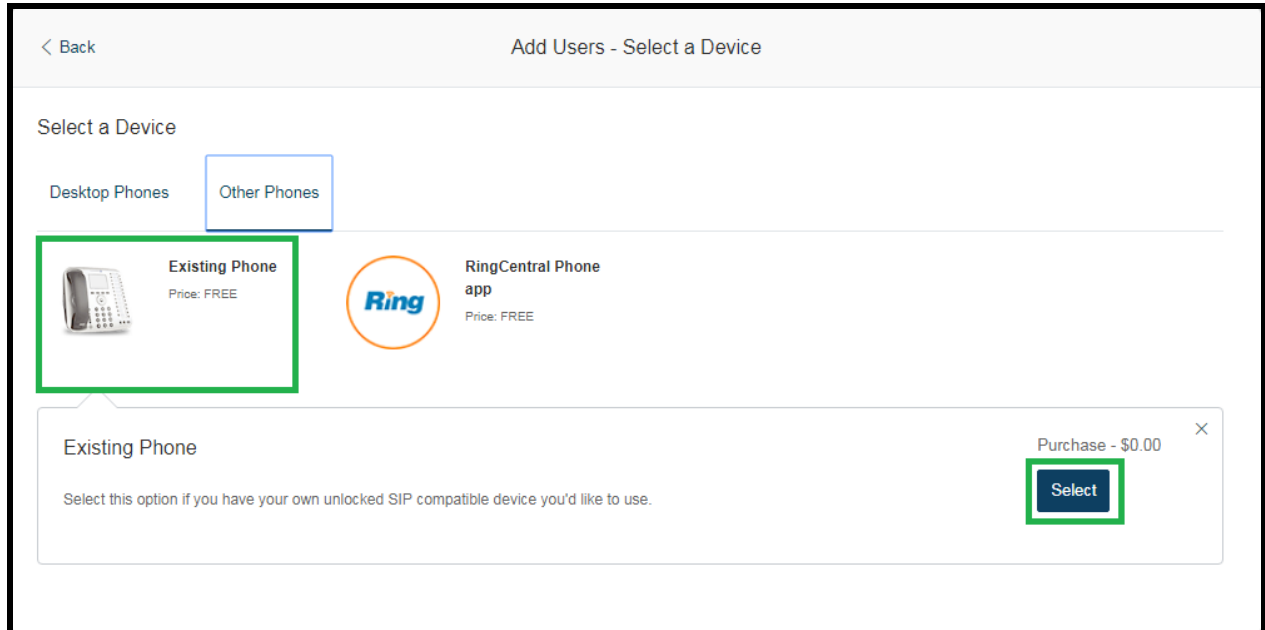
| Number of Users | State | Area Code | Device |
|-----------------|--------|-----------|----------------------|
| 1 | Select | Select | Select a Device... > |

Add

Back Next

4. You will be asked to select a phone type. Click the **Select** button to choose an **Existing Phone**. Select **Existing Phone**.

Figure 7-4: Select Phone Type



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

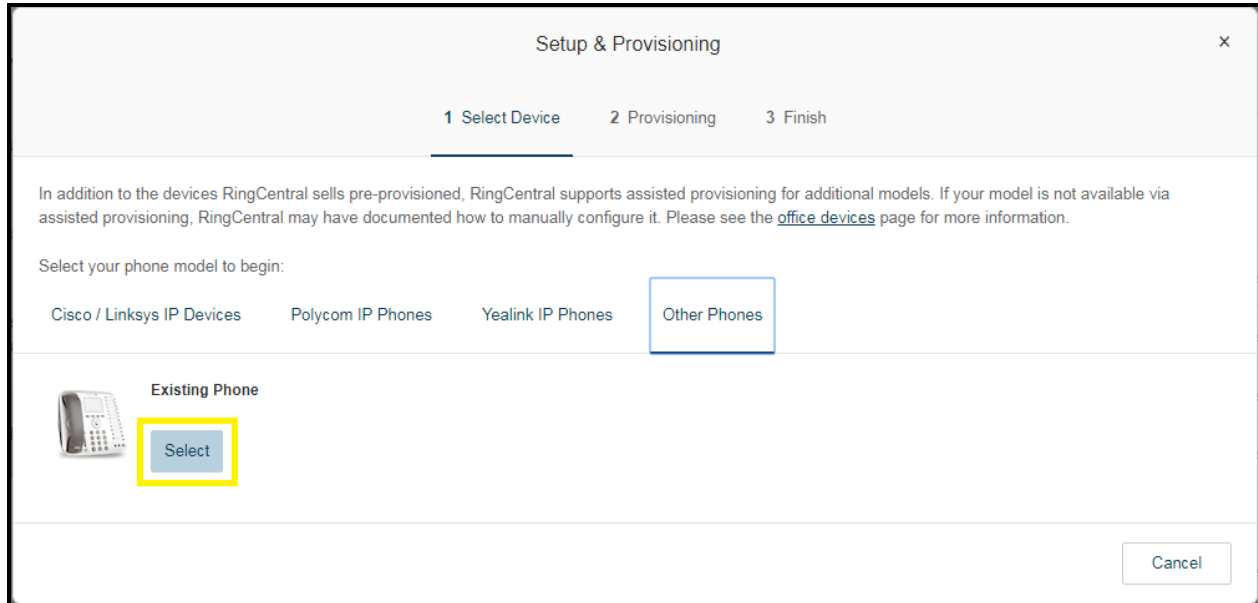
Figure 7-5: Setup and Provision

The screenshot shows the RingCentral Admin Portal interface. The top navigation bar includes the RingCentral logo, user information (CyberData | (831) 223-4700 Ext. 101), and an Admin Portal dropdown menu. Below the navigation bar, there are tabs for 'User Phones', 'Common Area Phones', 'Paging Devices', 'Shared Lines', and 'Unassigned'. The 'User Phones' tab is active, displaying a search bar and a table of user phones. The table has columns for Status, Device, Assigned, Phone Number, and Serial No. The 'CyberData Nightringer Existing Phone' row is highlighted, and its 'Setup & Provision' button is circled in yellow.

| 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 |

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

Figure 7-6: Assisted Provisioning



7. A popup window labeled **Assisted Generic IP Phone/Adaptor Provisioning** will appear. You will use the provisioning information to register the paging server's Nighthringer extension with RingCentral.

Figure 7-7: 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 'Finish' (3). Below the progress bar, there is instructional text: 'To configure your device to connect to the RingCentral service, you will need to program it with the following information. The steps for programming will vary from device to device, so please check with your device's manufacturer for specific instructions.' A table follows with the following fields and 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 7-1: CyberData Configuration Settings

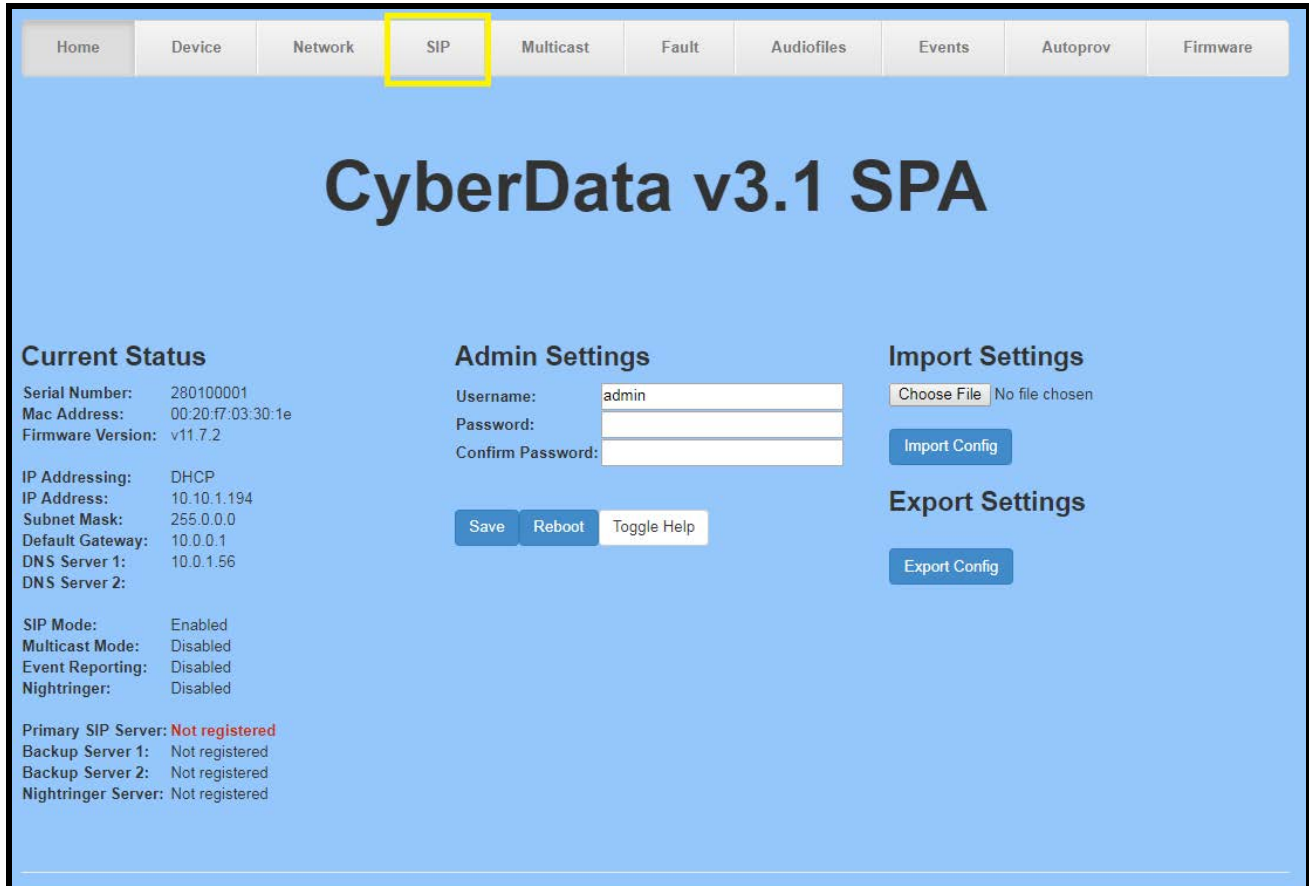
| | |
|--|---|
| Primary SIP Server field | From the Paging Device Provisioning Information popup: SIP Server |
| Primary SIP User ID field | From the Paging Device Provisioning Information popup: SIP User ID |
| Primary SIP Auth ID field | From the Paging Device Provisioning Information popup: Authenticate 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) |

Configure Nightringer SIP Parameters

If you are 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** on the toolbar on the top side of the screen.

Figure 7-8: Home Page



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

Note: The Local SIP Port is set to 5061 on default and is used by the paging server 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 7-9: Nightringer Configuration

The screenshot displays the configuration page for a CyberData v3.1 SPA. The interface is divided into several sections: SIP Settings, Nightringer Settings, Call Disconnection, Codec Selection, and RTP Settings. The Nightringer Settings section is highlighted with a yellow border, indicating the focus of the configuration. The SIP Settings section includes fields for enabling SIP operation, registering with a SIP server, and configuring primary and backup servers. The Call Disconnection section has a field for terminating a call after a delay. The Codec Selection section has a dropdown menu for selecting a codec. The RTP Settings section has fields for RTP port, jitter, and buffer. At the bottom, there are buttons for Save, Reboot, and Toggle Help.

| Section | Parameter | Value |
|--|-----------------------------|-------------------------------------|
| SIP Settings | Enable SIP operation: | <input checked="" type="checkbox"/> |
| | Register with a SIP Server: | <input checked="" type="checkbox"/> |
| | Use Cisco SRST: | <input type="checkbox"/> |
| | Primary SIP Server: | sip.ringcentral.com |
| | Primary SIP User ID: | 18312720630 |
| | Primary SIP Auth ID: | 56279319011 |
| | 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: | 5060 | |
| Local SIP Port: | 5060 | |
| Outbound Proxy: | sip20.ringcentral.com | |
| Outbound Proxy Port: | 5090 | |
| Disable rport Discovery: | <input type="checkbox"/> | |
| Buffer SIP Calls: | <input type="checkbox"/> | |
| Re-registration Interval (in seconds): | 30 | |
| Unregister on Boot: | <input type="checkbox"/> | |
| Keep Alive Period: | 0 | |
| Nightringer Settings | Enable Nightringer: | <input checked="" type="checkbox"/> |
| | SIP Server: | sip.ringcentral.com |
| | Remote SIP Port: | 5060 |
| | Local SIP Port: | 5061 |
| | Outbound Proxy: | sip10.ringcentral.com |
| | Outbound Proxy Port: | 5090 |
| | User ID: | 18316094948 |
| Authenticate ID: | 802872227010 | |
| Authenticate Password: | ***** | |
| Re-registration Interval (in seconds): | 30 | |
| Call Disconnection | Terminate Call after delay: | 0 |
| Codec Selection | Force Selected Codec: | <input checked="" type="checkbox"/> |
| | Codec: | PCMU (G.711, u-law) |
| RTP Settings | RTP Port (even): | 10500 |
| | Jitter: | 50 |
| | Buffer: | |
| | | |

Buttons: Save, Reboot, Toggle Help

Autoprovisioning

If you are autoprovisioning the SPA, use the Nightringer Settings in the autoprovisioning template to register the Nightringer with RingCentral.

Figure 7-10: Autoprovisioning Template Example

```
<NightringerSettings>
  <EnableNightringer>Yes</EnableNightringer>
  <NightringerSIPServer>sip.ringcentral.com</NightringerSIPServer>
  <NightringerRemotePort>5060</NightringerRemotePort>
  <NightringerLocalPort>5061</NightringerLocalPort>
  <NightringerOutboundProxy>sip10.ringcentral.com</NightringerOutboundProxy>
  <NightringerOutboundProxyPort>5090</NightringerOutboundProxyPort>
  <NightringerUserID>18312333993</NightringerUserID>
  <NightringerAuthID>17422862010</NightringerAuthID>
  <NightringerAuthPassword>*****</NightringerAuthPassword>
  <NightringerRegistrationTimeout>30</NightringerRegistrationTimeout>
  <NightringerEnableMulticast>No</NightringerEnableMulticast>
  <NightringerMulticastAddress>224.1.2.32</NightringerMulticastAddress>
  <NightringerMulticastPort>2020</NightringerMulticastPort>
</NightringerSettings>
```

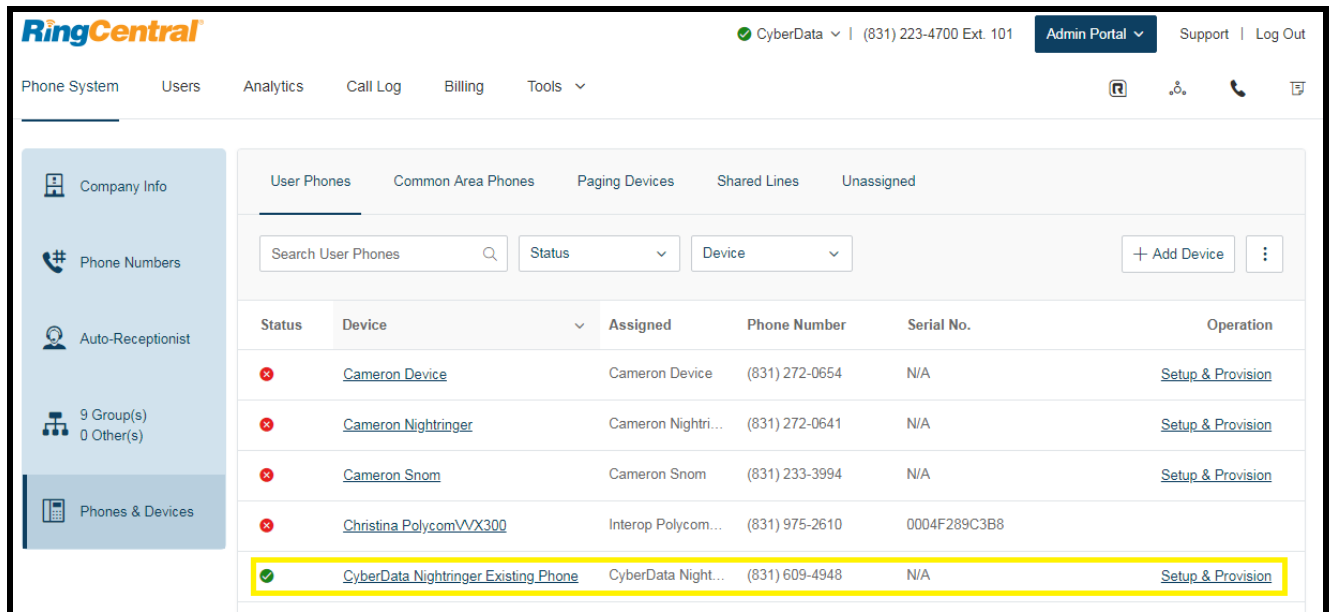
Note: These example values are published only for reference. The `NightringerAuthPassword` value should be the actual value from the [Nightringer's Assisted Generic IP Phone/Adaptor Provisioning](#) popup.

Verify the Nightringer is Registered

After the paging adapter has rebooted and initialized, refresh the [Home page of the web interface](#). Your device should show as [**Registered with SIP Server**] in green text on the bottom of the Home Page of the web interface as well as at the top of the Nightringer Configuration page next to *Enable Nightringer*. See [Figure 6-2](#) and [Figure 6-3](#).

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

Figure 7-11: Nightringer Phone Details – Status



Make a Test Call

Once your device has registered with RingCentral, you may use any RingCentral phone to dial the Nightringer extension.

8.0 Multicast Configuration

This section documents multicast configuration for industry standard multicast transmissions using the [CyberData V3.1 Paging Server](#) and Polycom's proprietary paging solution using Polycom IP phones running UC Software 4.0.0 and higher. Please be advised it is not necessary to register the SPA's primary extension with RingCentral to use multicast. The SPA can operate in SIP mode, multicast mode, or both modes simultaneously.

When using multicast audio sources for IP paging, the most important configuration details are the multicast IP address and port number for a particular paging group. Each paging group consists of a unique multicast IP address and port number.

As described in [Multicast Audio Sourcing](#) in [Section 3.0 "Installation Options"](#) on page 9, each configured paging group is priority-based and allows you to designate higher priority groups for emergencies or page-all broadcasts that will preempt lower priority groups like background music.

To begin, identify how many paging groups will be needed. Be sure to consider which paging groups will take a higher priority. Any SIP calls, such as those used to send pages to RingCentral Paging Only groups, will take priority level 4.5.

Polycom Group Paging

First, it is important to note the default port number used by Polycom phones is an odd-numbered port. While industry standard multicast transmissions use even-numbered ports in conformance with RFC 1889, the CyberData V3.1 Paging Server can be configured to transmit to an odd numbered port for Polycom paging interoperability. Similarly, the CyberData SIP Paging Adapter (SPA) can be configured to receive multicasts from Polycom sources using an odd-numbered port.

This configuration guide uses the default Polycom multicast IP address and odd-numbered port 224.0.1.116:5001.

CyberData V3.1 Paging Server Multicast Paging

The [CyberData V3.1 Paging Server](#) is the most popular industry standard multicast audio source for IP paging solutions. A single phone call to the V3.1 Paging Server's extension can reach all paging-capable devices on your network and overhead speakers at the same time. For more information about integrating a V3.1 Paging Server with RingCentral, please see the [V3.1 Paging Server – RingCentral Configuration Guide](#).

Use the following steps to configure the SPA to join multicast paging groups receiving pages from the CyberData V3.1 Paging Server and Polycom Phones.

1. From the multicast audio sources, identify the multicast IP addresses and port numbers for each paging group you need to configure on the SPA. This information is located on the **PGROUPS Configuration** page of the V3.1 Paging Server’s web interface and **PagingGroupSettings** in the V3.1 Paging Server’s autoprovisioning template.

Figure 8-1: V3 Paging Server PGROUPS Configuration

CyberData v3.1 SPA

Multicast Settings

Enable Multicast Operation:

| Priority | Address | Port | Name | Beep | Buffer |
|----------|-------------|------|----------------------|--------------------------|--------------------------|
| 9 | 234.2.1.1 | 2000 | Emergency | <input type="checkbox"/> | <input type="checkbox"/> |
| 8 | 224.0.1.116 | 5001 | Polycom Group Paging | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 | 239.168.3.8 | 9000 | Warehouse Only | <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"/> |

Polycom Default Channel: 1
 Polycom Priority Channel: 24
 Polycom Emergency Channel: 25

SIP calls are considered priority 4.5
Port range can be from 2000-65535
Priority 9 is the highest and 0 is the lowest
A higher priority audio stream will always supersede a lower one
 * You need to reboot for changes to take effect

Note: The red square boxes are the multicast IP address and port numbers for each paging group. The addresses and port numbers must match the SPA's configured multicast paging group addresses and port numbers.

Figure 8-2: Autoprovisioning Example – V3.1 Paging Server PagingGroupSettings

```
<PagingGroupSettings>
  <BypassDTMF>No</BypassDTMF>
  <SendPolycom>Yes</SendPolycom>
  <PagingGroup00Addr>234.2.1.1</PagingGroup00Addr>
  <PagingGroup00Port>2000</PagingGroup00Port>
  <PagingGroup00Name>Emergency</PagingGroup00Name>
  <PagingGroup00TTL>255</PagingGroup00TTL>
  <PagingGroup00LineOut>Yes</PagingGroup00LineOut>
  <PagingGroup00Code>12345</PagingGroup00Code>
  <PagingGroup01Addr>224.0.1.116</PagingGroup01Addr>
  <PagingGroup01Port>5000</PagingGroup01Port>
  <PagingGroup01Name>Polycom Paging</PagingGroup01Name>
  <PagingGroup01TTL>255</PagingGroup01TTL>
  <PagingGroup01LineOut>No</PagingGroup01LineOut>
  <PagingGroup01Code></PagingGroup01Code>
  <PagingGroup02Addr>239.168.3.8</PagingGroup02Addr>
  <PagingGroup02Port>9000</PagingGroup02Port>
  <PagingGroup02Name>Warehouse</PagingGroup02Name>
  <PagingGroup02TTL>255</PagingGroup02TTL>
  <PagingGroup02LineOut>No</PagingGroup02LineOut>
  <PagingGroup02Code></PagingGroup02Code>
```

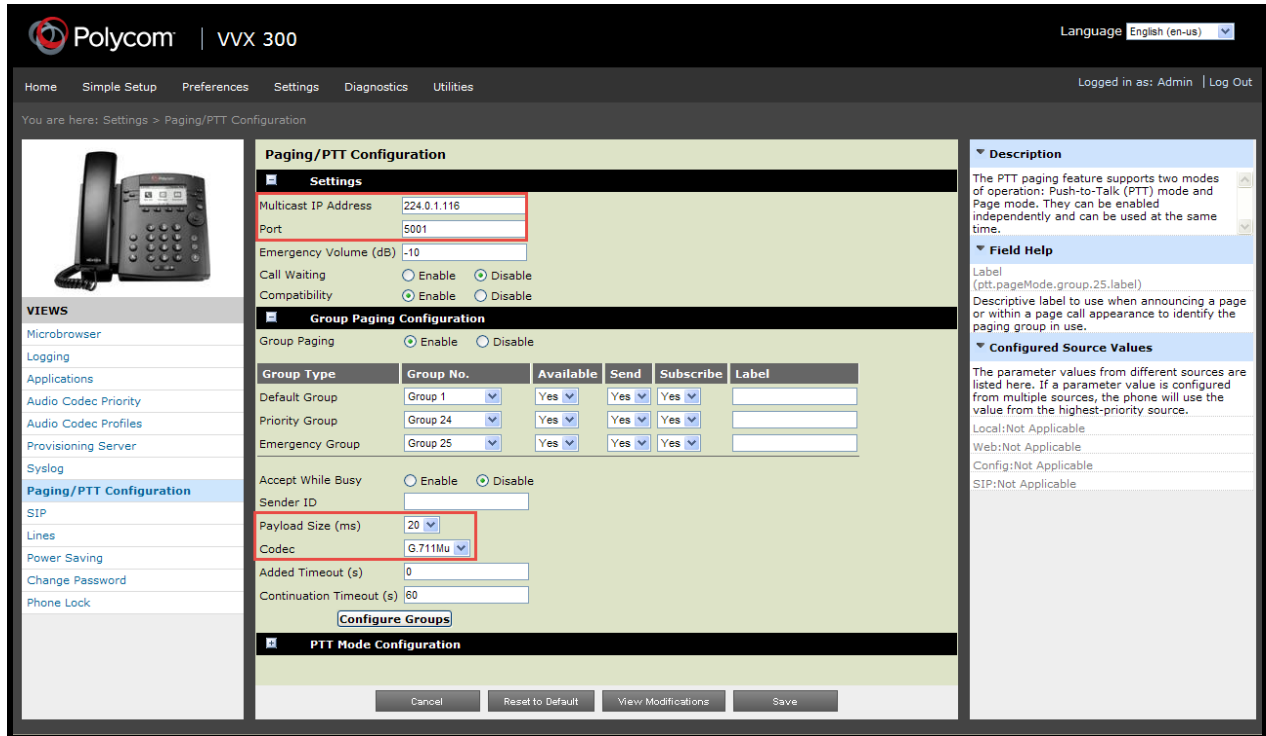
Note: SendPolycom is enabled in this example configuration. While the paging group configuration reflects an even-numbered port, as it does in [Figure 8-1](#), the CyberData Paging Server will send a second multicast stream to the configured Paging Group Address and the next higher Port number (Paging Group Port + 1) for Polycom interoperability. The CyberData Paging Server assumes the Polycom phones will use an odd-numbered port.

In this example, when Paging Group 01 is selected, the CyberData paging server will send a second audio stream to the next higher port. This results in the second stream being sent to port 5001, or the 224.0.1.116:5001 address.

Since the SPA supports RFC 1889 and Polycom Group Paging multicasts, you may configure the SPA to join the standard multicast group address containing an even-numbered port or a Polycom Group Paging address containing an odd-numbered port.

The Polycom Group Paging multicast IP address and port number is used for both Group Paging and PTT modes on a Polycom IP phone running UC Software version 4.0 and higher.

Figure 8-3: Polycom IP Phone – Paging/PTT Configuration



The following settings should be configured under Group Paging Configuration:

- Payload Size = 20 ms
- Codec = G.711Mu

2. Navigate to the **Multicast Configuration** page of the SPA's web interface.
3. Check the box to *Enable Multicast operation* at the top of the page.
4. Enter the multicast IP address and port numbers used by the V3.1 Paging Server and/or Polycom IP phones into the multicast IP address and port number fields for the desired priority groups on the SPA's **Multicast Configuration** page. See [Figure 8-4](#).

When configuring the Polycom Paging group, we will use the odd-numbered port although the SPA supports both even-numbered and odd-numbered ports.

Table 8-1. Example SPA Paging Groups

| SPA Paging Group | Address | Port |
|------------------|-------------|------|
| Priority 9 | 234.2.1.1 | 2000 |
| Priority 8 | 224.0.1.116 | 5001 |
| Priority 7 | 239.168.3.8 | 9000 |

5. If you are configuring the SPA to join Polycom Paging groups, select the desired channel/group numbers at the bottom of the Multicast Configuration page.

Each of the three Polycom channel/group menus can be individually disabled or set to channel/group numbers 1 through 25. See [Figure 8-4](#).

6. **Save** and **Reboot** to store changes.

Figure 8-4: SPA Multicast Configuration

CyberData v3.1 SPA

Multicast Settings

Enable Multicast Operation:

| Priority | Address | Port | Name | Beep | Buffer |
|----------|-------------|------|----------------------|--------------------------|--------------------------|
| 9 | 234.2.1.1 | 2000 | Emergency | <input type="checkbox"/> | |
| 8 | 224.0.1.116 | 5001 | Polycom Group Paging | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 | 239.168.3.8 | 9000 | Warehouse Only | <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"/> |

Polycom Default Channel 1 ▼

Polycom Priority Channel 24 ▼

Polycom Emergency Channel 25 ▼

SIP calls are considered priority 4.5

Port range can be from 2000-65535

Priority 9 is the highest and 0 is the lowest

A higher priority audio stream will always supersede a lower one

** You need to reboot for changes to take effect*

Autoprovisioning

If you are autoprovisioning the SPA, use the following steps to configure the SPA to join multicast paging groups receiving pages from the CyberData V3.1 Paging Server and Polycom phones.

1. Identify the multicast IP addresses and port numbers for each paging group you need to configure. See [Table 8-1](#) for example paging groups.
2. Set *EnableMulticastOperation* to **Yes** under MulticastSettings in the autoprovisioning template.
3. Each MGROUP corresponds to a numbered priority, as shown on the Multicast Configuration page in the web interface (see [Figure 8-4](#)). 0 is the lowest priority and 9 is the highest priority reserved for emergencies. Enter the multicast IP addresses and port numbers for each paging group according to the appropriate priority.

Figure 8-5: Autoprovisioning Example – Multicast Groups

```
<NightringerSettings>
<MulticastSettings>
  <EnableMulticastOperation>Yes</EnableMulticastOperation>

  <MGROUPAddress9>234.2.1.1</MGROUPAddress9>
  <MGROUPPort9>2000</MGROUPPort9>
  <MGROUPName9>Emergency</MGROUPName9>
  <MGROUPBuffer9>No</MGROUPBuffer9>
  <MGROUPBeep9>No</MGROUPBeep9>

  <MGROUPAddress8>224.0.1.116</MGROUPAddress8>
  <MGROUPPort8>5001</MGROUPPort8>
  <MGROUPName8>PolycomPaging</MGROUPName8>
  <MGROUPBuffer8>No</MGROUPBuffer8>
  <MGROUPBeep8>No</MGROUPBeep8>

  <MGROUPAddress7>239.168.3.8</MGROUPAddress7>
  <MGROUPPort7>9000</MGROUPPort7>
  <MGROUPName7>Warehouse</MGROUPName7>
  <MGROUPBuffer7>No</MGROUPBuffer7>
  <MGROUPBeep7>No</MGROUPBeep7>
```

4. If you are configuring the SPA to join Polycom Paging groups, enter the desired group numbers at the bottom of the MulticastSettings section of the template.

Each of the three Polycom group menus can be individually disabled or set to channel/group numbers 1 through 25.

Figure 8-6: Autoprovisioning Example – Polycom Paging Groups

```
<PolycomDefaultGroup>1</PolycomDefaultGroup>  
<PolycomPriorityGroup>24</PolycomPriorityGroup>  
<PolycomEmergencyGroup>25</PolycomEmergencyGroup>  
</MulticastSettings>
```

9.0 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 PBX solution may render this document obsolete. We welcome and encourage documentation feedback to ensure continued applicability.