

OVERVIEW & REQUIREMENTS

This guide walks through configuring the **Cisco 8851** IP phone to register with **the PBX platform 5.3.8** — from physical installation through manual configuration, auto provisioning (DHCP, TFTP, HTTP/HTTPS), and BLF setup.

BEFORE YOU BEGIN

- **Phone model** — Confirm the exact model printed on the back of the phone. Similar models can have significantly different setup procedures.
- **Firmware** — Version **11-3-3**
- **DHCP** — A fully configured, operational DHCP server
- **PBX version** — Release **5.3.8**

CISCO 8851 QUICK CODES

From the phone, press the **Settings** / menu button, then type:

- **71** — Show software (firmware) version
- **72** — Show the phone's IP address
- **65** — Reset to factory settings

CHECK PHONE FIRMWARE

- 1 Press the menu button on the phone
- 2 Type **71** — the software version is displayed
- 3 Confirm it shows version **11-3-3**

CHECK PBX VERSION

- 1 Log in to the PBX platform
- 2 Navigate to **Settings > About**

The top of the About page shows a code similar to:

```
Edition: Multi-Tenant, Release: 5.3.8.0  
(2223ce45), Running: 13.23.1-gc-040bbaca, Proxy  
v5.3.8 (231c5f3), API: 5.3
```

Release denotes the current version of your PBX.

INSTALLATION

CONNECT NETWORK & POWER

- 1 Connect the DC plug on the power adapter to the DC port on the phone, and the other end into an electrical outlet
- 2 Connect an Ethernet cable between the **Internet** port on the phone and a network port on your router or switch to access the LAN

FIND THE PHONE'S IP ADDRESS

- 1 Press the **Settings** button
- 2 Type **72**
- 3 The IP address is displayed on the phone

TWO WAYS TO REGISTER

- **Manual configuration** — set line credentials directly in the phone's web interface (page 3)
- **Auto provisioning** — the phone pulls its configuration from the PBX via DHCP, TFTP, or HTTP/HTTPS (pages 4–5)

RESET TO FACTORY SETTINGS

Not required for brand-new, out-of-the-box phones — but a **must** for any phone that has been used before.

- 1 Press the **Settings** button
- 2 Type **65**
- 3 Confirm with **OK** to factory reset the phone
- 4 Allow time for the phone to reboot

WARNING: Do not unplug or remove power while the phone is updating firmware or configuration.

MANUAL CONFIGURATION

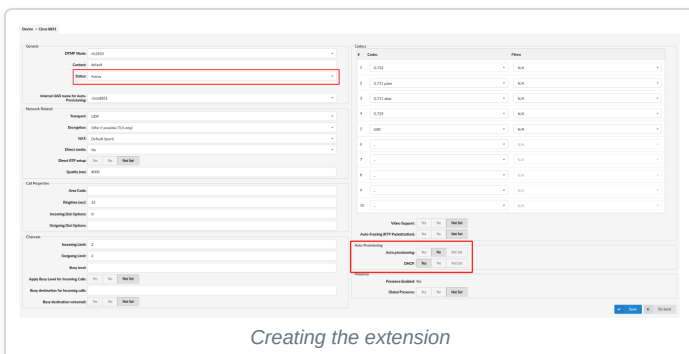
1 UAD SETTINGS

- 1 Browse to the PBX platform, e.g. `http://192.168.1.10`, and log in with your e-mail address and password
- 2 Navigate to **Settings > UAD**
- 3 Click the **Edit** icon for the Cisco phone
- 4 Set **Status** = **Active**, **Auto provisioning** = **No**, **DHCP** = **Yes**
- 5 Click **Save**



2 CREATE THE EXTENSION

- 1 **Extensions > Add Extension**
- 2 Select the **Cisco** phone model in the **UAD** select box
- 3 Select Location: **Local** (LAN) or **Remote** (WAN / Internet)
- 4 Click **Next step**



EXTENSION FIELDS

- **Name** — e.g. John Smith
- **E-mail** — receives all system notifications, e.g. john.smith@yourdomain.com
- **Extension (optional)** — auto-generated sequential number, e.g. 1003
- **Secret (optional)** — auto-generated; do **not** change it to a simple value like "1234"
- **PIN (optional)** — auto-generated; grants access to voicemail and Online Self Care

Click **Save** — or **Save & E-mail** to send the account details to the extension's e-mail address.

3 REGISTER THE PHONE

- 1 Browse to the phone's IP, e.g. `http://192.168.1.22`
- 2 Click **Admin Login**, then **Advanced** (top right)
- 3 Click **Voice** in the main menu, then **Ext 1**
- 4 **Proxy** (Proxy and Registration) — the PBX hostname or IP, e.g. `voip.yourdomain.com` or `192.168.1.10`
- 5 **User ID** (Subscriber Information) — the Extension number, e.g. 1003
- 6 **Password** — the extension Secret from the e-mail, e.g. `_%Z4M3*Ts9y7`
- 7 Scroll to **Dial Plan**, clear the field, and paste the value below
- 8 Click **Submit** and allow the phone to reboot

DIAL PLAN VALUE

```
(*x.|**x.|*xx|[3469]11|0|00|[2-9]xxxxxx|1xxx[2-9]xxxxxx|xxxxxxxxxxxxxx.)
```

AUTO PROVISIONING — DHCP & TFTP

1 UAD SETTINGS

- 1 Log in to the PBX platform and navigate to **Settings > UAD**
- 2 Click the **Edit** icon for the Cisco phone
- 3 Set **Status** = **Active**, **Auto provisioning** = **Yes**, **DHCP** = **Yes**, then **Save**

UAD settings — auto provisioning

2 CREATE THE EXTENSION

- 1 **Extensions** > **Add Extension** > UAD = **Cisco**, Location = Local or Remote > **Next step**

REQUIRED EXTENSION FIELDS

- **Name** — e.g. John Smith
- **E-mail** — e.g. john.smith@yourdomain.com
- **Auto Provisioning** — set to **Yes**
- **MAC Address** — from the back of the phone, e.g. 0002FDDFF1536

Click **Save**.

Creating the extension

3A REGISTER VIA DHCP (OPTION 66)

- 1 Configure your DHCP router to use **option 66** to automatically hand devices the auto-provisioning URL (refer to your router documentation or network administrator)
- 2 On the phone's first boot — or a user-initiated reboot — the DHCP server tells the phone where to pick up its configuration file, and the phone registers automatically

3B REGISTER VIA TFTP

- 1 Browse to the phone's IP and click **Admin Login** > **Advanced**
- 2 Click **Voice** > **Provisioning**
- 3 In the **Profile Rule** field enter `tftp:// + hostname or IP + /$MA.cfg`
- 4 Click **Submit** and wait ~35 seconds — the phone may reboot and picks up its configuration file

TFTP PROFILE RULE EXAMPLES

- `tftp://voip.yourdomain.com/$MA.cfg`
- `tftp://10.1.70.150/$MA.cfg`

TFTP profile rule

HTTP / HTTPS PROVISIONING & BLF

REGISTER VIA HTTP & HTTPS

NOTE: The PBX must be configured for HTTP provisioning — the HTTP username and password must be set in the auto-provisioning section under

Settings > Servers/Tenants > Server/Tenant Name. Contact your PBX administrator if these values have not been configured.

- 1 Browse to the phone's IP and click **Admin Login** > **Advanced**
- 2 Click **Voice** > **Provisioning**
- 3 In the **Profile Rule** field, enter one of the formats at right — replacing hostname or IP address with your PBX's values
- 4 Click **Submit** and wait ~35 seconds — the phone may reboot and picks up its configuration file during boot

The screenshot shows the 'Configuration Profile' page in the PBX interface. The 'Profile Rule' field is highlighted with the value 'http://10.170.150/\$MA.cfg'. Other fields include 'Provision Enable' (Yes), 'Resync Random Delay' (0), 'Resync At Random Delay' (600), 'Resync Error Retry Delay' (20,30,60), 'Resync From SIP' (Yes), 'Resync Trigger 1' and '2' (empty), 'Resync Fails On FNF' (Yes), 'Profile Rule B', 'C', and 'D' (empty), 'DHCP Option To Use' (66,160,159,150,60,43,125), 'Log Request Msg' (SPN \$MAC - Requesting resync \$SCHEME://\$SERVIP-\$PORT\$PATH), 'Log Success Msg' (SPN \$MAC - Successful resync \$SCHEME://\$SERVIP-\$PORT\$PATH), 'Log Failure Msg' (SPN \$MAC - Resync failed: \$ERR), and 'User Configurable Resync' (Yes).

HTTP/HTTPS profile rule

HTTP / HTTPS PROFILE RULE FORMATS

- **HTTP (hostname)**
[--uid username --pwd password]http://voip.yourdomain.com/prov/\$MA.cfg
- **HTTPS (hostname)**
[--uid username --pwd password]https://voip.yourdomain.com/prov/\$MA.cfg
- **HTTP (IP)**
[--uid username --pwd password]http://10.1.70.150/prov/\$MA.cfg
- **HTTPS (IP)**
[--uid username --pwd password]https://10.1.70.150/prov/\$MA.cfg

CONFIGURE BLF (BUSY LAMP FIELD)

- 1 Log in to the PBX platform
- 2 On the **Extensions** page, click the **Edit** icon for the extension
- 3 Click **Advanced Options**
- 4 Under **Auto Provisioning** and **Presence**: set **Auto Provisioning** = Yes and **Presence** = Yes, then **Save**
- 5 Click **Enhanced Services**
- 6 Check **Directory / BLF List** and click **Save** to enable the feature
- 7 Click **Directory / BLF List** **Edit**
- 8 Enter the user's Extension number and check the **BLF** box
- 9 Click **Save**