A MITEL
PRODUCT
GUIDE

IP48x Desktop Phone and MiVoice Business Interoperability Guide

MiVoice Business (MiVB) Integration with IP48x Series Phones

Release Number 1.0

Mitel
Powering connections

NOTICE

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TRADEMARKS

Mitel Desktop Phone Interoperability Guide

Release 1.0 – November 2025

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About This Document

This guide provides a reference for Mitel Authorized Solutions Providers on configuring **MiVoice Business** to support the **IP48x** series as a **Generic SIP Phone**. While the IP48x and associated endpoints can be deployed in multiple network configurations depending on the VoIP solution in use, this document focuses on a **basic SIP configuration** using MiVoice Business, including key provisioning and option programming requirements.

In addition to configuration guidance, this document also includes references to **Product Lifecycle Information** to ensure that partners deploying or supporting IP48x devices are fully aware of lifecycle planning implications and support timelines. The reference includes:

- Current product lifecycle phase
- Guidance for ongoing support and software availability
- Recommendations for future-proofing deployments
- Reference to official lifecycle documentation for compliance and customer communication

For detailed and up-to-date lifecycle status of IP48x devices and related systems, please consult the official **Mitel Product Lifecycle Documentation** available through the below portal.
Refer: https://nuxeo.unify.com/nuxeo/site/proxy/nxdoc/view/raw/93ee0db1-ed3d-4a5f-ae3e-3727b7105ad3?source=SAMLSSO

Supported Phone Models

The following IP400 phone models are supported:

- IP480
- IP480g
- IP485g

The following IP400 phone models are not supported:

- IP420
- IP420g

Supported Phone Features

The following is an overview of the features supported.

Feature	Feature Description
Basic Call	Making and Receiving calls
Registration/Authentication	Device registration and authentication
DTMF Signal	Sending DTMF after call setup (i.e. mailbox password)
Call Hold	Putting a call on hold
Call Transfer	Transferring a call to another destination
Call Forward	Forwarding a call to another destination
Conference	Conferencing multiple calls together

Feature	Feature Description
Redial	Last Number Redial
Personal Ring Group	Multiple sets ringing when one number dialed
MWI	Message Waiting Indication
TLS/SRTP	Making and Receiving calls using TLS/SRTP
Teleworker	Making and Receiving calls using UDP and TLS/SRTP
Long Duration Calls	Basic Incoming & Outgoing long duration calls
Resiliency	Device able to handle resiliency when primary MiVB or MBG goes down

Resiliency

The IP48x device supports the following resiliency mechanisms when connected to MiVoice Business.

Scenario	Description	Behavior
DNS-Based Resiliency	Resiliency is achieved by using DNS servers that return multiple IP addresses for a single FQDN, typically through DNS SRV or A records.	The device resolves the FQDN and automatically moves to the next available IP address if the primary becomes unreachable
Primary and Backup Outbound Proxy	Used in environments where DNS SRV is not applicable. The device is configured with both a primary and backup outbound proxy.	If the primary proxy becomes unreachable, the device automatically redirects SIP requests to the backup proxy.
Enhanced Failover Using OPTIONS Ping	Builds on DNS-Based Resiliency and Primary and Backup Outbound Proxy by adding active monitoring. The device sends OPTIONS requests (“pings”) to the active server to detect failure more rapidly.	If an OPTIONS request times out, the device immediately switches to the alternate server for all future requests. This provides significantly faster failure detection, allowing the device to fail over to an alternate MiVoice Business system much more quickly and with minimal user interruption. Faster detection reduces the likelihood that the user will notice any loss of service, as failover can occur almost immediately.

Supported Hardware and Software/Firmware Environment

The table below summarizes the hardware and software/firmware environment supported.

Product	Software/Firmware Version	Additional Applicable Variants
MiVoice Business	10.x	PPC, EX Controller, SMBC
MBG - Teleworker	12.x	Not Applicable
IP48X SIP	6.2.1.1079/ 6.2.1.1080/ 6.2.1.2022	IP480, IP480g and IP485g
MiCollab Server	10.x	Not Applicable

IP48x Firmware Upgrade Process

This section provides a complete guide for upgrading IP48x phones to SIP firmware compatible with MiVoice Business (MiVB). It covers pre-migration preparation, firmware upgrade stages, verification, and optional updates.

Note: During firmware upgrades, the phones may reboot one or more times. This is expected behavior.

Supported Firmware Versions

IP48x phones must first be upgraded to **804.2210.1600.0** before installing the Generic SIP firmware that works with MiVB. The following versions mentioned in the below table supports upgrade of IP48x devices to **804.2210.1600.0** version.

Build Series	Build Version	Comments
Azure	>= 801.5.1460.0	Supported
Brazos	802.x.xxxx.x	Any 802 build
Colorado	803.x.xxxx.x	Any 803 build
Connect	804.x.xxxx.x	Any 804 build

Unsupported Firmware Versions

Build Series	Comments
> 801.0.0.0 and < 801.5.4160.0	Supports only SSH-based upgrades where the server must initiate a TCP connection to the phone. Not compatible with the automated upgrade process.

Once upgraded to 804.2210.1600.0, the phones can be further upgraded to Generic SIP firmware (**6.2.1.1079 for IP485G / 6.2.1.1080 for IP480, IP480G**).

Note: The latest firmware at the time of documentation is **6.2.1.2022**. The IP48x devices can be upgraded to this firmware once they are in 6.2.1.1079/6.2.1.1080 version.

Pre-Migration Setup

PROVISION CONFIG SERVER

The IP48x phones must have the **configServer** parameter set. This can be done in two ways:

1. **Via DHCP Option 156** (recommended for multiple phones)
2. **Manually** on each phone using the admin menu

CONFIGURE DHCP OPTION 156 (PREFFERED)

Configure the enterprise DHCP server to include **Option 156** in DHCP replies:

Environment	configServer Setting	IP Address Equivalent
Production	ip400.mitelcloud.com	34.111.177.55

Note: Phones receiving this DHCP option will automatically populate the configServer parameter.

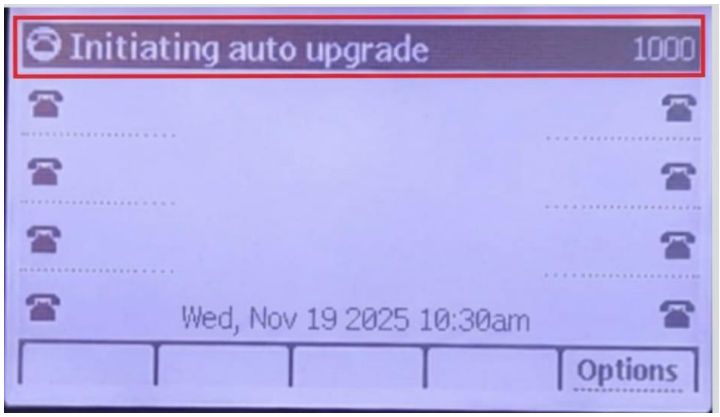
CONFIGURE INDIVIDUAL PHONES (MANUAL)

For environments where DHCP cannot be modified:

1. **Factory Reset**
    - Press **(mute-CLEAR#)** on the phone; it will reset and reboot.
2. **Set Config Server**
    - Press **(mute-SETUP#)** > **Admin Options > Services > Config Server**
    - Set Config Server 1:

Environment	configServer Setting	IP Address Equivalent
Production	ip400.mitelcloud.com	34.111.177.55

3. Press **Back > Back > Apply**
4. Wait a few seconds; the phone registers automatically with the **IP400Migration** service (default extension: 1000).
5. The display will show **“Initiating auto upgrade”**.

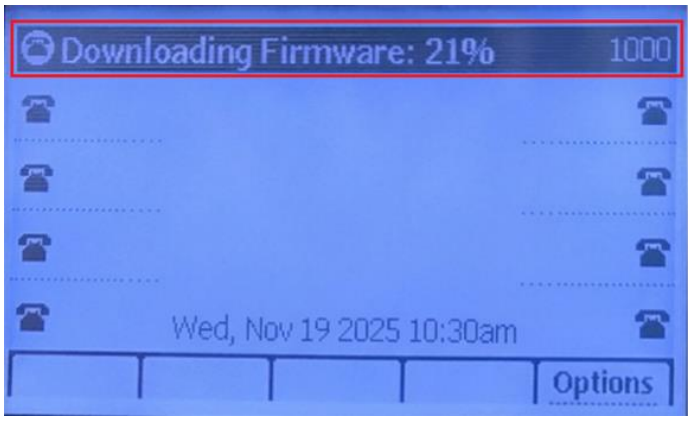


Firmware Upgrade Stages

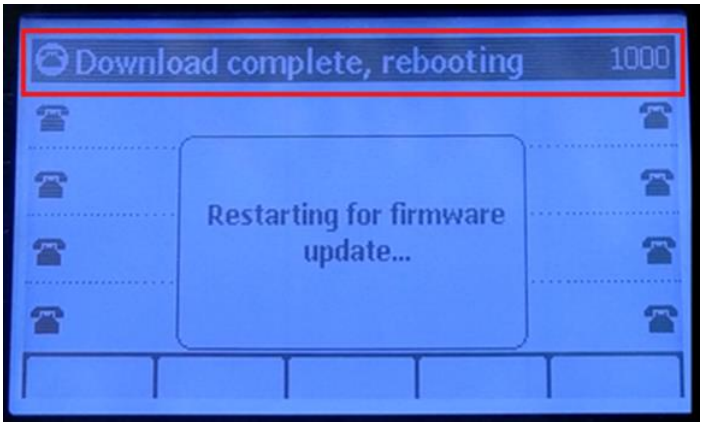
Firmware upgrades are divided into **two stages**. Stages are sequential and must be completed in order.

STAGE 1: UPGRADE TO LATEST 804 FIRMWARE

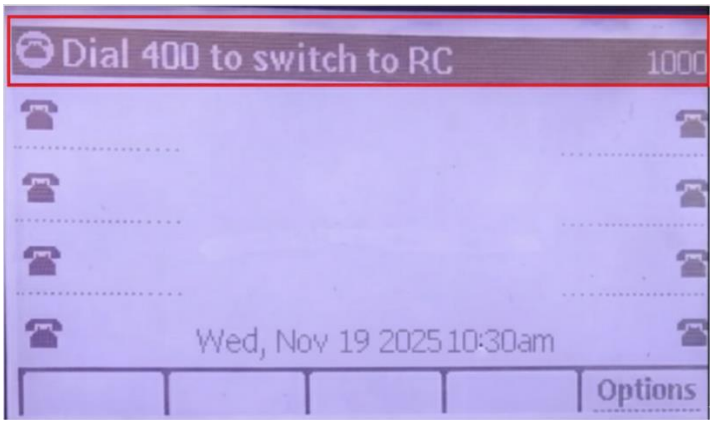
1. After pre-migration, the phone automatically starts upgrading to **804 firmware**.
    - **If auto-upgrade does not start**, dial **804** manually on the keypad.
2. The phone displays "**Downloading Firmware**".



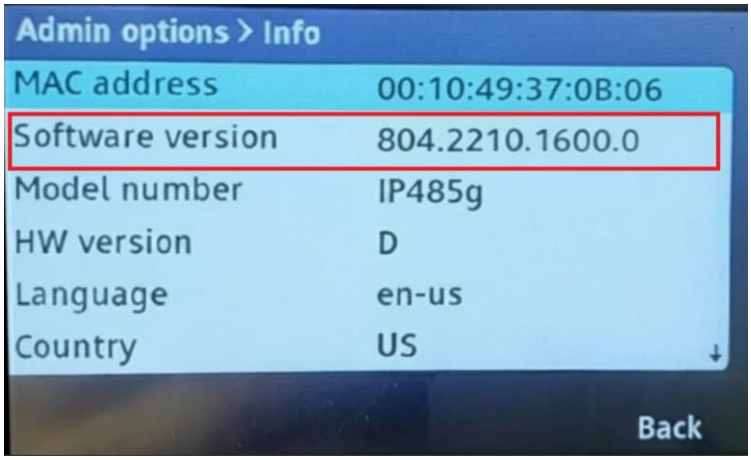
3. Upon completion, the phone **reboots** and loads the latest **804 firmware**.



4. After reboot, the screen displays **"Dial 400 to switch to RC"**

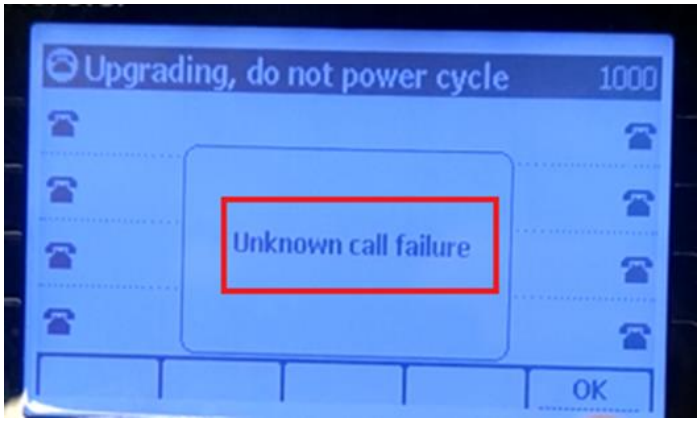


5. Verify Firmware Version
    - Press **(mute-SETUP#) > Admin Options > Phone Information**
    - Press **Cancel** when prompted for Admin password

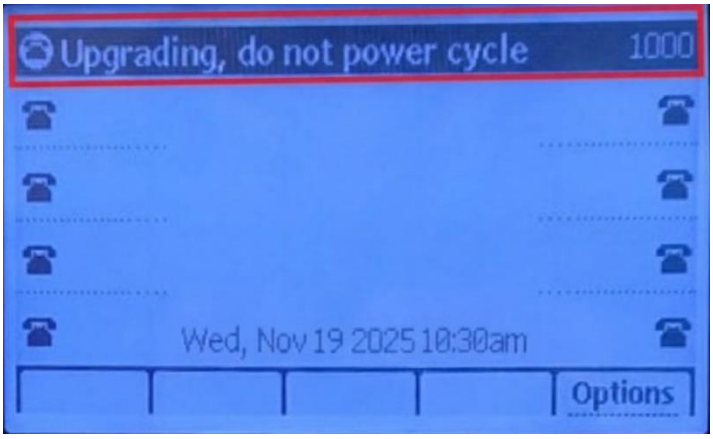


STAGE 2: UPGRADE TO GENERIC SIP FIRMWARE

1. Dial **400** on the keypad. The phone may display **"Unknown call failure"** — press **OK**.

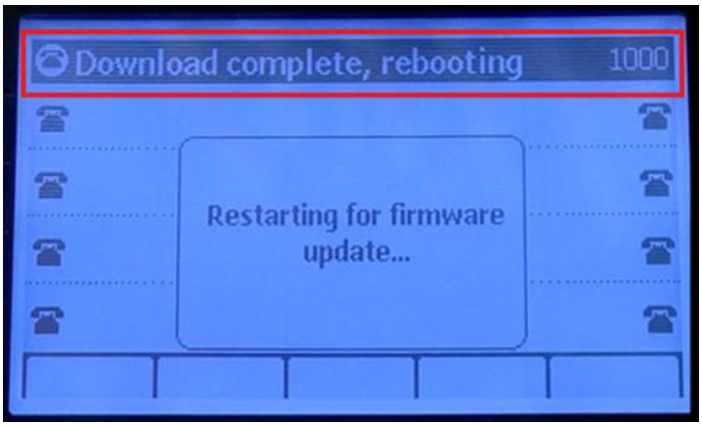


2. Wait **2–3 minutes**; the firmware downloads silently in the background. Do not power off the phone.



3. The phone **reboots automatically** and loads the **Generic SIP (ST) firmware**.

   Note: IP480 and IP480g may undergo multiple reboots, while the **IP485g** reboots once.



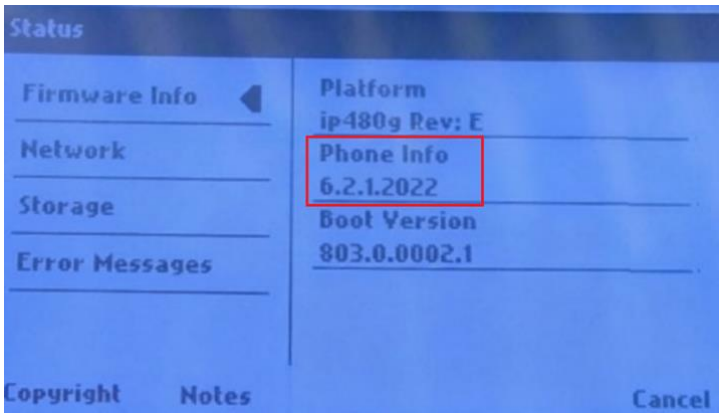
4. Verify Generic SIP Firmware Version
   - Press **Settings > Status > Firmware Info > Phone Info**
   - The firmware version for IP480 and IP480g: **6.2.1.1079**, IP485g: **6.2.1.1080**.

Notes:

1. Default admin password during migration: **1234**
2. Post-migration admin password: **22222**
3. Passwords are used for log uploads and configuration changes.

OPTIONAL: UPGRADE TO 6.2.1.2022

1. Configure FTP/TFTP server and place files:
   - ip480.st, ip480g.st, ip485g.st, and startup.cfg
2. Configure DHCP Scope Option 66 with string value: `ftp://<FTP Server IP>/<Path>`. For example, `ftp://10.211.122.75/Phones/6.2.1.2022`



Important Advisory: Upgrading to the Generic SIP firmware is a one-way operation. After migration, the device cannot be downgraded to the original firmware.

MiVoice Business (MiVB) Configuration

This section provides the required configuration steps on MiVoice Business to support registration and operation of IP48x phones running Generic SIP firmware.

Network Requirements

To ensure high-quality SIP audio, the network must meet the following requirements:

- **Bandwidth:** Approximate consumption per voice session:
  - **G.711:** ~85 Kb/s
  - **G.729:** ~29 Kb/s (Assumes 20 ms packetization.)

Example: For 20 simultaneous SIP calls

  - G.711: ~1.7 Mb/s
  - G.729: ~0.6 Mb/s

Typical enterprise LAN environments support this without special engineering. Refer to **MiVoice Business Engineering Guidelines** for detailed recommendations.

- **Quality Requirements:**
  - Packet loss: **< 1%**
  - Jitter: **< 30 ms**
  - One-way delay: **< 80 ms**

Assumptions for MiVB Programming

- SIP signaling uses **UDP port 5060**.
- For TLS deployments, use **TLS port 5061**.

Configuration Overview

The following MiVB forms must be programmed to enable successful interoperability with IP48x Generic SIP phones:

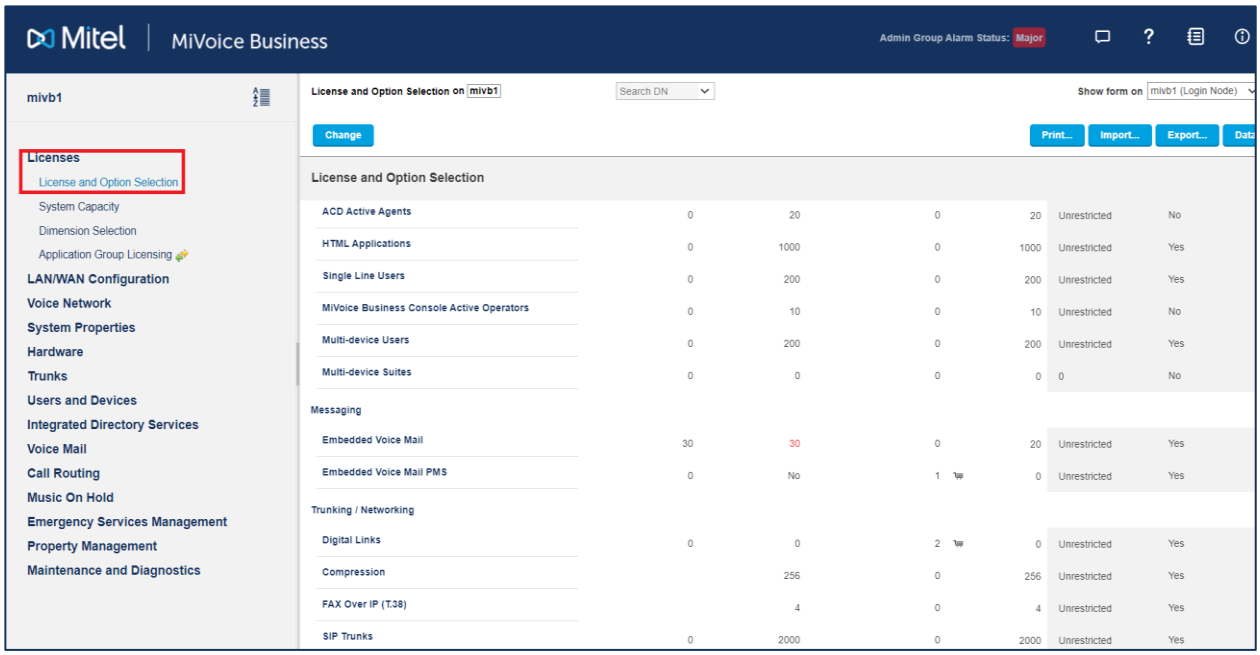
- Software Licensing
- Multiline IP Set Configuration (or User Configuration)

- Class of Service Assignment
- SIP Device Capabilities
- Station Attributes

SOFTWARE LICENSE – SIP LICENSING

Ensure that MiVoice Business has sufficient **SIP Device Licenses** to support all IP48x SIP phones.

This can be verified in the **Software License > Feature** section.



MULTILINE IP SET CONFIGURATION

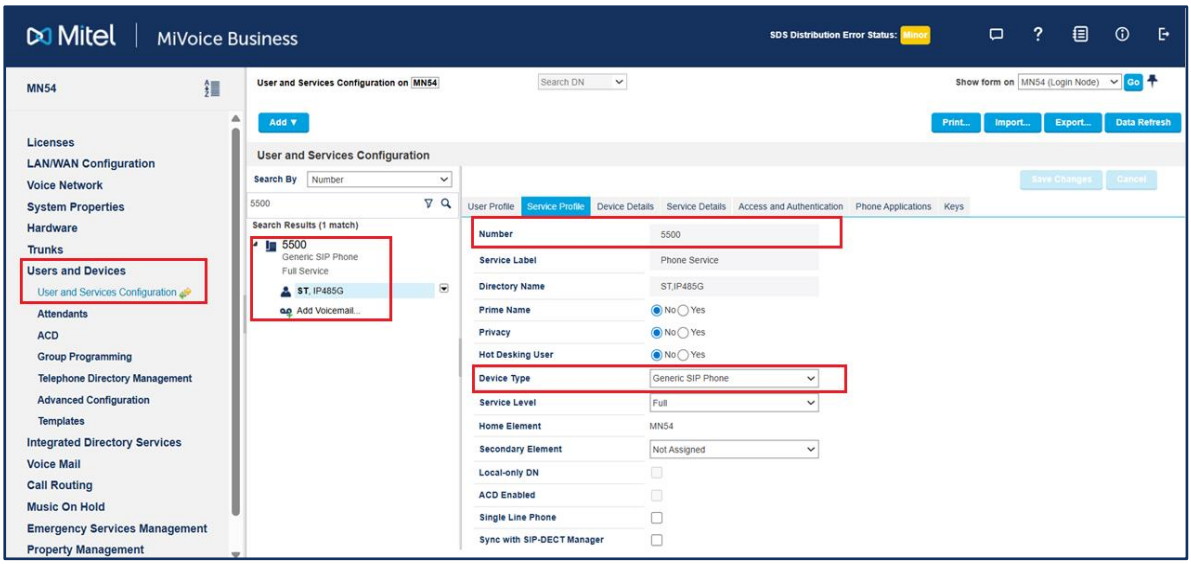
IP48x phones must be programmed as **Generic SIP Phone** devices.

You may configure them using either of these MiVB forms:

- **User Configuration**
- **Multiline IP Set Configuration**

Required Fields

- **Number (DN):** Directory Number assigned to the phone.
- **SIP Password:** SIP authentication password used by the IP48x.
- All remaining fields may remain default unless site requirements dictate otherwise.



CLASS OF SERVICE ASSIGNMENT

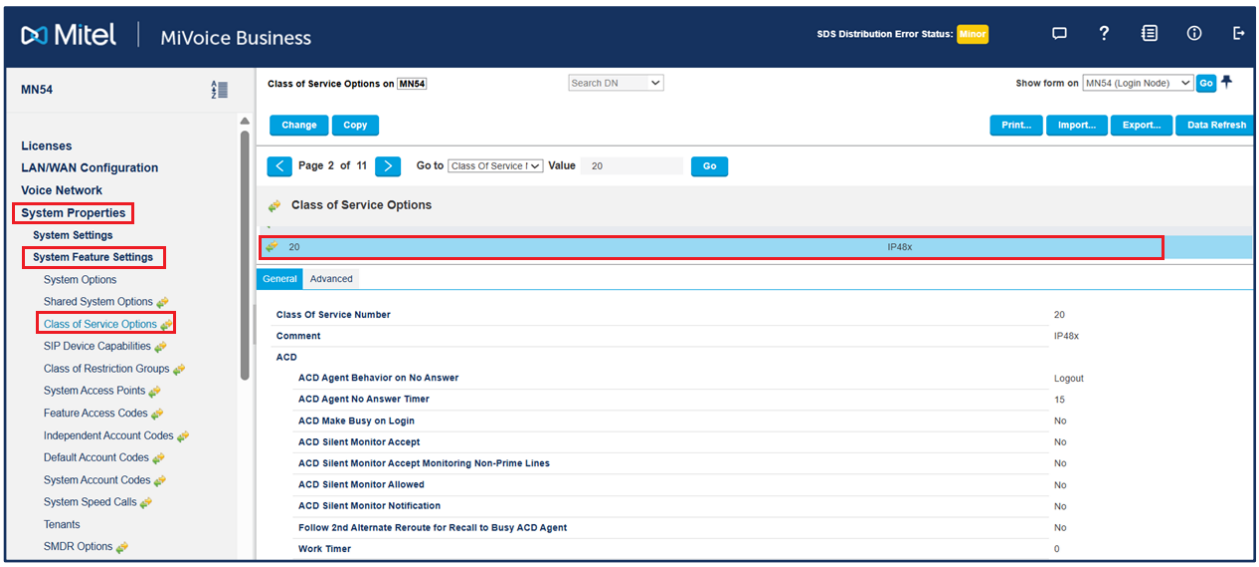
The **Class of Service (COS)** defines the feature permissions available to each SIP endpoint. Many COS options may vary depending on site requirements; however, the IP48x Generic SIP Phone requires a specific set of COS values for correct operation.

The **Class of Service (COS) Options** form defines feature permissions for SIP devices. COS numbers are later assigned through the Station Attributes form.

The following COS options **must be changed from default** for Generic SIP devices to function correctly with MiVB:

COS Option	Default Value	IP48x value
Call Park – Allowed to Park	No	Yes
Auto Campon Timer	10	Blank (No fixed value)
Public Trunk	No	No

Note: Other COS options may be modified depending on deployment needs.

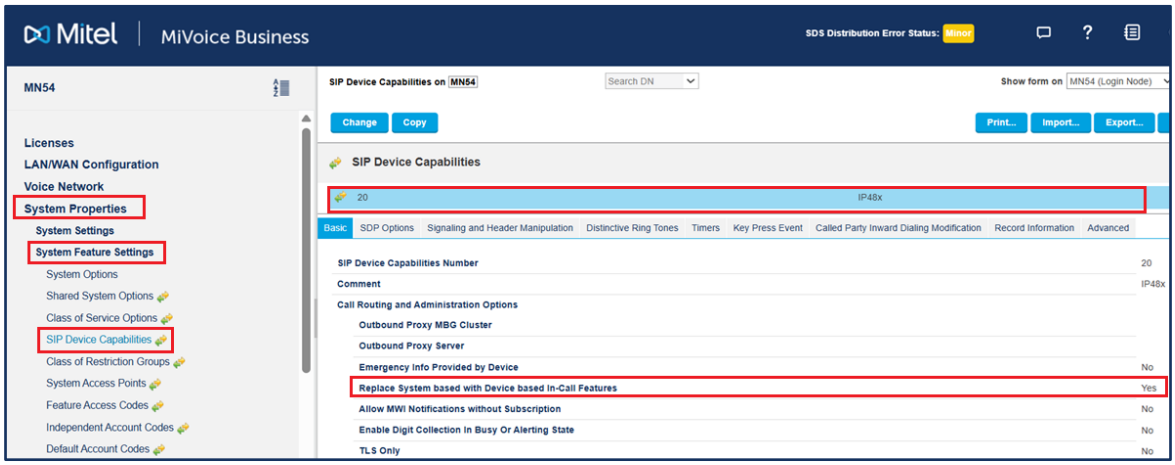


SIP DEVICE CAPABILITIES

The **SIP Device Capabilities** form creates a SIP profile applied to Generic SIP Phones. This profile defines how MiVB interacts with third-party SIP endpoints.

Required Settings for IP48x:

SIP Device Capabilities Number	Default	IP48x
Replace System based with Device based In-Call Features	No	Yes
Allow Device To Use Multiple Active M-Lines	No	Yes
Force sending SDP in initial Invite message	No	Yes
Prevent the Use of IP Address 0.0.0.0 in SDP Messages	No	Yes
Allow Display Update	No	Yes
Require Reliable Provisional Responses on Outgoing Calls	No	Yes
Session Timer	0	1800



Notes:

- For TLS/SRTP deployments:
  - Set **AVP Only Device = No**
  - Set **Force Sending SDP = No**

STATION ATTRIBUTES

To each IP48x Generic SIP Phone, use the **Station Attributes** form to assign:

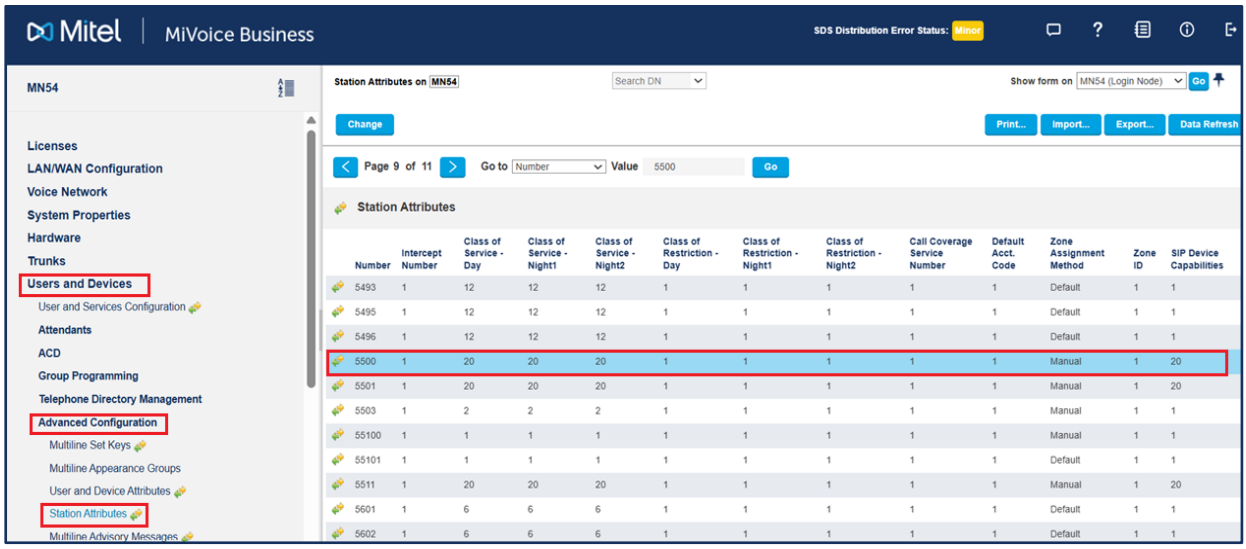
- **Class of Service (Day/Night1/Night2)**
- **SIP Device Capability Number**

Example Assignment:

- **SIP Device Capability Number:** 20

- **Class of Service (Day/Night1/Night2):** 20

Note: The form supports **Range Programming** for multiple phones.



MiVoice Border Gateway Configuration for Teleworkers

This section describes the configuration required on the MiVoice Border Gateway (MBG) to enable teleworker connectivity for the IP48x Generic SIP Phone. The configuration assumes that MiVoice Business programming is already complete and that the MBG is operational within the deployment environment.

Overview

MBG acts as the secure gateway for remote IP48x SIP phones connecting over the public internet. The steps below outline how to register the MiVoice Business (MiVB) as an ICP within MBG and how to add IP48x Generic SIP devices for teleworker use.

Network Requirements

- Ensure the MBG is deployed according to the **Mitel Border Gateway Engineering Guidelines**.
- Verify adequate bandwidth, firewall rules, and public IP requirements for SIP teleworkers.

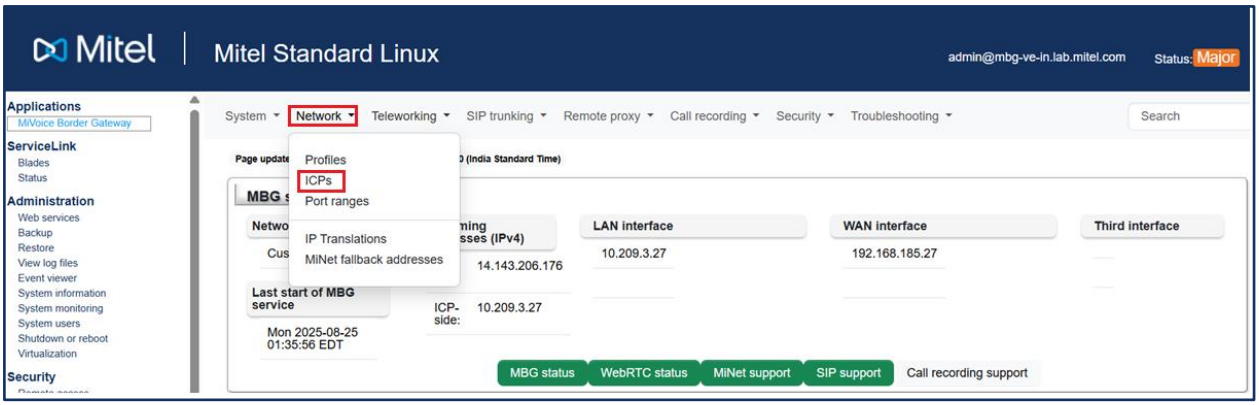
Configuration Assumptions

The following configuration prerequisites are assumed:

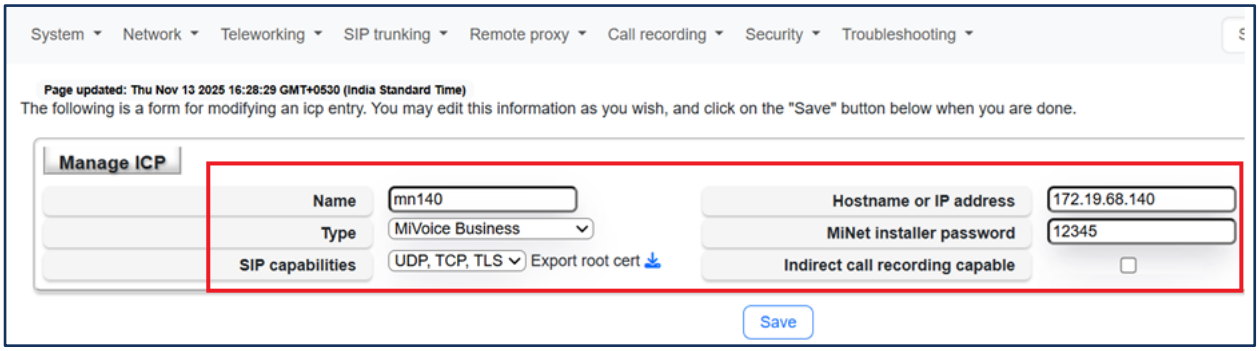
- MiVoice Business has been fully configured as outlined in the **MiVoice Business (MiVB) Configuration** section.
- SIP signalling between MiVB and MBG uses:
  - **UDP Port 5060** for standard SIP
  - **TLS Port 5061** for secure SIP
- The MBG server is installed, licensed, and configured to support SIP clients.

Adding MiVoice Business (ICP) to MBG

1. In the MBG interface, navigate to **Network > ICPs**.
2. Select **+ Add ICP**.



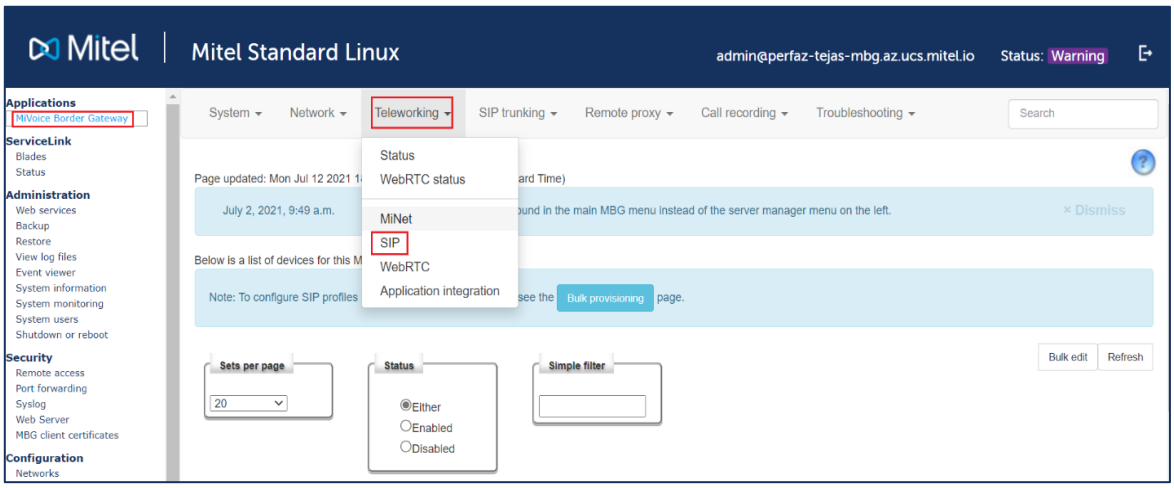
3. Enter the required ICP details:
    - ICP Name
    - Fully Qualified Domain Name (FQDN) or IP Address
    - ICP Type (MiVoice Business)
4. Click **Save**.



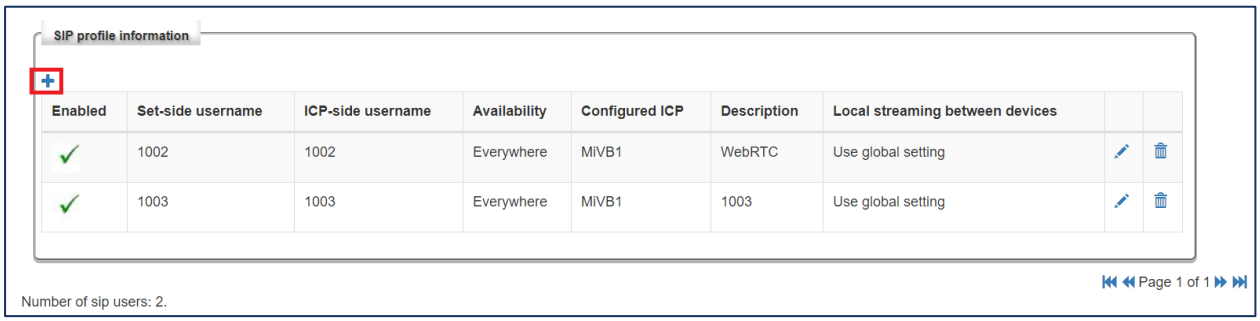
Adding IP48x Generic SIP Devices

To enable teleworker registration, configure each IP48x as a SIP device in MBG.

1. Navigate to **Teleworking > SIP**



2. Select **+ Add** to create a new SIP device.



3. In the SIP Device configuration screen, enter the following:

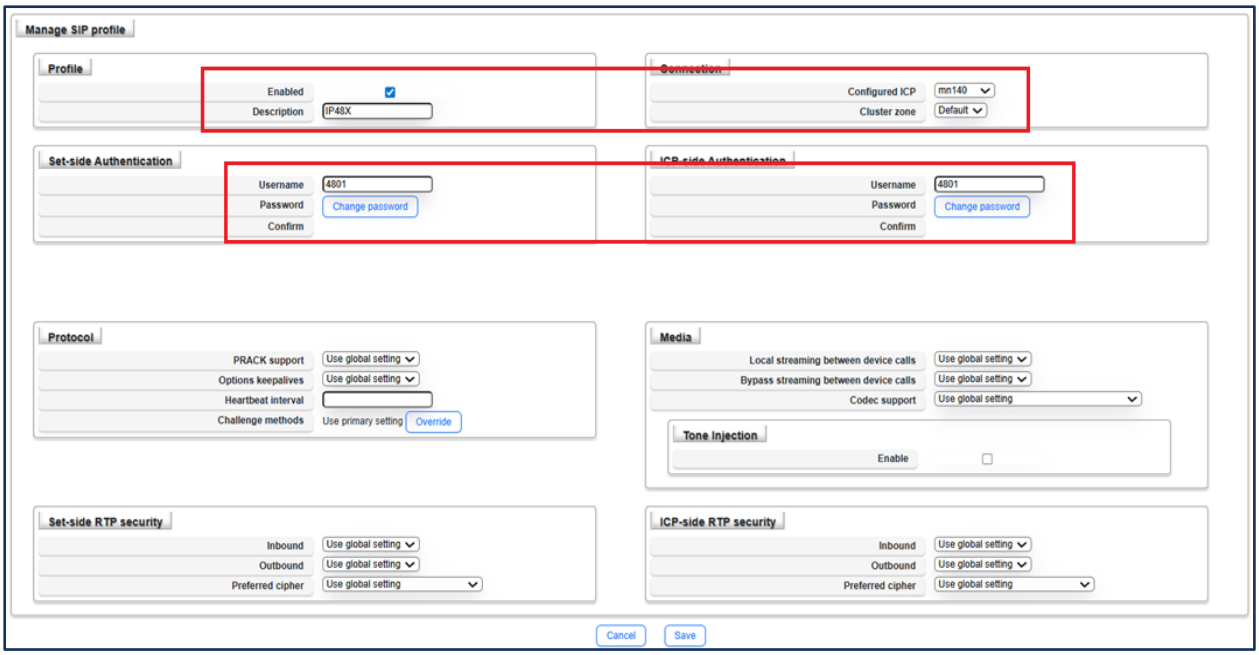
Set-Side Credentials

- Username
- Password
  (These must match the SIP credentials provisioned on the IP48x phone.)

ICP-Side Credentials

- SIP Password
- Directory Number (DN)
  (These must match the SIP extension programming on MiVoice Business.)

4. Complete all other required fields based on deployment needs, then click **Save**.



IP48x Configuration

Pre-requisites

Before configuring the IP48x device:

- Ensure the unit is powered on and connected to the network.
- Confirm that your PC is connected to the same TCP/IP network.
- A web browser is required to access the full configuration interface.
- If connecting directly to the IP48x, ensure the phone is powered via PoE.

  Note: The IP48x phone, by default, obtains its IP address from the DHCP server in the network. If a DHCP server is not available, the IP48x phone can be configured with a static IP address, as described in the ***Network Settings*** section below.

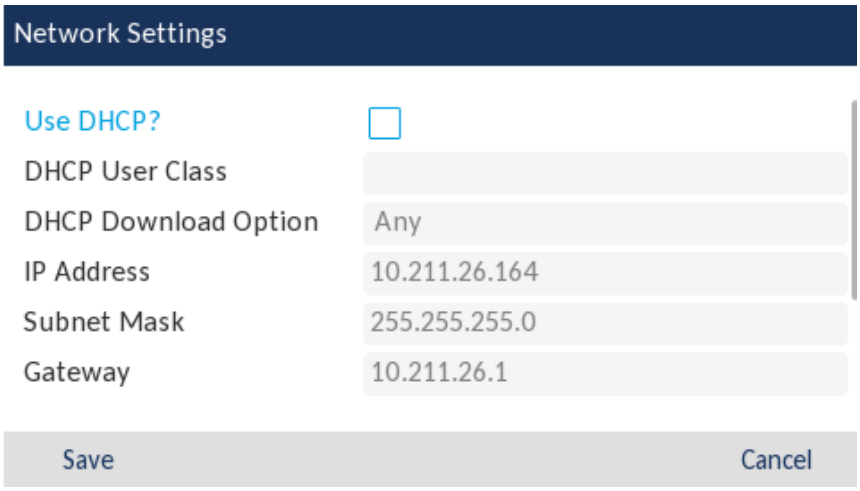
Accessing the IP48x Web GUI

1. Ensure both the IP48x and your computer are connected to the LAN. A direct cable connection requires PoE.
2. Open a supported web browser and navigate to the phone's IP address, for example: **https://192.168.10.35**
3. When prompted, enter the default credentials:
   - Username: admin
   - Password: 22222
4. Upon successful login, the Web GUI Home Page appears.

Configuration Settings Using the IP48x Phone Display

1. Press **Settings** on the phone display.
2. Go to **Advanced**.

3. Enter the password **22222** and press **Enter**.
4. Navigate to **Network**.
5. Scroll down to **Settings**.
6. Uncheck **Use DHCP?**.
7. Enter the **IP address**.
8. Enter the **Subnet Mask**.
9. Enter the **Gateway**.
10. Enter the **Primary** and **Secondary DNS**.
11. Select **Save**.
12. When prompted, click **Yes** to restart the phone.

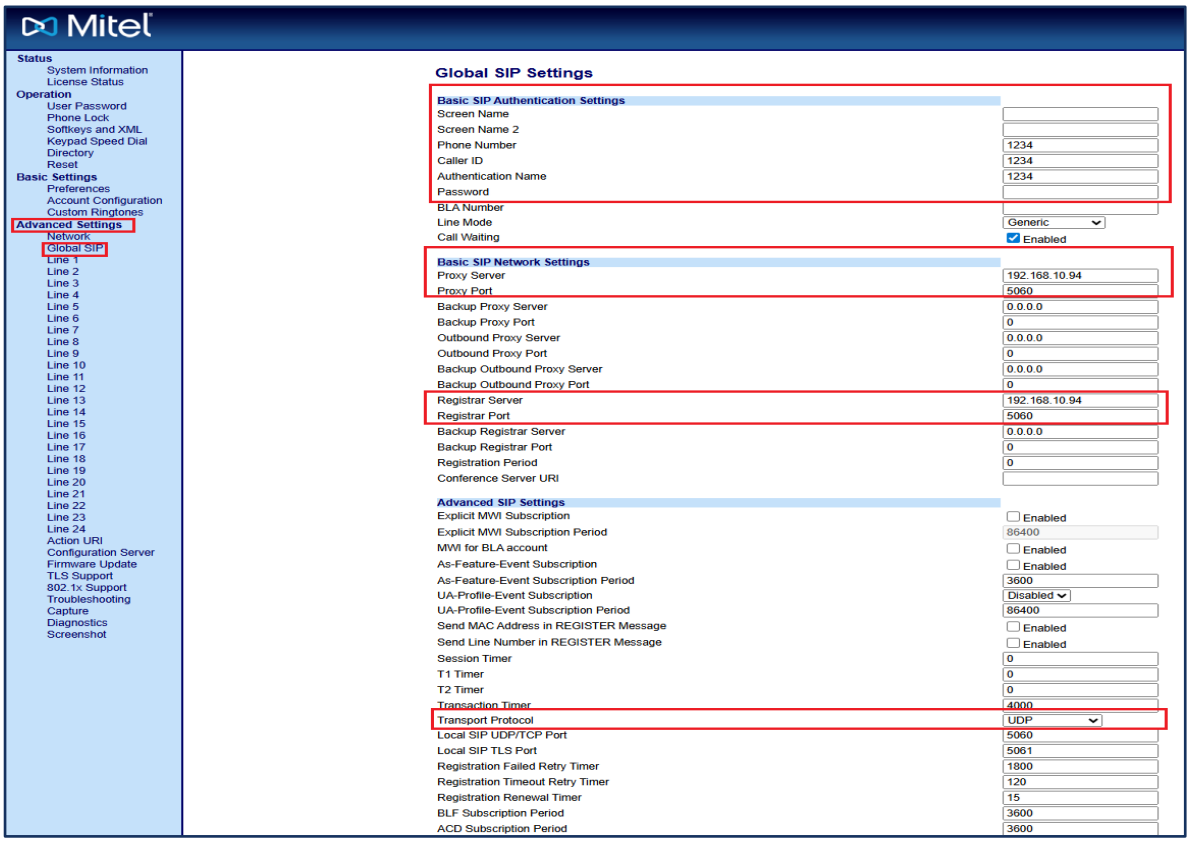


Configuration Settings Using the IP48x Web GUI

SIP CONFIGURATION

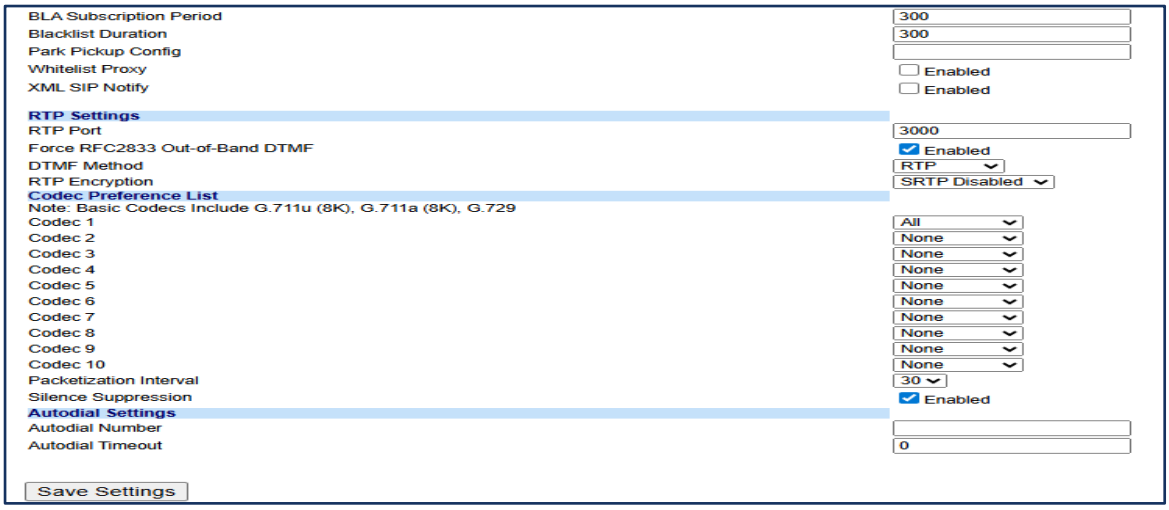
1. Navigate to **Advanced Settings > Global SIP**
2. Configure the following:
    - **Basic SIP Authentication Settings:**
        - Phone Number
        - Caller ID
        - Authentication Name
        - Authentication Password
    - **Basic SIP Network Settings:**
        - Enter MiVB/MBG FQDN or IP details:
            - Proxy Server
            - Proxy Port
            - Registrar Server

- Registrar Port
- **Advanced SIP Settings:**
  - Transport Protocol:
    - Set to **UDP**
    - Port: **5060**



CODEC SETTINGS

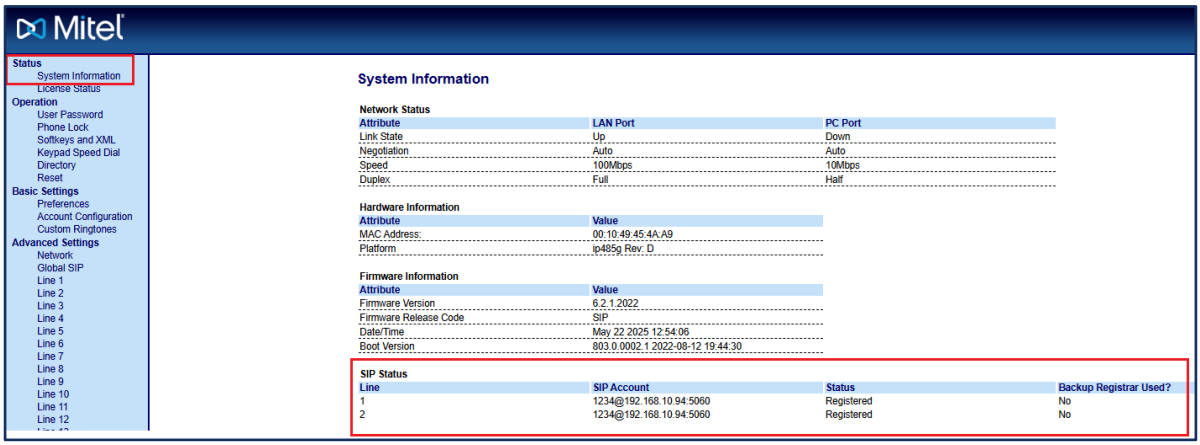
Navigate to the Codec Settings section to ensure codecs align with MiVB expectations (G.711 / G.729 based on deployment).



REGISTRATION STATUS

To confirm successful MiVB/MBG registration:

1. Navigate to **Status → System Information**
2. Verify that the **Registration Status** shows the SIP account as **Registered**.



TLS/SRTP Configuration on IP48x SIP Phone

To enable secure signaling and media, the IP48x SIP Phone supports TLS (for SIP signaling) and SRTP (for RTP media encryption).

IMPORT ROOT CERTIFICATES AND CONFIGURATION FILE

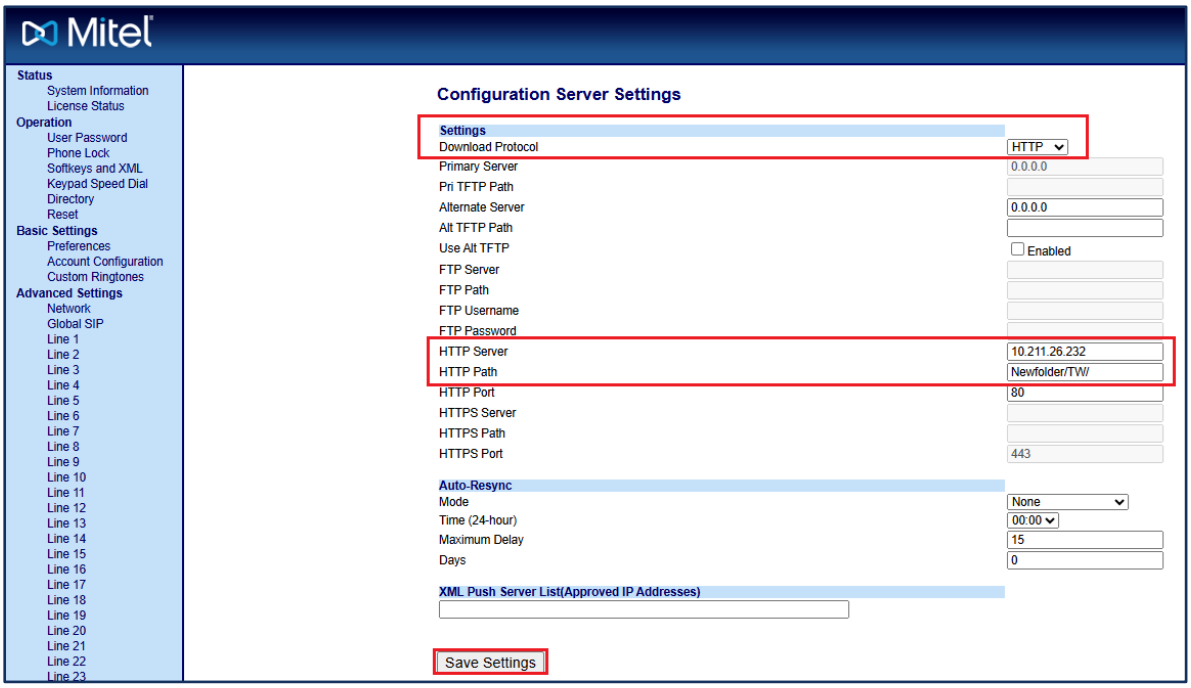
Depending on your deployment, import the appropriate files into the IP48x:

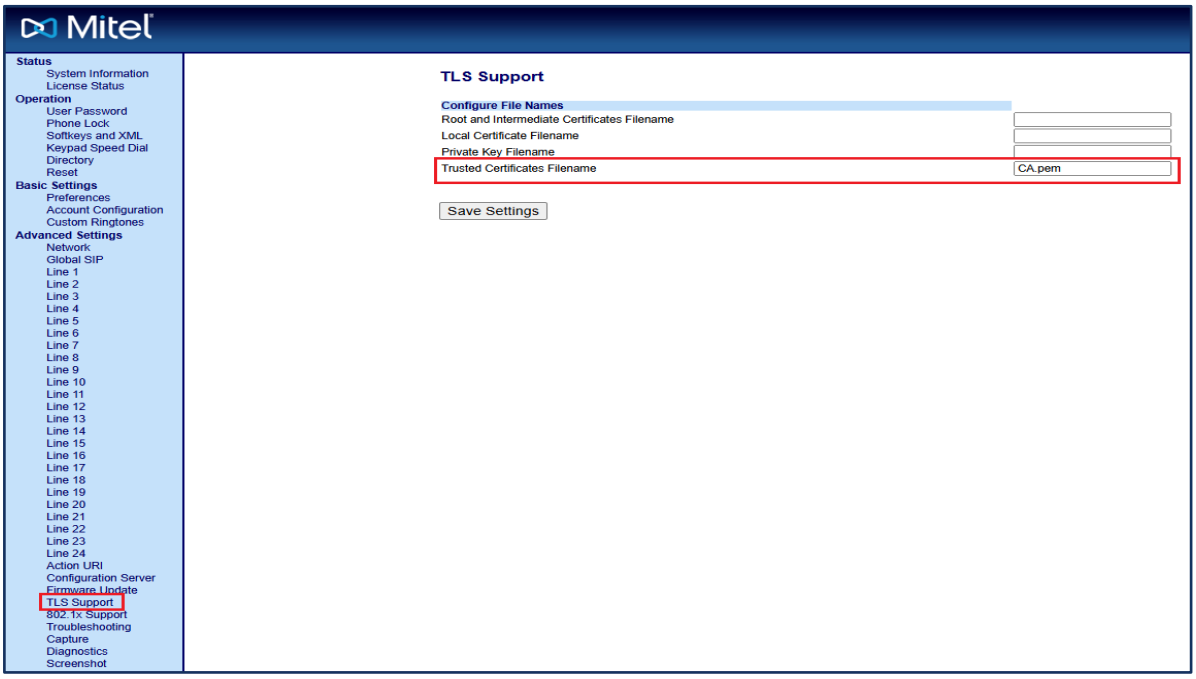
- **Direct MiVB Registration**
  Import:
  - **MiVB Root CA Certificate**
  - **startup.cfg** (contains required TLS/SRTP parameters)
- **MBG / Teleworker Deployment**
  Import:
  - **MBG Root CA Certificate**
  - **startup.cfg** (same file)

Required Parameters in startup.cfg:

- sips persistent tls: 0
- sip persistent tls keep alive: 60
- sip send sips over tls: 0
- sips trusted certificates: CA.pem

Note: These files can be uploaded via **TFTP or HTTP**, based on your provisioning setup.

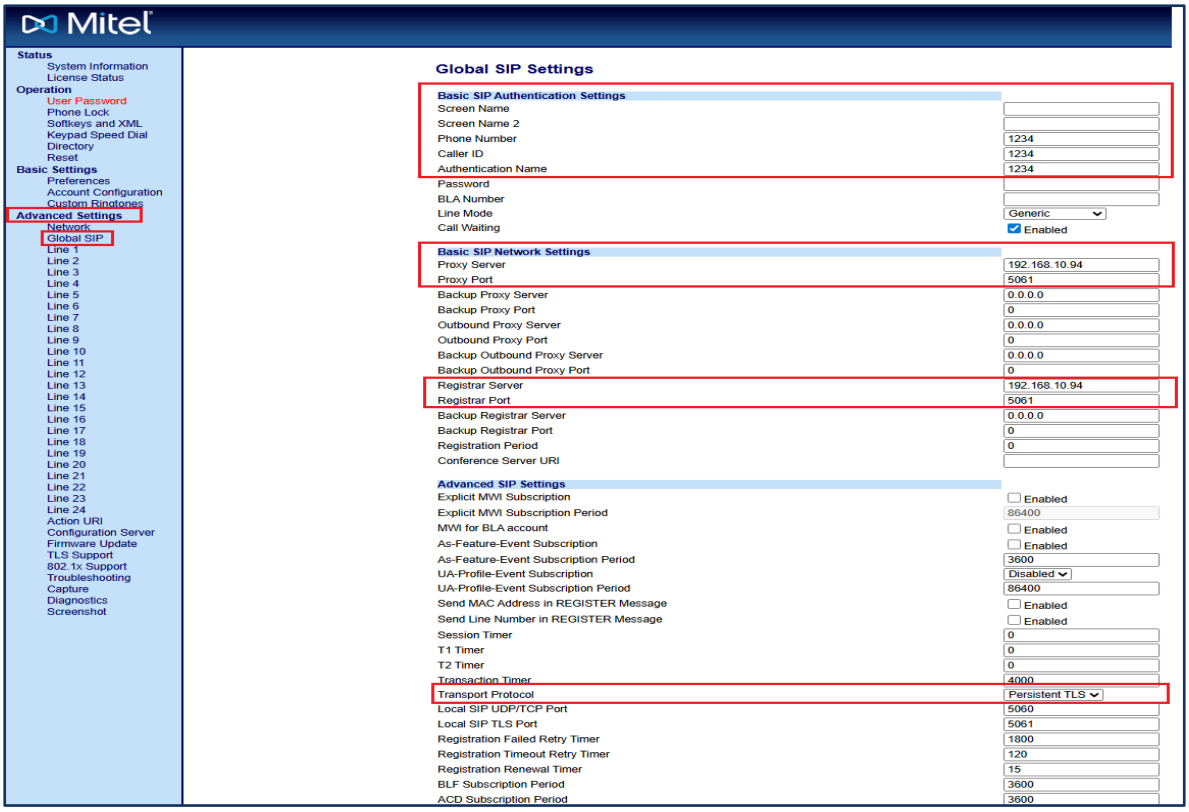




CONFIGURE TLS TRANSPORT

Navigate to **Advanced Settings > Global SIP**

- Change **Transport Protocol** to **Persistent TLS**
- Set SIP signaling port to **5061**



CONFIGURE SRTP FOR MEDIA ENCRYPTION

Navigate to **Advanced Settings > RTP Settings** and set **RTP Encryption** to **SRTP Only**