Configuration Guide for 2N IP intercoms

Table of Contents

Revision History

Version	Date	Author	Change
1.0	18.10.2022	Anna Bezverkhnia	Config Guide version 1.0 created
1.1	16.11.2022	Jakub Kuba	Revisions of version 1.0
1.2	4.12.2022	Jakub Kuba	Function description and revision
1.3	8.12.2022	Jakub Kuba	Update based on Zoom feedback
1.4	19.9.2023	Jakub Kuba	Added: - setup notes for bidirectional video support between Yealink T58W SIP Phone and 2N IP Style. - Auto-provisioning section 3.3 - Minor revisions

Supported 2N IP Intercom Versions

Manufacturer	Device	Firmware Version
2N TELEKOMUNIKACE a.s.	2N IP Intercom range	2.39.2+

2N IP Intercoms share the same SIP Stack, ensuring compatibility across the product range in FW version 2.39 and higher. Supported models:

- 2N® IP Style
- 2N® IP Verso
- 2N® IP Verso 2.0
- 2N® IP Solo
- 2N® IP Force
- 2N® IP Safety (audio only)
- 2N® IP Base
- 2N® IP Uni (audio only)
- 2N® IP Audio Kit (audio only)

Supported Features

Features supported during calls 2N Intercoms with Zoom

- Audio calls from 2N Intercom to Zoom (desktop, mobile)
- Calls from Zoom (desktop, mobile) to 2N Intercom
- DTMF Switch control (Zoom desktop, mobile)
- Call transfer (Zoom desktop, mobile)
- Call conference (Zoom desktop, mobile)
- Call recording (Zoom desktop)
- Video calls between supported 2N intercoms (2N® IP Style, 2N® IP Verso, 2N® IP Solo) and Zoom certified desk phones
- Bidirectional video calls between IP Style and Zoom certified desk phones
- Automatic provisioning for supported 2N Intercoms

1.   Overview

This document provides instructions on how to configure and add your 2N IP intercoms to the Zoom Web Portal.

2N IP intercom can register to Zoom Phone as a third-party SIP Endpoint and provide Telephony features and capability such as calling and other phone system/PBX functions.

2N IP intercoms can be connected via Zoom Phone subscription, which is a Zoom licensed feature.

2.   Configuration Steps - Zoom Web Portal

This section provides instructions on how to configure SIP Endpoint in Zoom Web Portal (does not include steps for configuring Vendor Endpoint specifically).

Prerequisites:
- A subscription to Zoom Phone is required to provision a 2N device. To obtain a subscription please visit Zoom Plans & Pricing and contact Zoom sales.
- Zoom approval is required for provisioning of 2N devices, account administrator should contact Zoom representative.

To register a SIP Endpoint to Zoom Phone you can use either a User or a Common Area to which you will assign a new device.

In order to set up a call between multiple devices, it is best to set up users and common areas respectively, depending on intended use of the Zoom Phone service in combination with 2N Intercoms.

2.1 User Creation

When using Zoom account, you are starting with your user account as the only user linked to the account. However, you can invite multiple users to be joined under your plan and allow them to receive calls via Zoom from 2N devices. To create a new user, simply follow these steps:

1. **Sign in** to the Zoom Web Portal
2. Click **User management** > Users
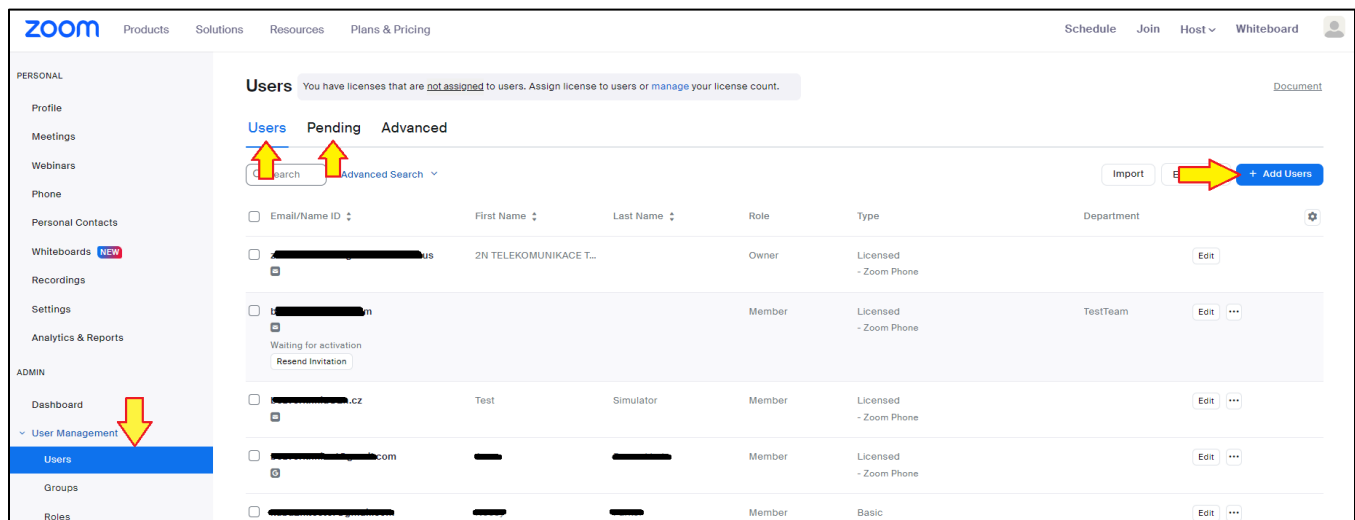3. Click the **+Add Users** button

Figure 1 - Add a new user to your Zoom account

4. Click **Add** and enter the following information:
   a. **Add users with their e-mail addresses**
      i. List the e-mail address of a user you wish to add to your account
      ii. Additional information about the user can be added now or edited later

Figure 2 - Enter the e-mail(s) of invited user(s) and optionally fill in their additional details

5. Click **Add**
6. Invited users will be listed in the **Pending** tab until they accept the invitation

2.2 Common Area Creation

You may wish to set up an account to be associated with a 2N Device that is publicly accessible as opposed to a dedicated user account. In that case, follow these steps to create a common area. The credentials created here can be used to set up a 2N Device and link it to other created accounts for calling purposes. You can also visit the Zoom support site for more information about managing Common Area Phones.

1. **Sign in** to the Zoom Web Portal
2. Click **Phone system management** > Users & Rooms
3. Click the **Common Area** tab
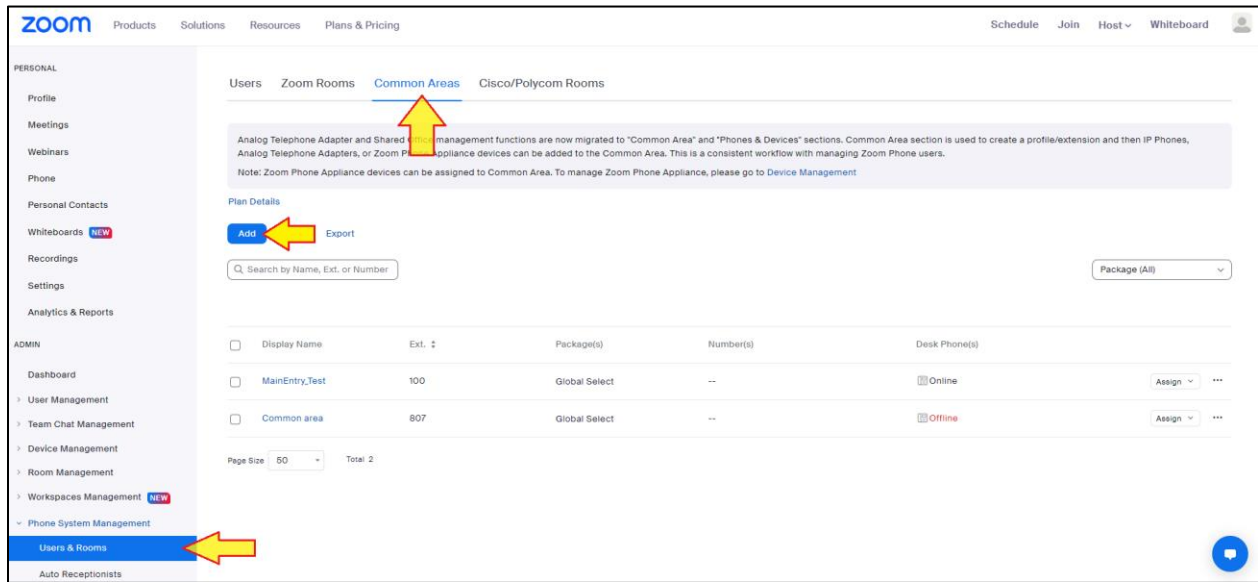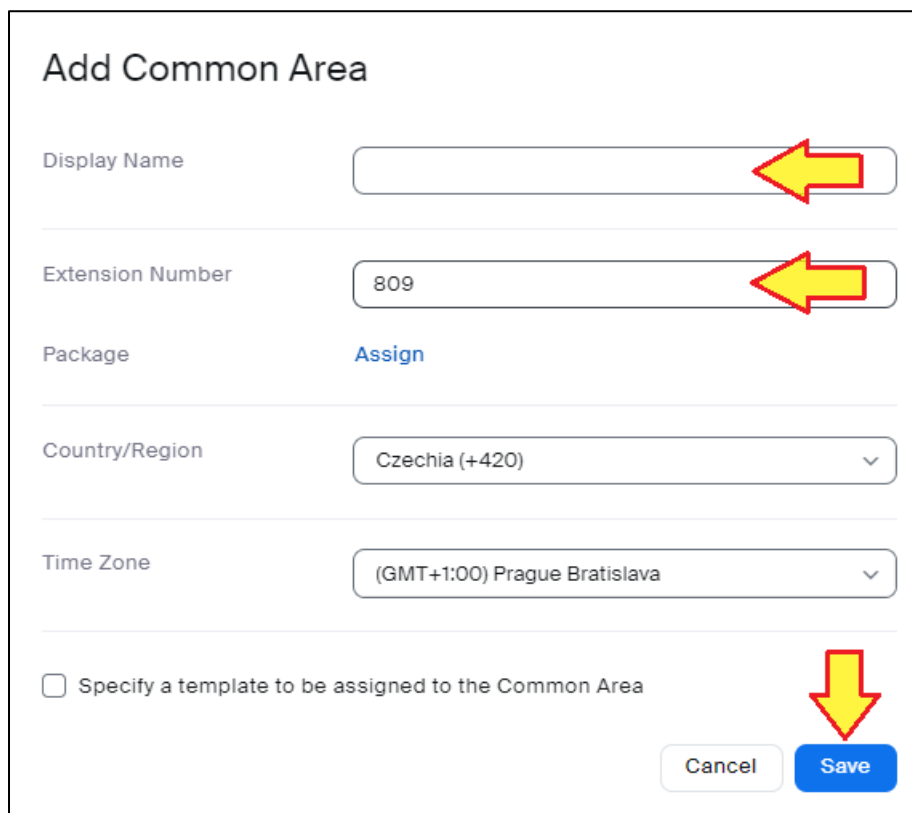
Figure 3 - Common area creation page

4. Click **Add** and enter the following information
   a. **Display Name**: Enter a display name to identify the area
   b. **Extension Numbe**r: Enter an extension number to assign it to the device
   c. **Package:** Select a Zoom Phone Package
   d. **Country/Region**: Select the country and country code
   e. **Time Zone**: Select the time zone and the city

Figure 4 - Common area creation detail

5. Click **Save**

3.   Configuration Steps – 2N IP intercom

This section provides instructions on how to manually configure 2N IP Intercom's SIP Endpoint (does not include steps for configuration in Zoom Web Portal – refer to 2. Configuration Steps - Zoom Web Portal for Zoom portal settings). **IP Style, IP Verso** and **IP Solo** can be provisioned automatically. If you are configuring one of these intercoms, refer to 3.3 Automatic Provisioning of 2N Intercoms.

3.1 Getting SIP credentials

To register a 2N IP intercom you need to have a User or a Common area, which will be assigned to the intercom. After creating the User or Common area, follow the instructions below.
1. **Sign in** to the Zoom Web Portal
2. Click **Phone system management** > Phones & Devices
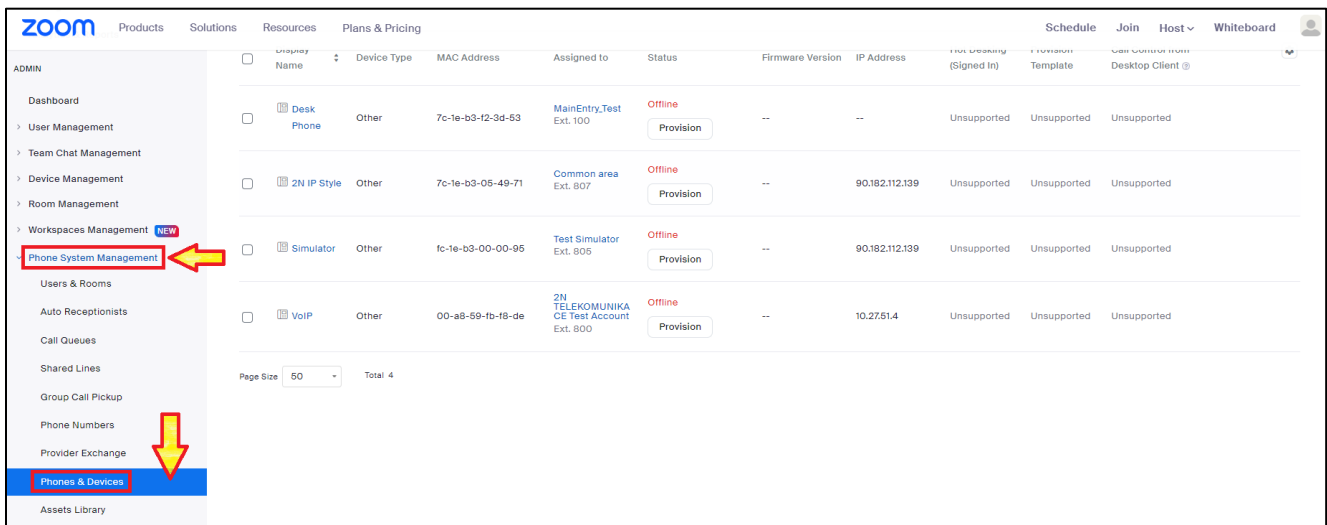
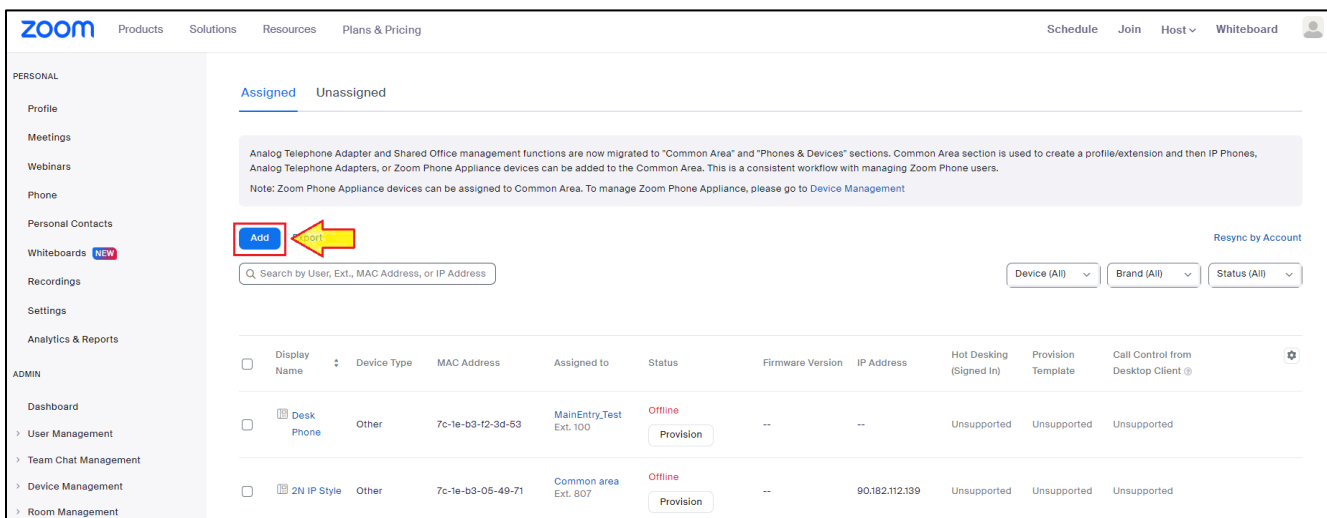*Figure 5 - Navigate to Phones and Devices*

Figure 6 - Add new device

3. Click **Add** and enter the following information:

Figure 7 - Enter device information to create new device

    a. **Display Name**: Enter a display name to identify the device

    b. **Description(Optional):** Enter the description for the device

    c. **MAC Address:** enter the 12-digit device MAC address.

    d. **Device type: Select Other.**

    e. Assigned To: Select a User or a Common area to be assigned to this device

4. Click **Save**
5. Return to device overview and click **Provision** to view the SIP credentials. You will need this information to complete the provisioning on the device side.

Figure 8 - Device provision information

6. Provisioning overview of the device contains the necessary SIP credentials which will be added to your 2N Intercom in part 3.2 Setting up the intercom as well as 3 certificates which will need to be uploaded to your 2N device.

Figure 9 - SIP Provisioning information and location of certificates

3.2 Setting up the intercom

To use intercom calling features firstly download the certificates from the Provision part and upload it to the device. You can find the guide where to download the certificates in part 3.1 Getting SIP credentials.

Use the instructions below to register your device to Zoom Phone.

1. **Sign in** on intercom's website

Figure 10 - IP Intercom Homepage - Services

2. Click **Services** > Phone
3. **Choose one of the two SIP accounts** (Figure 11 – SIP account settings) and enter the provision credentials, which have been obtained in 3.1 Getting SIP credentials.
    a. if the SIP account is not enabled, use checkbox to enable the selected SIP account
    b. **Display Name**: Enter a display name to identify the device
    c. **Phone Number:** Enter User Name from provision details on Zoom assigned device
    d. **Domain:** Enter SIP Domain
    e. **Authentication ID:** Enter Authorization ID
    f. **Password: Enter Password**
    g. **Proxy address:** Enter Outbound Proxy without port
    h. **Proxy Port: Enter** 5091
    i. **Registrar Address:** Enter Outbound Proxy address

4. **Click on Advanced Settings:**
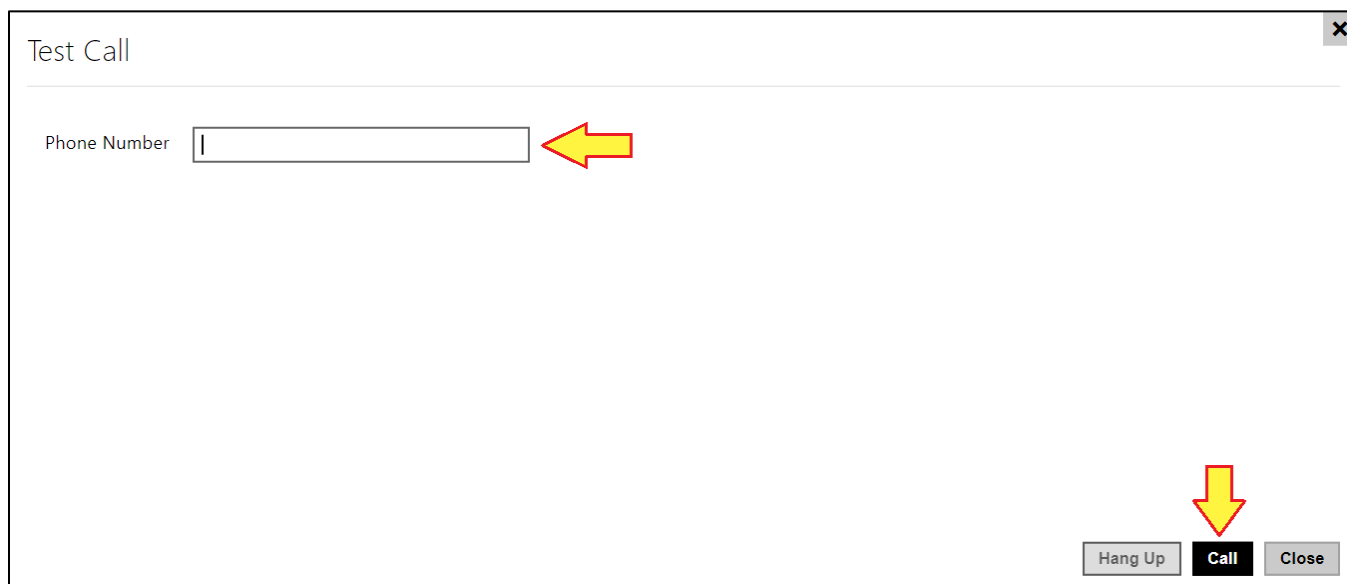   a. **Sip Transport Protocol:** TLS
   b. **Lowest Allowed TLS Version:** TLS 1.2

Figure 11 - SIP account settings

5. **Save** settings
6. **In case of successful registration, the registration State switches to REGISTERED.**

2N IP Intercoms allow users to create a test call from both SIP accounts with test call button marked in screen capture image in [3.2 Setting up the intercom](#) step 4. After you have successfully set up the SIP account and the state has changed to **REGISTERED**, you can use the feature.

Figure 12 - Enter phone number and click call

Test call: Click on Test call button in configured SIP account section. Enter another **Zoom User** or **Common area extension number** and click on **Call**.

3.3 Automatic Provisioning of 2N Intercoms

Following 2N IP Intercoms can be provisioned automatically:
- 2N IP Style
- 2N IP Verso
- 2N IP Solo

If you are setting up one of these supported devices, the SIP account on your device will be automatically provisioned following these steps:

1. **Sign in** to the Zoom Web Portal
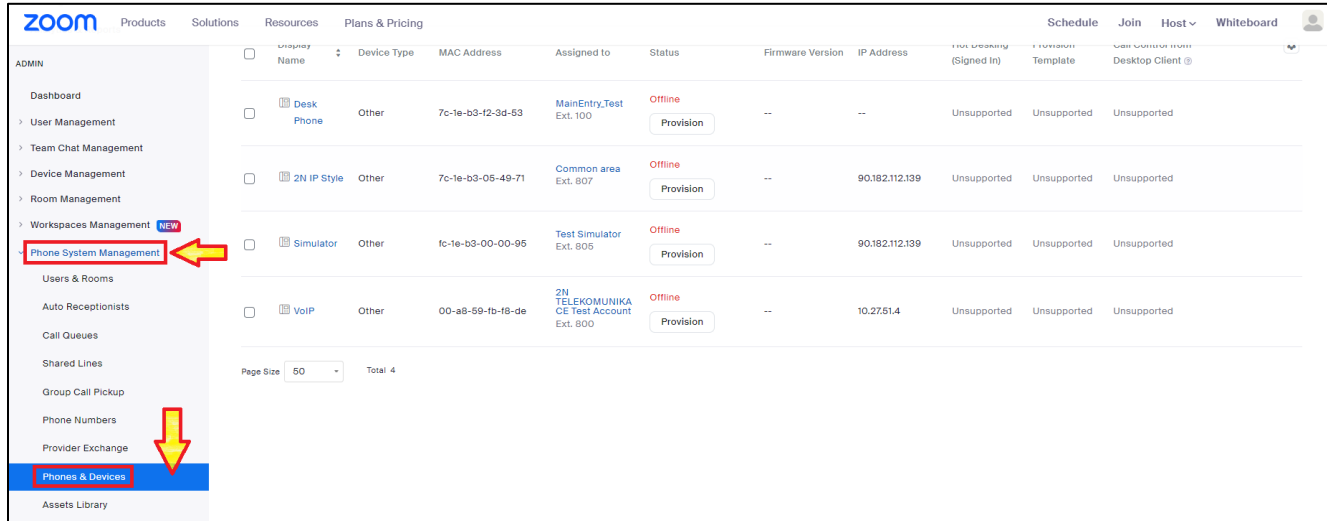2. Click **Phone system management** > Phones & Devices

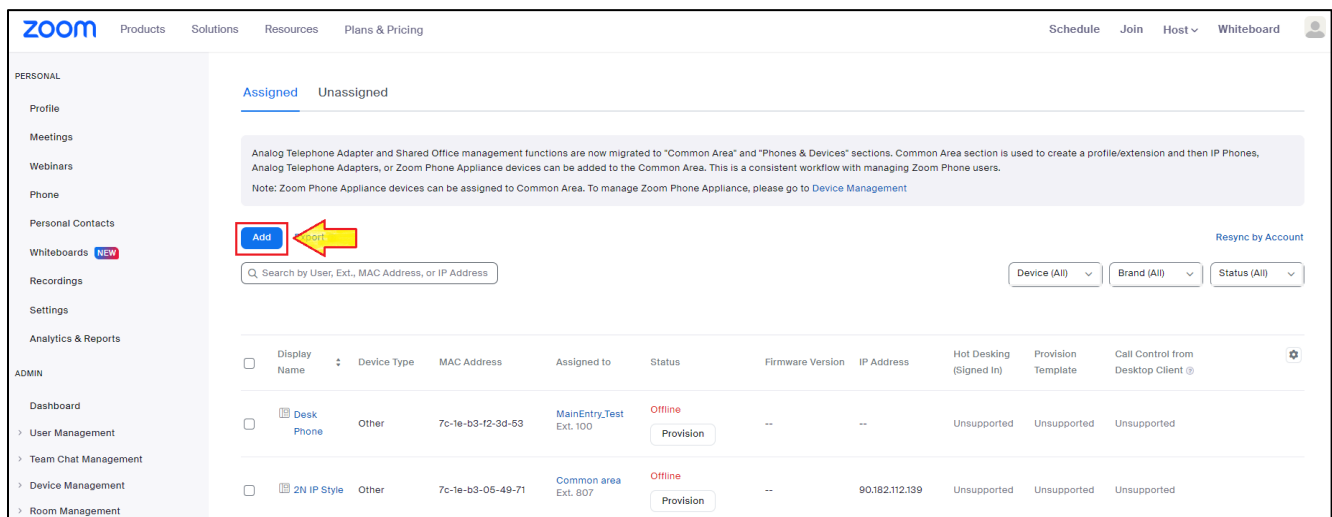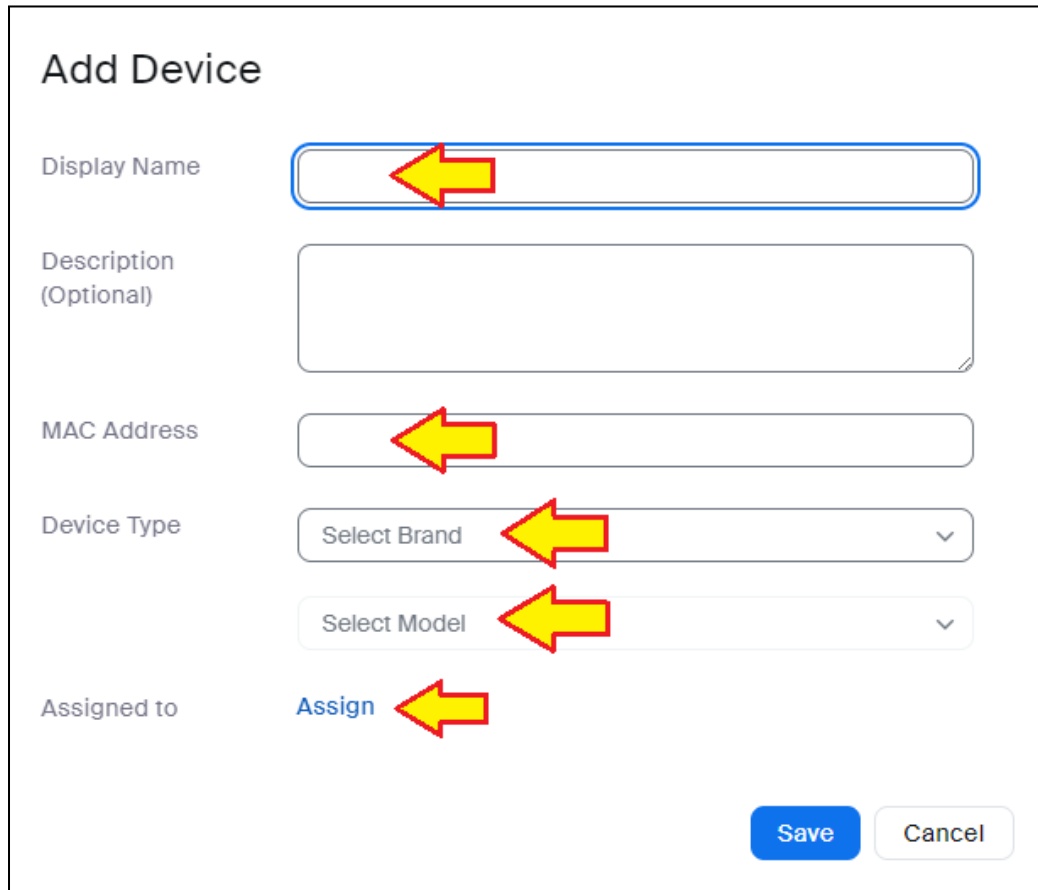*Figure 13 – Navigate to Phones and Devices*

3. Add a new device

Figure 14 - Add a new device

4. enter the following information:

Figure 15 - Enter device information to create new device

a. **Display Name**: Enter a display name to identify the device
b. **Description(Optional):** Enter the description for the device
c. **MAC Address:** enter the 12-digit device MAC address
d. **Device type:** Select **2N**
e. **Select Model:** Select your device model: **ip-style, ip-verso, ip-solo**
f. Assigned To: Select a User or a Common area to be assigned to this device

5. Click **Save**

6. Return to device overview (step 2.) and click **Provision**

Figure 16 - Get provisioning information

7. Follow the provisioning information provided:

Figure 17 - Provisioning information for supported devices

a. Download the 3 certificates:
   i. DigiCert Global Root CA
   ii. DigiCert Global Root G2
   iii. DigiCert TLS RSA4096 Root G5
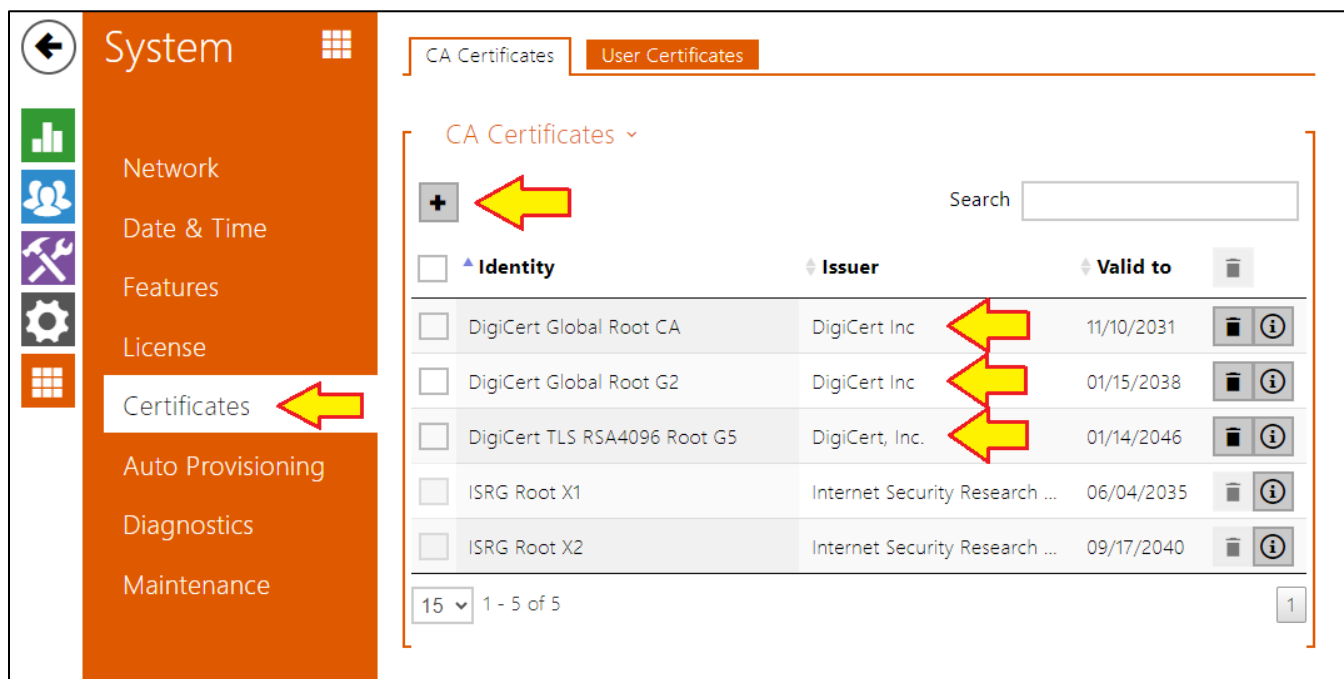
Figure 18 - Upload certificates to IP Style

b. Open your device's web interface (in a web browser, enter http:// followed by the device's IP address to access the device web page. To find out the IP address, install and run the 2N Network Scanner utility on a computer in the same local network as the device.)

    i. Navigate to **System > Certificates > CA Certificates**. Click "+" to upload the 3 DigiCert certificates respectively.

    ii. Navigate to **System > Auto Provisioning > Configuration**. Make sure Automatic Configuration Update is checked.

    iii. Under **Server Settings**, select **Manual Settings** for **Address Retrieval Mode**. In the **Server Address** field, enter "https://gopbx2n.zoom.us". In the **File Path** field, enter "/api/v2/pbx/provisioning/2N/ip-style". Make sure **Verify Server Certificate** is checked.

    iv. Click **Save**. Then click **Apply & Update** to complete the provisioning.

Figure 19 - IP Style Auto Provisioning > Configuration

8. Click **Next** in Zoom provisioning (continuing step 7. as shown in image Figure 17)
9. Click **Check**

Figure 20 - click Check button to confirm provisioning

10. After successfully finishing steps 7-10, you should get a message "Provisioning completed successfully"

11. You can confirm that the provisioning has been successfully applied to your device by navigating to your device's web interface **Services** > **Phone** > **SIP 1**, which will now contain all the account information and registration state will be shown as REGISTERED.

3.4 Setting up a user on your 2N Intercom and assigning the user to a call button

To call a Zoom account from your intercom, you must set up one or more users on the 2N IP Intercom and assign it to call buttons on the device. NOTE: IP Style does not require user assignment to a button.

1. Log in to your intercom
2. Navigate to **Directory > Users** and create a new user

Figure 21 - Click button to create a new user

3. Enter a name of the user and a phone number
    a. If you only have one SIP account active, the phone number is sufficient. If you have multiple SIP accounts active, make sure to set up the number followed with /1 or /2 to define which SIP account is to be used with the phone number

Figure 22 - Create user and assign Name and Phone Number

4. **Save** the new user
5. Navigate to **Hardware > Buttons** section on the intercom and add the newly created user to desired available button on your 2N IP intercom

Figure 23 – Assign user to button

6. Click Add and you are ready to use your intercom for calls to your Zoom application.

3.5 Switch control

Zoom application allows you to control 2N IP Intercom's Switch and unlocking door during a call.

1. Log in to your intercom
2. Navigate to **Hardware > Switches** and create a new user

Figure 24 - Homepage - Hardware

3. Choose from Switches which one you would like to set up
   a. **Enable switch** with checkbox
   b. Select **controlled output**
   c. **Test switch** – allows you to check if the controlled output works properly
   d. Set up **activation code**
   e. Choose accessibility type (for our purposes we selected **DTMF Only**)

Figure 25 - Switch Control

Once you have successfully set up and tested your Switch, you can start using Zoom applications to control the switch remotely during call. This feature works both on Zoom mobile and Zoom desktop.

1. Set up a call between your 2N Intercom and Zoom application and open keypad in your application.
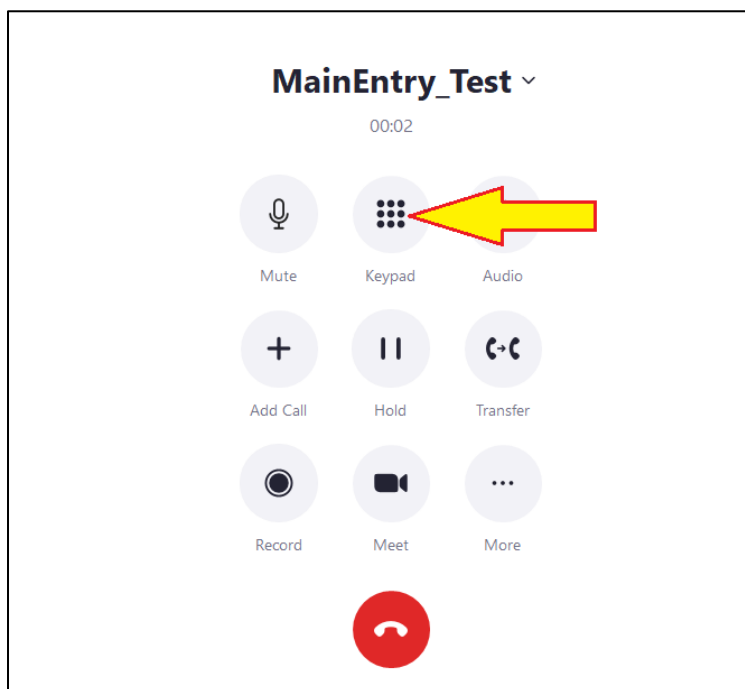
Figure 26 - Switch to keypad during call

2. On your keypad dial up the same DTMF code you set up on your IP Intercom (Figure 17 - Switch Control) and follow the code with a * sign
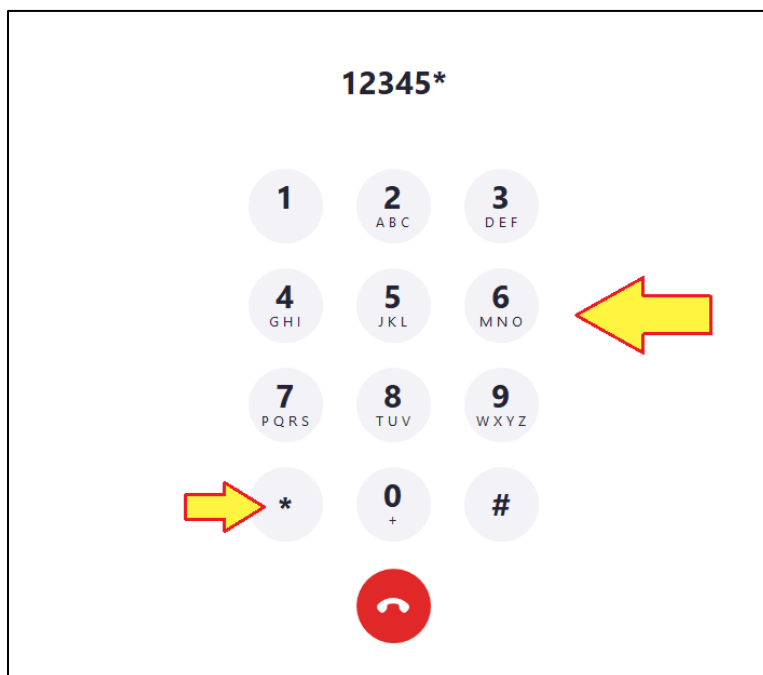
*Figure 27 - Dial DTMF code followed by a * sign.*

3.6 Video calling between 2N Intercoms and Zoom Phone certified hardware desk phones with video enabled

Following 2N IP Intercoms has been tested for video calls with selected ZOOM Phone certified desk phones:
- 2N IP Style*
- 2N IP Verso
- 2N IP Solo

Video has to be enabled for the intercom during setup as shown in step 2 below, as outlined in screenshot "Figure 28 – Turn on Video Intercom switch in Zoom device detail".

*2N IP Style video intercom supports bidirectional video calls with selected Zoom Phone certified desk phones. This chapter will provide you with setup information for 2N IP Style and Yealink T58W SIP Phone.

1. 2N IP Style can be provisioned automatically as described in 3.3 Automatic Provisioning of 2N Intercoms
2. After provisioning your IP Style, navigate to **Phones & Devices** > **Click on {Your Created Device} name** > **Policy** and allow **Video Intercom** switch
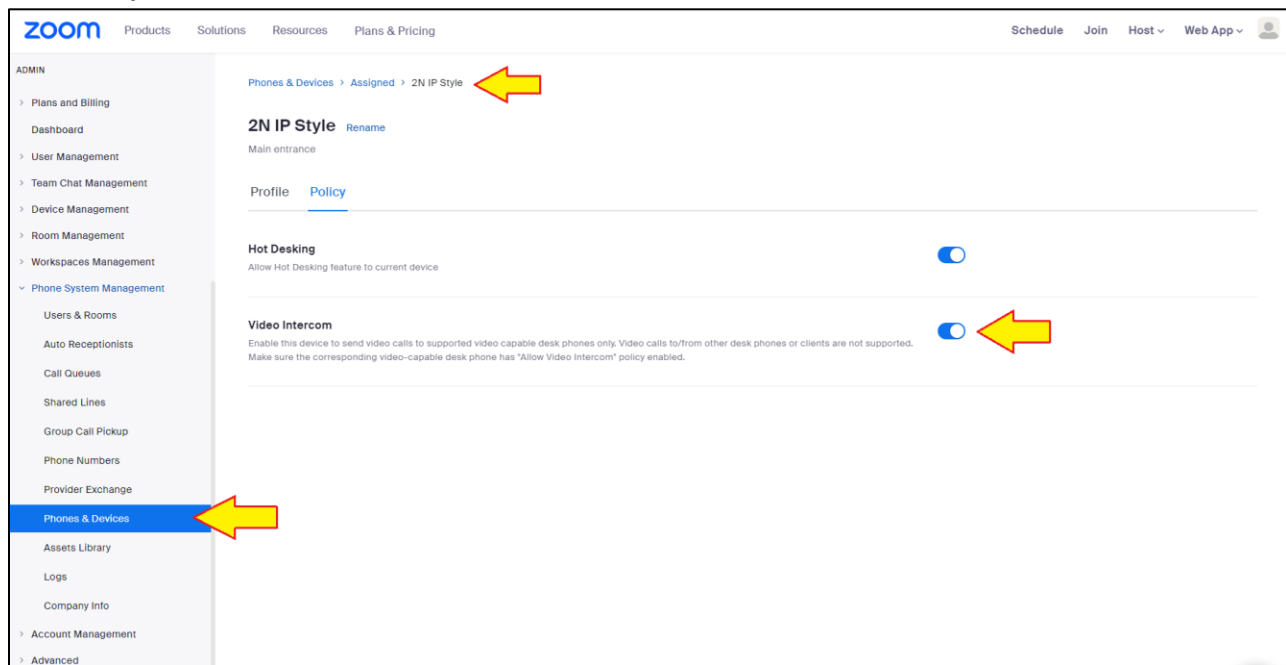
Figure 28 - Turn on Video Intercom switch in Zoom device detail

3. Navigate to your intercom's web interface **Services** > **Phone** > **Video**
4. If you want to enable bidirectional video with 2N® IP Style, continue to **Services** > **Phone** > **Video** > **Bidirectional video**
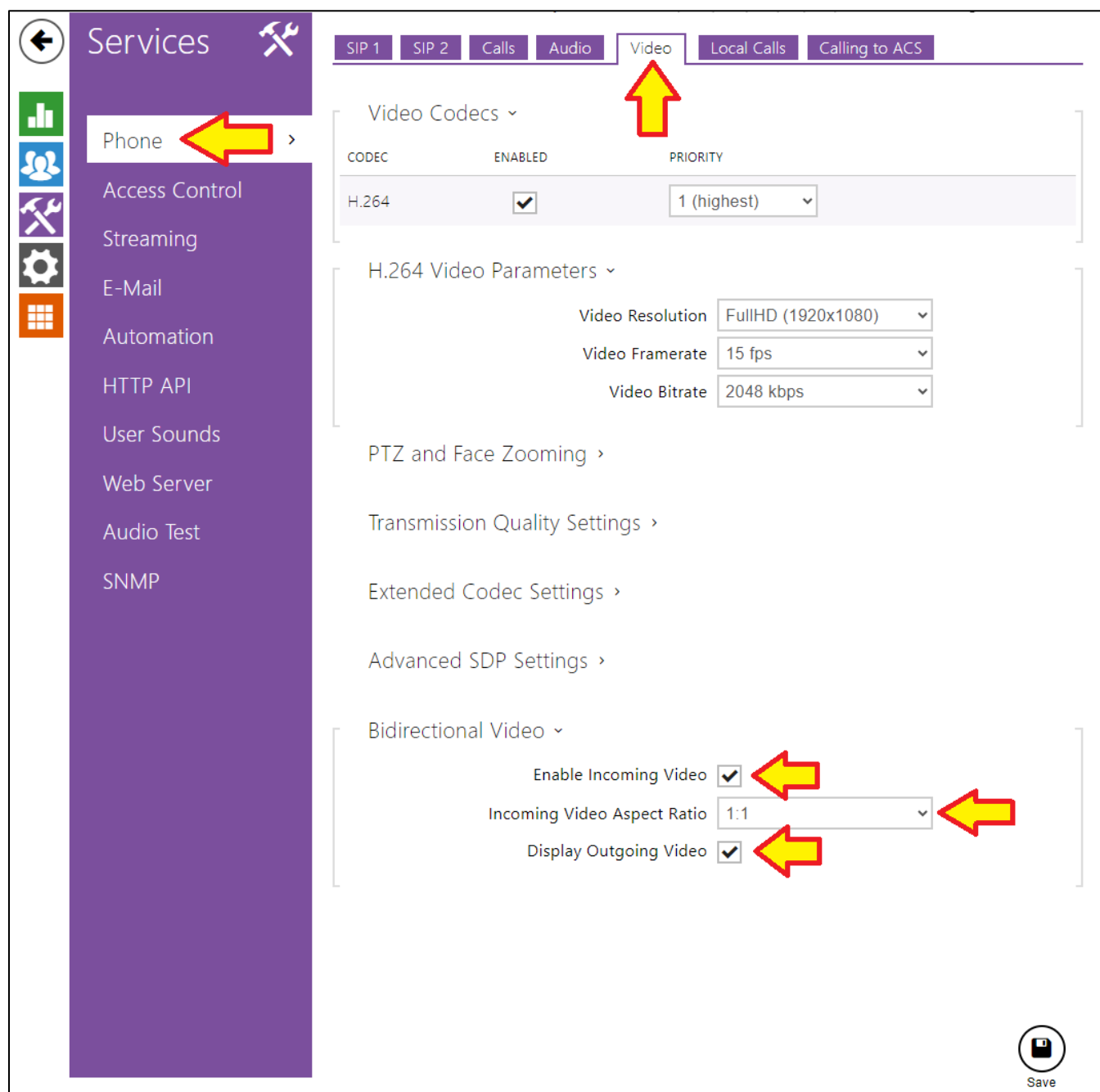
Figure 29- Enable Bidirectional Video on IP Style

5. Check **Enable Incoming Video** checkbox
6. Select preferred **Incoming Video Aspect Ratio**
7. (optional) Check **Enable Outgoing Video** checkbox
8. **Save**

Your Yealink T58W SIP Phone must be added to Zoom account and provisioned as well.

1. As in section 3.3 Automatic Provisioning of 2N Intercoms, **Add** new device

Figure 30 - Adding New Device

2. Fill in the following information:
    a. **Display Name**: Name your device
    b. **MAC Address**: Fill your device's MAC address
    c. **Select Brand**: Yealink
    d. **Select Model**: t58w
    e. **Assign**: Select a user or a common area
    f. **Save**
3. Provision your Yealink T58W SIP Phone. Click Provision Info button to get additional information
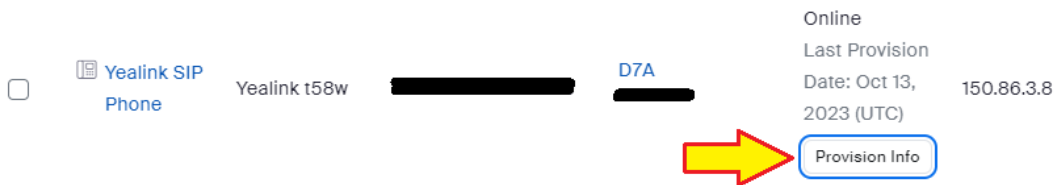
Figure 31 - Yealink SIP Phone provisioning information

4. Follow the provisioning instructions for your Yealink T58W SIP Phone

Figure 32 - Yealink T58W SIP Phone provisioning instructions

5. Yealink T58W SIP Phone provisioning steps:
   a. Click to download the firmware (downloads latest version of Yealink firmware for your phone)
   b. Press the **OK** button on the phone's display or press the **Menu > Status** to obtain the phone's IP address.
   c. Enter the IP address into your web browser and log in to the phone's web interface
   d. Go to **Settings > Upgrade** section.
   e. Go to **Upgrade > Select And Upgrade Firmware**, browse the directory of where you've downloaded the firmware and select **Upload**. The phone will upgrade and reboot, this process will take 3-5 minutes, please do not turn off or unplug the device.

f. **NOTE:** You will be prompted to enter administration login credentials. The default username and password is **admin/admin**. If you do not know the username and password, contact the vendor of the phone.

6. Click **Next** in Zoom provisioning process to continue next steps of Yealink provisioning
   a. Reset existing Yealink T58W SIP Phone configuration:
      i. Log in to the phone's web interface.
      ii. Go to **Settings > Upgrade** section.
      iii. Go to **Reset to Factory** and select **Reset Now** or **Reset to Factory**.
   b. Configure Provisioning server
      i. Log in to the phone's web interface.
      ii. Go to the Setting tab, and select Auto Provision. In the Server URL field, enter the provisioning URL: https://gopbxyp.zoom.us/api/v2/pbx/provisioning/Yealink/t58w and leave the **User Name** and **Password** fields blank. Click Confirm to save the configuration.
   c. **NOTE**: After provisioning your Yealink T58W SIP Phone through this automated process, you might lose direct access to the phone's web interface. If this happens and you would like to continue having access to the phone's web interface, turn this on in Zoom interface by navigating to Phone System Management > Company Info > Account Settings > Desk Phone and turn on the switch for Web Interface

7. Navigate to device detail on **Zoom** > **Admin** > **Phones & Devices** > **Policy** and enable checkbox for **Allow Video Intercom**
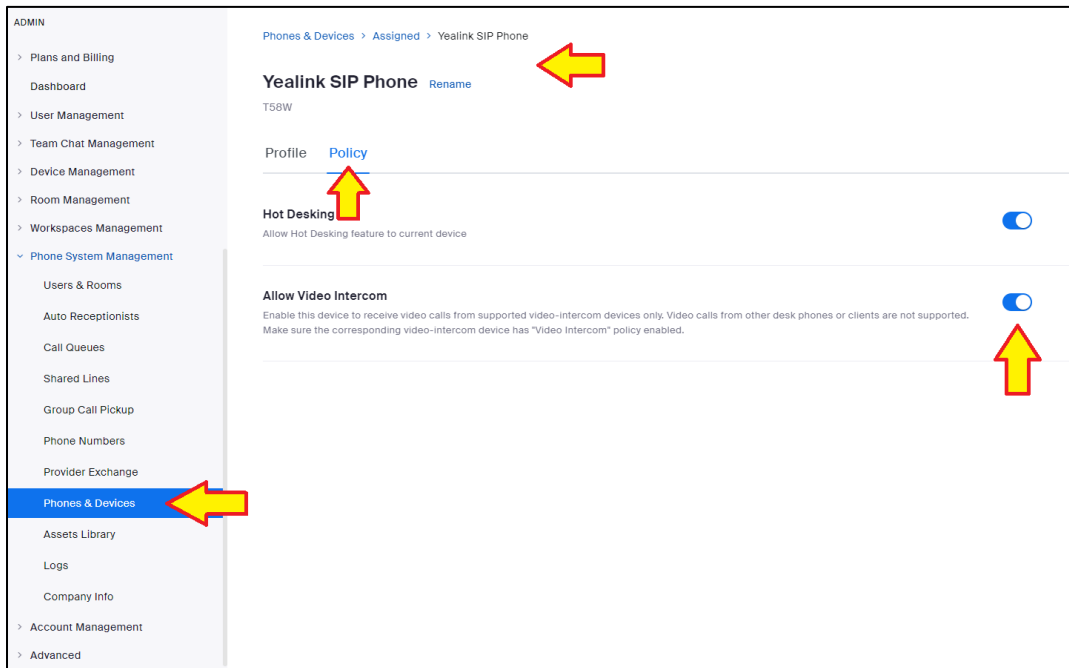
Figure 33 - Allow Video Intercom for Yealink T58W SIP Phone

After completing the setup for IP Style and Yealink T58W in this chapter (3.6 Bidirectional video setup between 2N IP Style and Yealink T58W SIP Phone) you are ready to make bidirectional video calls. Simply create a new user on your IP Style as outlined in 3.4 Setting up a user on your 2N Intercom and assigning the user to a call button or dial the extension number assigned to the intercom on your Yealink T58W SIP Phone.

4. Call Transfer, Call Conference and Call recording

Once you have set up your Zoom account with multiple users and common areas, it is possible to use additional Zoom application features to allow you increased call control within your organization. All functions except for the from **Meet** function are supported with 2N Intercoms.
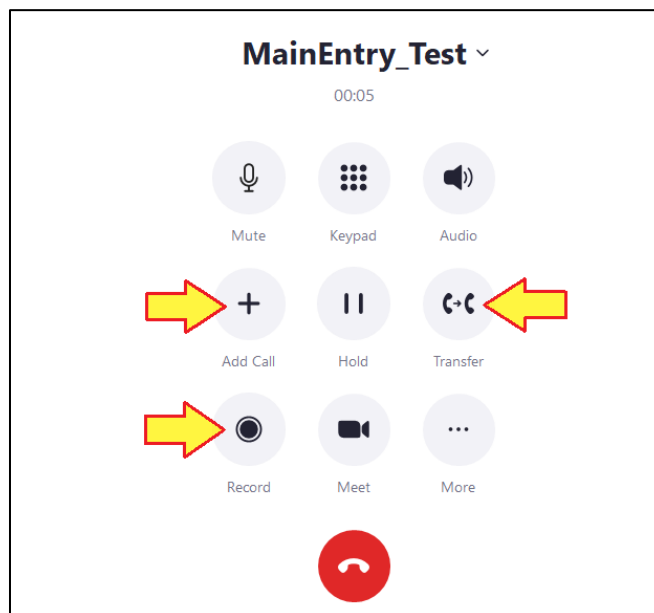
Figure 34 - Zoom call supported features

Of these, three are key with 2N IP Intercom control and access control – Call transfer, Call Conference and Call Recording.

4.1 Call Transfer

During call, you can use the Transfer button to transfer the call to a new caller within your organization, for example having a call transferred from receptionist directly to a member of your organization that is expecting a visitor.

During a call:
a. the **Transfer** button
b. type a name or a number where you want to transfer the call and dial it
c. choose in which way should the call be transferred
    i.   Warm Transfer
         • This transfer requires additional action in form of transfer finalization
    ii. Blind Transfer
    iii. Transfer to Voicemail
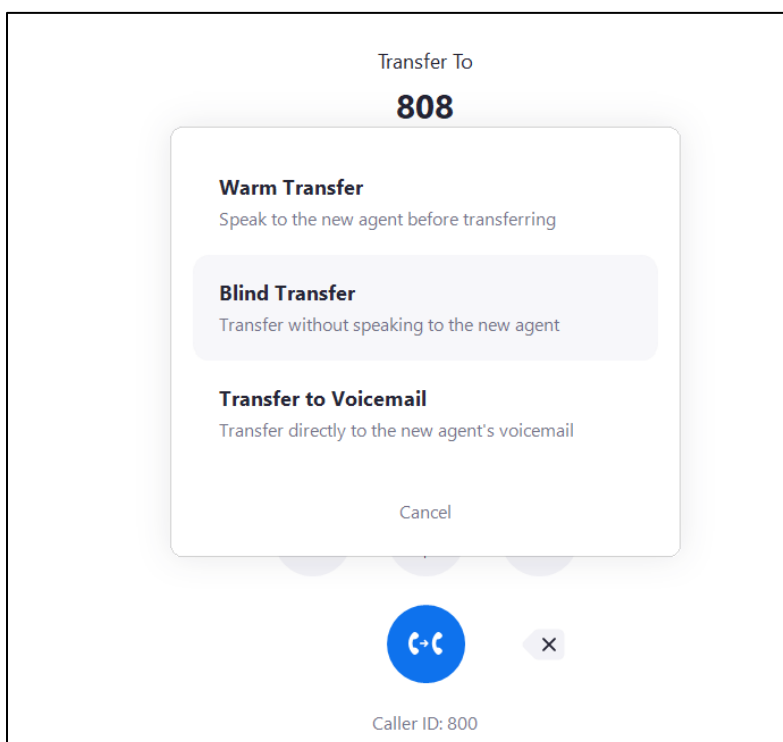
Figure 35 - Call transfer options

4.2 Call Conference

Zoom application allows you to invite another user to the call. In this case, you can invite another user to the call with a 2N Intercom.

During call:

    d.   Click the **Add Call** button

    e.   Type a name or a number of the contact you wish to add to your call and dial it

    f.   Your original call will be on hold until the additional call is answered

    g.   Once the additional call is answered, click the merge button to re-connect the original call
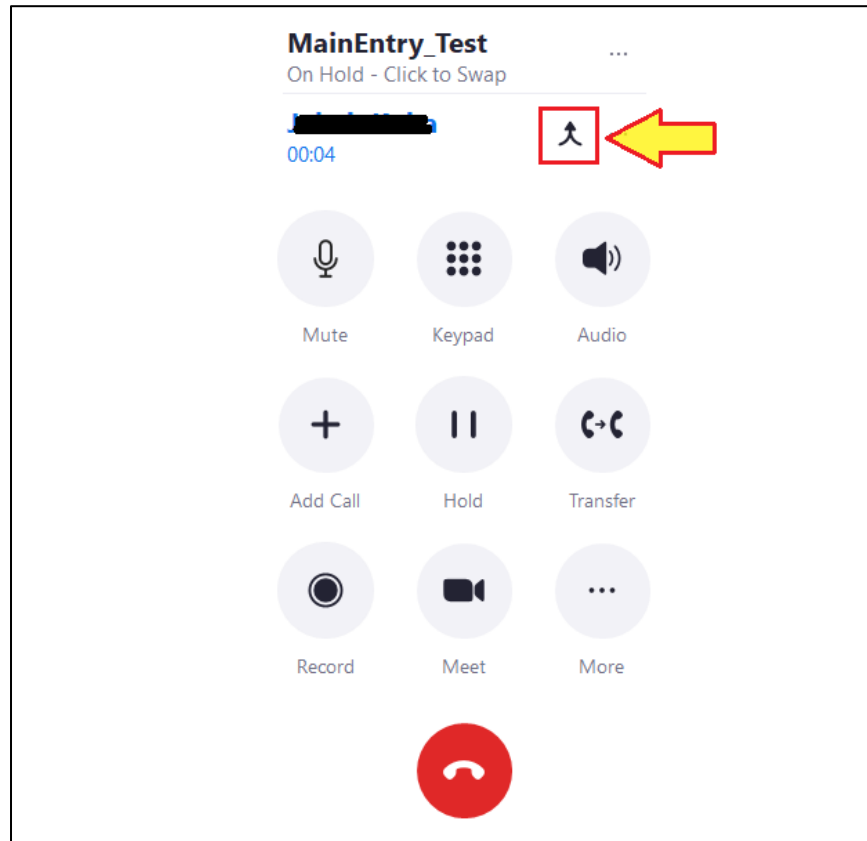
Figure 36 - Call a new contact and merge it to the original call

4.3 Call Recording

Zoom application also provides the option to record calls within the Zoom desktop application. Both parties to the call are audibly notified that a call recording has been started.

During call:
  h. Click the **Record** button
  i. You will hear an audio message that the recording has started
  j. Recording can be stopped at any time during the call with Stop Recording button, or it will be automatically stopped and saved when the call is terminated
  k. Recording from your call can be played back from call log

Figure 37 - Play a recording from call log. Cancel recording during call

5. Troubleshooting

Visit 2N FAQ section for dealing with troubleshooting issues: [FAQ.](#)

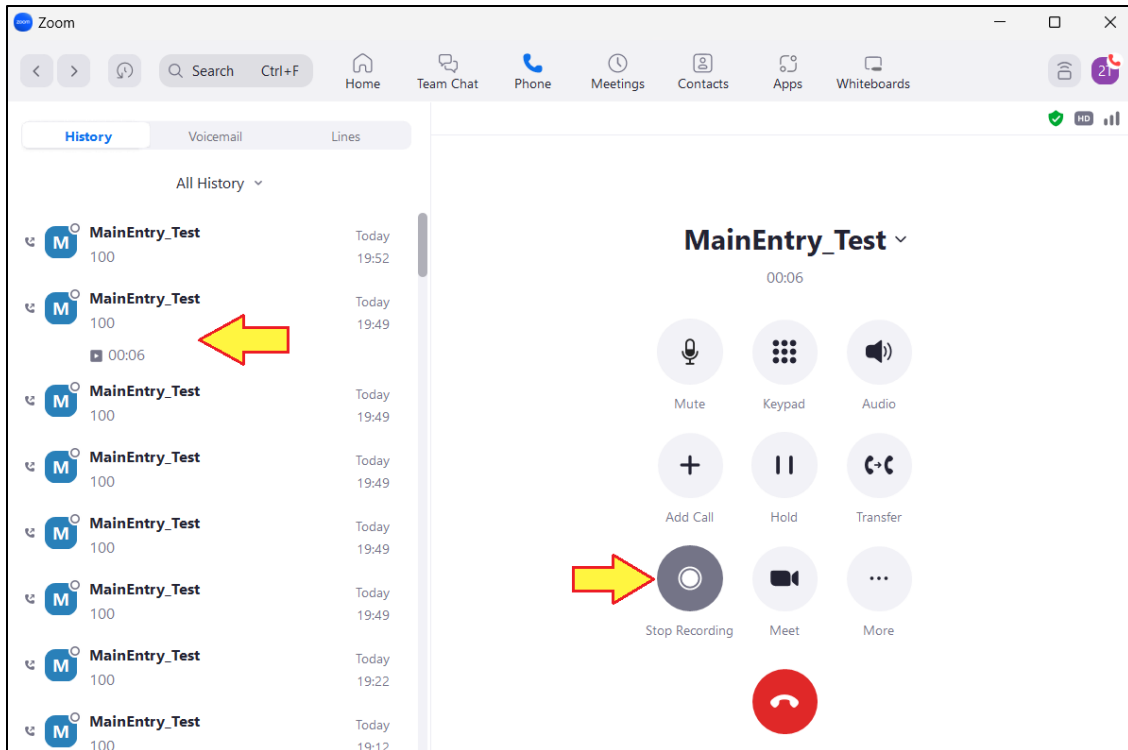**In case of difficulties setting up the 2N IP intercom, kindly follow this [link](#) for intercom detailed installation and configuration manuals, including additional information.**

To create a ticket with 2N Technical Support team, please [use this form](#). 2N Technical Support is also available during business hours through live chat with on call technicians directly on the company website at [2n.com](#).

For detailed user guide for Zoom Phone, visit [Getting started with Zoom Phone (users)](#) or if you are looking for help with administration of Zoom Phone, visit [Getting Started with Zoom Phone (admin)](#).

This section provides instructions on how to resolve common issues. Below are examples of how to format etc. (if applicable)

SIP Registration State = "NOT REGISTERED" / Failure reason: Registration failed

Definition: The server received the register request from the endpoint and responds with an unauthorized message.
- Ensure the SIP credentials (extensions, authentication ID, password) are correct.
- Under Basic Settings > SIP, click on the blue circular arrows to the right of the password field. If the Password is not what it should be, the web browser is probably auto filling the password field. If so, any change on a page containing a password could be filled in an undesired string.

SIP Registration Status = "No reply from Server"

Definition: The device is not able to communicate across the network to the phone server.
- Double check the "SIP Domain (Proxy Server)", under Basic Settings > SIP tab fields if filled out correctly with the address of your server and port number.
- Ensure the firewall (if present) is not blocking the incoming packets from the server.
- Ensure TLS is configured for SIP Transportation Method (Advanced Settings > Advanced SIP).