AudioCodes 400HD IP Phone Series

C455HD IP Phone

Microsoft Teams Application

Version 1.17





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Related Documentation

Document Name
C455HD IP Phone for Microsoft Teams Release Notes
C455HD IP Phone for Microsoft Teams Quick Guide
Device Manager Administrator's Manual

Document Name

Device Manager Deployment Guide

https://docs.microsoft.com/en-us/MicrosoftTeams/phones-for-teams

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1 Overview

The AudioCodes C455HD IP phone is a high-end, native Microsoft Teams executive IP phone with a large, color 5" touch screen, integrated Bluetooth and Wi-Fi, and optional connectivity to a color touch screen Expansion Module.

Feature highlights:

- Full duplex speakerphone and headset connectivity
- Graphical 5" color capacitive touch screen (1280 X 720 resolution)
- Multi-lingual support
- Dual GbE support
- PoE or external power supply
- USB port for USB headset
- Applicable to part number **C455HD-DBW**:
 - Integrated Bluetooth and Wi-Fi (contact your local AudioCodes representative for more information about regional availability of Wi-Fi / Bluetooth)
 - Optional Expansion Module support with a graphical 5" color capacitive touch screen, 480 X 854 resolution (the Expansion Module is purchased separately)

See here for video blogs and blogs about AudioCodes' Teams phones.

See here for videos and webinars about AudioCodes' Teams phones.

See here marketing material related to all AudioCodes' Teams phones.

Specifications

The following table summarizes the phone's software specifications.

Feature	Details				
Media	Voice Coders: G.711, G.729, G.722, SILK, Opus				
Processing	Acoustic Echo Cancelation: G.168-2004 compliant, 64-msec tail length				
	Ambient noise block				
	Adaptive Jitter Buffer				
	Voice Activity Detection				
	Comfort Noise Generation				
	Packet Lost Concealment				

Feature	Details
	RTP/RTCP Packetization (RFC 3550, RFC 3551), SRTP (RFC 3711)
Microsoft Teams phones	 Authentication (Sign in with user credentials; Sign in using PC/Smartphone; Modern Authentication; Phone lock/unlock)
feature set	Calling (Incoming/Outgoing P2P calls; In-call controls via UI (Mute, hold/resume, transfer, end call); PSTN calls; Visual Voicemail; 911 support
	Calendar and Presence (roadmap feature) (Calendar Access and Meeting Details; Presence Integration; Exchange Calendar Integration; Contact Picture Integration; Corporate Directory Access)
	Meetings (roadmap feature) (One-click Join for Meetings; Join Skype for Business meetings; Meeting Call controls [Mute/unmute, hold/resume, hang up, add/remove participant]; Meeting Details. See also <u>here</u> for related Microsoft documentation.
Configuration	Teams admin center (TAC)
and Management	OVOC / Device Manager
Debugging Tools	AudioCodes' Android Phone Utility (see Android Phone Utility on page 105)
	Log upload to Microsoft server (certification for 3rd party Skype for Business clients)
	Remote logging via Syslog
	SSH Access
	Capturing the phone screen
	TCPdump
	Audio Debug recording logs
	Media logs (*.blog)
	Port mirroring network monitoring
	Remote Packet Capture network sniffer application
Localization Support	Multi-lingual support; the language pack list is not yet final and is subject to modification.
Hardware	Five-inch color capacitive touch screen, 1280 x 720 resolution, with an intuitive user interface.

Feature	Details				
		Wired connectivity:			
		 Two RJ-45 [Gigabit Ethernet (GbE)] (10/100/1000BaseT Ethernet) ports: LAN and PC port 			
		✓ USB port for USB headset			
		C455HD with DBW suffix flavor:			
		• White USB port - host port for USB headset			
		• Black USB port - default port but can be configured to host port. To configure device / host port:			
		<pre>setup_usbport2_mode.sh host (from device to host) setup_usbport2_mode.sh device (from host to device) It can alternatively be configured by setting the configuration</pre>			
		file parameter 'management/usbport2/mode' to the value of USB_HOST_MODE/USB_DEVICE_MODE			
		✓ RJ-11 interface			
		✓ Survivable Branch Appliance (SBA)			
		Wireless connectivity (applies to PNs TEAMS-C455HD-DBW and TEAMS-C455HDPS-DBW):			
		✓ Dual band 2.4GHz/5GHz, 802.11b/g/n Wi-Fi support			
		 Wi-Fi supported protocols: WEP, WPA-PSK/WPA2-PSK and WPA/WPA2 Enterprise (802.1X) PEAP only 			
		Integrated optional Bluetooth support for (applies to PNs TEAMS- C455HD-DBW and TEAMS-C455HDPS-DBW):			
		 Bluetooth headsets 			
		 Microsoft Better Together for device pairing 			
		Bluetooth Wideband Speech (WBS) supported for headsets			
		Expansion Module (optional)			
		Mounting:			
		 Wall and desktop mounting options 			
		 One angle for desktop mount, another angle for wall mount 			
		Power:			
		DC jack adapter 12V			
		Power supply AC 100 ~ 240V			

Feature	Details			
	✓ PoE Class 3: IEEE802.3af (optional)			
	Keys:			
	✓ VOICE MAIL message hotkey (including LED)			
	 4-way navigation button with OK key 			
	✓ MENU			
	✓ HOLD			
	✓ MUTE (including LED)			
	✓ TRANSFER			
	✓ VOLUME control key			
	✓ HEADSET (including LED)			
	✓ SPEAKER (including LED)			
	✓ BACK			
	✓ CONTACTS			
	 AC key – for future use – currently used as home key 			

Allowing URLs, Ports (Security)

This section shows network administrators which URLs/Ports to allow when deploying Teams phones (security).

From the device point of view, the following table summaries the ports the phone uses. See also <u>Microsoft's guide to the ports the phone uses</u>.

Table 1-2. Ones y Forts to Allow when Deploying reality findings (Security)						
Server Role	rver Role Service Name		Protocol	Notes		
DNS Server	All	53	DNS	-		
AudioCodes Device Manager	AudioCodes DM	443	HTTPS	AudioCodes device management server		
AudioCodes Redirect service	AudioCodes DM	443	HTTPS	AudioCodes redirect service redirect.audiocodes.com		
NTP timeserver	Android NTP	123	UDP	-		

Table 1-2: URLs / Ports to Allow when Deploying Teams Phones (Security)

Server Role	Service Name	Port	Protocol	Notes
Time Zone Database	Time Zones	443	HTTPS	Time Zone Database (often called tz or zoneinfo)
Microsoft Apps Artifacts server	Package manager	-	-	Microsoft will be requested for the protocol and port and FQDN. These URLs are provided by the Admin agent.

Security Guidelines for Android-based Native Teams Devices

AudioCodes' Android-based Native Teams devices are purpose-built and customized for Microsoft Teams calling and meeting. Customers might perceive Android-based products as vulnerable to security issues but security is *less* of an issue on devices purpose-built and customized for Microsoft Teams calling and meeting. Security is in fact *enhanced* on these devices *as part of their default use*.

When analyzing device security, two levels must be addressed:

- Authentication and security with respect to Teams connectivity and use
- Android level / system of the device

AudioCodes recommends the following:

- Use the sign-in mode Sign-in with other device option. In this mode, users do not type the password on the device but instead obtain a code on their PC / laptop to be used to sign-in; the phone obtains a private token that enables it to access Teams cloud; this token, unlike a password, allows only that device which obtained it to reuse it. The token is stored on the secured file system.
- Leverage Multi-Factor-authentication (MFA) to improve sign-in security.
- Reduce the expiration time of the sign-in for devices which are connected remotely (outside the organization's network) versus devices inside the organization's premises.

AudioCodes recommends visiting Microsoft's technical pages for more security guidelines and policies for Microsoft Teams adoption:

- Overview of security and compliance Microsoft Teams | Microsoft Docs
- Identity models and authentication for Microsoft Teams Microsoft Teams | Microsoft Docs
- Sign in to Microsoft Teams Microsoft Teams | Microsoft Docs

Android-Level Security Hardening

Major Android-level system-level developments have been incorporated into AudioCodes' devices to improve security:

See Google Play Services on the next page

- See Running Android in Kiosk Mode below
- See Screen Lock on the next page
- See AudioCodes Private Key on the next page
- See Android Debug Bridge (ADB) on the next page
- See App Signing on the next page
- See Web Browser on the next page
- See Remote Configuration Management on the next page
- See AudioCodes Device Manager Validation on page 8
- See Sandboxing on page 8
- See Device File System on page 8
- See Keystore on page 8
- See Device Certificate on page 8
- See Data Protection on page 9
- See Debugging Interface on page 9
- See SSH Access: Reduced File System
- See Android Security Updates on page 9

Google Play Services

Goggle Play services were removed from AudioCodes devices software. Access to any Google store or Play service is not allowed.

Updating the AudioCodes device's Android software and application is performed via special software components that either connect to the Teams Admin Center or to AudioCodes' Device Manager over a secured channel.

Running Android in Kiosk Mode

Android Kiosk Lockdown software 'locks down' Android devices to only allow essential apps by disabling access to the Home / Launcher. Using Android Kiosk Lockdown software, Android devices can be converted into public kiosk terminals or secured work devices.

Only specific Microsoft apps and AudioCodes-signed apps that were certified and approved in the certification process can run in Kiosk mode; even if a malicious user manages to install a new unauthorized app on the file system, the launcher on the device will only run those specific approved apps and this cannot be changed in run time (only with a new software code provided by AudioCodes).

Screen Lock

AudioCodes devices use a screen lock mechanism to prevent any malicious user/users from gaining access to Calendar information and / or Active Directory list of employees and / or triggering unauthorized calls from the device. After enabling screen lock, the device automatically locks after a preconfigured period; a code is required to unlock the device and resume full operation.

AudioCodes Private Key

The system software on AudioCodes devices is signed with AudioCodes' private key. Users can replace the complete software only with new software that is also signed by AudioCodes' private key.

This prevents users from replacing the complete over-the-air (OTA) package of the device with any new system software, unless the software is fully signed by AudioCodes.

Android Debug Bridge (ADB)



The device does not allow access to ADB.

AudioCodes disabled the Android Debug Bridge (ADB) application and keeps the Teams app running in the front all the time. As a result, it's impossible to install other apps from unknown sources, and to sideload apps.

App Signing

Android requires all apps to be digitally-signed with a developer key before installation; currently, the AudioCodes devices verify that apps are signed by Microsoft.

App signing prevents malicious user/users from replacing a Microsoft-signed app with an app that "pretends" to be Microsoft but which lacks the private key that is known only to Microsoft.

Web Browser

The AudioCodes device does not include a Web browser. Users cannot browse to the public internet or internal intranet. All Web services are customized to connect to Office 365 services and AudioCodes' managed services such as the One Voice Operations Center (OVOC).

Without a Web browser, malicious user/users will not be able to access the device and browse from it as a trusted device into the customer network.

Remote Configuration Management

AudioCodes devices do not have an embedded Web server. Configuration and management are performed using one of the following remote interfaces:

Microsoft Teams Admin Center (for Native Teams devices) over HTTPS protocols, enabled after a successful sign-in authentication process.

- AudioCodes Device Manager (part of AudioCodes' OVOC suite) over HTTPS.
- Debugging interface over SSH. Note that SSH must be disabled by default and enabled only per specific case for debugging purposes only.

AudioCodes Device Manager Validation

The AudioCodes Native Teams devices validate the AudioCodes Device Manager identity using a known Root CA:

- The device is shipped with known Root CAs installed. See <u>AudioCodes Root CA Certificate</u> on the next page.
- For the initial connection, the AudioCodes Device Manager accesses devices using a known CA.
- Once a successful secured connection has been established between the device and the Device Manager, the user can replace the Root CA on the Device Manager and on the phone, and re-establish the connection leveraging any Private Root CA.

Sandboxing

AudioCodes devices use Android Application Sandbox so that each application can access its own data and is isolated from other applications. This prevents a malicious app from accessing the code or the data of other applications in the system.

Device File System

The AudioCodes device's file system is encrypted on 455HDdevices. Customers may enforce a policy of device encryption via Microsoft's cloud-based Intune service.

Keystore

With AudioCodes devices, the certificate keys are encrypted on the device file system.

Device Certificate

AudioCodes devices are shipped with a unique certificate which is signed by AudioCodes Root CA. Network administrators can install a third-party certificate on the phone in the customer's trusted environment. Network administrators should follow the following guidelines when replacing the existing trusted CAs:

- The device certificate URL will only be valid if no SCEP server URL is present
- Use the following two parameters to set the device certificate in the phone's configuration file:
 - security/device_certificate_url=http://<server-ip>/device.crt
 - security/device_private_key_url=http://<server-ip>/device.key

Data Protection

AudioCodes devices run Android which has integral procedures for protecting and securing user data.

Debugging Interface

- AudioCodes devices leverage SSH as a debugging interface.
- AudioCodes recommends that customers disable SSH on devices via AudioCodes' Device Manager (OVOC).
- AudioCodes recommends changing the Admin password from the default, via the Teams Admin Center or AudioCodes' Device Manager (OVOC).
- When a device or multiple devices needs to be debugged, users can enable SSH on it / them, access SSH with the new Admin password for the debugging phase, and disable SSH once debugging is finished.



SSH is by default disabled and can be enabled with Administrator permissions in the phone screen (Device Administration > Debugging > SSH).

SSH Access: Reduced File System Privileges

Administrator users who access SSH have reduced file system privileges. For example, files cannot be deleted, and some parts of the file system cannot be reviewed. This prevents malicious actions or unintended errors that might cause damage to the device.

Android Security Updates

AudioCodes regularly adopts and integrates Android security updates.

For reference, see here.

AudioCodes Root CA Certificate

The following figure shows the AudioCodes Root CA Certificate.

Certificate Details for F	File 'New Text Document.cer'
Certificate Hierarchy:	
RootCA	
Version:	3
Subject:	CN=RootCA,O=ACL
Issuer:	CN=RootCA,O=ACL
Serial Number:	0x1
Valid From:	1/1/2000 2:00:00 AM IST
Valid Until:	1/1/2030 2:00:00 AM IST
Public Key:	RSA 2048 bits
Signature Algorithm:	SHA256WITHRSA
Fingerprint:	MD5 • AD:F7:94:DE:B3:1D:F0:3F:74:3B:C5:42:34:51:19
	Import Extensions PEM ASN. 1
	ОК

-----BEGIN CERTIFICATE-----

MIIDMTCCAhmgAwIBAgIBATANBgkqhkiG9w0BAQsFADAfMQwwCgYDVQQKE wNBQ0wx

DzANBgNVBAMTBIJvb3RDQTAeFw0wMDAxMDEwMDAwMDBaFw0zMDAxMD EwMDAwMDBa

MB8xDDAKBgNVBAoTA0FDTDEPMA0GA1UEAxMGUm9vdENBMIIBIjANBgkqh kiG9w0B

AQEFAAOCAQ8AMIIBCgKCAQEA6GK495KUCXAm/UE17G4/cjnZN4LNaxYEYz bfZL0a

EhgSKYt/LQ+iUcDhojsneusNgrcGkpwKklKsGsvGWmSRNULV01CW+TX2VJN7 3+hh

V0uzhyOIYAUhbDaoqNM6Kp5b7sJ1ew4Ig9kfd/ma9CzI5koESLlw/inLj/r+rD96

mUcPElWrKspv7Qy4I14fsK/yMArixRopTL1munVVPpSFM9Jh8IY3JHyr5CQJXKK s

EhGAJsnHaRqsR2Su3X/WtsIgEF+cvP34pxhlhFL29nMfnaFATSS3rgGaFISvI1ZS

esLMqkWjp9cqGYrvt7K61sYnvMMb+o/KbWqVokXb+Fr7bwIDAQABo3gwdjAMB gNV

HRMEBTADAQH/MB0GA1UdDgQWBBQDXySn9hz15IDraZ+iXddZGReB+zBHB gNVHSME

QDA+gBQDXySn9hz15lDraZ+iXddZGReB+6EjpCEwHzEMMAoGA1UEChMDQU NMMQ8w

DQYDVQQDEwZSb290Q0GCAQEwDQYJKoZIhvcNAQELBQADggEBAI0rUywo mmWWJnH3

JOfKiS3+VnX5hJITZymvWanMXUz/6FonHccPXEBYTrUYwhiWx3dwELAFXDFK kxMp

0KKWZ4F39cAOLRjqhzya+xUeeJ9HQZCXYAJ6XgvTfN2BtyZk9Ma8WG+H1hNv vTZY

QLbWsjQdu4eFniEufeYDke1jQ6800LwMIFIc59hMQCeJTenRx4HdJbJV86k1gBU E

A7fJT1ePrRnXNDRz6QtADWoX3OmN7Meqen/roTwvLpEP22nYwvB28dq3JetlQ Kwu

XC4gwl/o8K2wo3pySLU9Y/vanxXCr0/en5l3RDz1YpYWmQwHA8jJlu8rxdhr+VNQ Zv6R/Ys=

-----END CERTIFICATE----

2 Setting up the Phone

The instructions following show how to set up the phone.

Unpacking

When unpacking, make sure the items listed in the phone's *Quick Guide* are present and undamaged.

If anything appears to be missing or broken, contact the distributor from whom you purchased the phone for assistance.

For detailed information, see the phone's *Quick Guide* shipped with the device or available from AudioCodes.

Device Description

Use the following graphics to identify and familiarize yourself with the device's hardware functions.

Front View

The front view of the phone is shown in the figure and described in the table.





Table 2-1: Font View Description

Item #	Label/Name	Description
1	Ring LED	Indicates phone status:
		Green: Idle state
		Flashing red: Incoming call (ringing)

Item #	Label/Name	Description	
		Red: Answered call	
2	TFT touch screen	Thin Film Transistor touch screen, a type of LCD (Liquid Crystal Display) interactive screen which displays calling information and lets you configure phone features by touching the glass.	
3	Navigation Control / OK	 Press the button's upper rim to scroll up menus/items. Press the button's lower rim to scroll down. Press the button's left or right rim to move the cursor left or right (when editing a contact number for example). Press OK to select a menu/item/option. 	
4	Voicemail	Retrieves voicemail messages.	
5	CONTACTS	Accesses the People screen.	
6	MENU	Accesses the Settings screen.	
7	AC	AC key – for future use – currently used as home key. Returns you to the home (idle) screen from any screen.	
8	Kensington lock	n lock Allows locking the device.	
9	TRANSFER	Transfers a call.	
10	HOLD	Places an active call on hold.	
11	Alphanumerical Keypad	Keys for entering numbers, alphabetical letters and symbols (e.g., colons)	
12	Microphone	Allows talking and listening. The network administrator can disable it if required.	
13	Speaker	Activates the speaker, allowing a hands-free conversation.	
14	Headset	Activates a call using an external headset.	
15	Mute	Mutes a call.	
16 17	▲ VOL ▼ VOL	Increases or decreases the volume of the handset, headset, speaker, ring tone and call progress tones.	

Item #	Label/Name	Description
18	'Back' key	Returns you to the previous screen.

Rear View

The ports located on the rear of the phone are described in the table.



Figure 2-2: Rear View

 Table 2-2:
 Rear View Description

#	Label	Description
1	~	Handset jack, i.e., port RJ-9, to connect the handset.
2	88	RJ-45 port to connect to the Ethernet LAN cable for the LAN connection (uplink - 10/100/1000 Mbps). If you're using Power over Ethernet (PoE), power to the phone is supplied from the Ethernet cable (draws power from either a spare line or a signal line).
3		RJ-45 port to connect the phone to a PC (10/100/1000 Mbps downlink).
4	⊙- <mark>()</mark> ⊕ DC12V	12V DC power jack that connects to the AC power adapter.
5	n	Headset jack, i.e., RJ-9 port that connects to an external headset.

Cabling

See the phone's *Quick Guide* shipped with the device and also available from AudioCodes for detailed information on how to cable the phone.

Mounting the Phone

The phone can be mounted on a:

- Desk (see Desktop Mounting below)
- Wall (see Wall Mounting below)

See the phone's *Quick Guide* shipped with the device and also available from AudioCodes for detailed information on how to mount the phone.

See also <u>here</u> for a clip showing *the principle* of how to mount an AudioCodes IP phone. The principle is the same across all AudioCodes IP phones.

Desktop Mounting

The following instructions show how to mount the phone on a flat surface like a desk.

- > To mount the phone on a flat surface like a desk:
- 1. Off-hook the handset (if on-hook) and place the phone upside down, i.e., base-up, on your desktop.
- 2. On the phone's stand, identify outer notches.
- 3. On the phone's base, identify outer rails.
- 4. Invert the stand and align its outer notches with the base's outer rails.
- 5. Insert the stand's outer notches into the base's outer rails and slide the notches along the rails until the stand click-locks into the base.
- 6. Revert the phone and stand it on the desktop.



Wall Mounting

The following documentation shows how to mount the phone on a wall.



If the phone model you have has an Expansion Module attached, wall mounting isn't supported.

To mount the phone on a wall:

- 1. Attach the stand of the phone for the purpose of a wall mounting:
 - a. Detach the base.



- **b.** Attach it again as you did for a desktop mounting (see Desktop Mounting on the previous page) only now make sure that it's flatly aligned to lie flush against the wall, i.e., slide the inner rails of the phone stand onto the phone base's inner notches.
- 2. Connect the AC power adapter, LAN and PC/laptop cords.
- **3.** In the wall, drill two horizontal holes at a distance of 4 7/8 inches (123.8 mm) from one another, in line with the template.
- 4. Insert two masonry anchors into the holes if necessary.
- 5. Thread two screws (not supplied) into the two masonary anchors; ensure that the heads extend sufficiently (about 3/16 inch or 5 mm from the wall) for the phone stand's keyhole slots to hang on.
- 6. Hang the phone stand's keyhole slots on these screws.

Installing the Expansion Module (Sidecar)

See <u>here</u> for a tutorial | demo on how to install the phone's Expansion Module (sidecar).

The video tutorial | demo relates to the C450HD phone but the C455HD phone installation is identical.

Before Using AudioCodes Devices

AudioCodes recommends frequently cleaning devices' screens especially screens on devices in common use areas such as conference rooms and lobbies.

To clean a device's screen:

- **1.** Disconnect all cables.
- 2. Spray onto a clean, dry, microfiber duster a medicinal isopropyl alcohol and water solution of 70:30. Don't oversaturate the duster. If it's wet, squeeze it out.
- **3.** Lightly wipe the screen of the device.
- 4. Wait for the screen to dry before reconnecting cables.

3 Starting up

Here's how to start up the phone.

➤ To start up:

1. Connect the phone to the network (or reset it); the language selection screen is displayed by default.

, Settings	÷
nglish (United States) ain language	
eutsch	Deutsc
nglish	English
spañol	Españo
rançais	França
aliano	Italianc

2. Select the language of your choice and then configure device settings to suit specific requirements.



It will be necessary to repeat this only if the phone is restored to default settings.

Configuring Device Settings

The section familiarizes you with the phone's settings. Phones are delivered to customers configured with their default settings. Customers can customize these settings to suit specific personal or enterprise requirements.

To access device settings:

1. Press the MENU key on the phone.

Settings	
User	
Ф	Display
•)	Sound Ring volume at 71%
C	Date & time GMT+02:00 Central Africa Time
•	Wi-Fi

2. View the settings under 'User'. Select a setting to open it. Use the table following as reference. [To view settings related to the network administrator, scroll down and open 'Device administration'].

Setting	Description	
	User	
Display	User Opens the 'Display' screen [Brightness level].	e
	CANCEL	
	Screen saver	

Table 3-1: Device Settings

Setting	Description
	 ✓ Settings On Clock Colors ✓
	 Font size Settings Sample text Day Construction of the source of the source
Sound	Allows you to customize phone volume for a friendlier user experience. Ring volume at n%
Date & time	Date and time are automatically retrieved from the deployed Network Time Protocol (NTP) server.

Setting	Description
	Date & time Automatic date & time Use network-provided time Automatic time zone Use network-provided time zone Set date August 3, 2020 Set time 3:40 PM Select time zone CMTANDON Central & fries Time Use 24-hour format [Allows you to select the Time format] Also supported is a simplified version of NTP called Simple Network Time Protocol (SNTP). Both can be used to synchronize device clocks. SNTP is typically used if full implementation of NTP is not required.
Wi-Fi	The phone can connect to an Access Point via Wi-Fi. See the phone's <i>Quick Guide</i> for detailed information on setting up Wi-Fi. See also Configuring Wi-Fi on page 34 in this document for information about configuring the feature.
Accessibility	Allows making the screen reader-friendlier. See also Enabling Google Talkback on page 50.
Bluetooth	Hands free profile where the phone is able to connect to Bluetooth headset or speaker. See the phone's <i>Quick Guide</i> for detailed information on setting up Bluetooth.
Power Saving	Allows users to contribute to power saving in the enterprise. <pre> Power saving Enable power saving off Start time 9:00 End time 17:00 Ind time Trans </pre> Enable power saving Start time [The device consumes minimal energy before the user arrives at the office]

Setting	Description
	End time [The device consumes minimal energy after the user leaves the office]
Debugging	Enables users to reboot the device.
Security	Helps secure the enterprise telephony network against breaches. Image: Security Device security Screen lock None Encryption Encrypt phone Passwords Make passwords visible Screen lock [The phone automatically locks after a configured period to secure it against unwanted use. If left unattended for 10 minutes (default), it automatically locks and is inaccessible to anyone who doesn't know its lock code.] Make passwords available
Touch screen	Allows users to disable the phone's touch screen.
Languages & input	Allows users to customize inputting to suit personal requirements.

Setting	Description
	Languages & input Languages English (United States) Keyboard and input methods Physical keyboard
About [Android 7.1.2]	Enables users to determine device information. Image: Phone status Status Model C450HD Android version 7.1.2 Android security patch level July 1, 2017 Version info
	To determine the device's IP address, select the 'Status' option. ✓ settings IP address 10.22.13.28 fe80:290.8fff;fe99:9abe Wi-Fi MAC address 80:5e:4f:7a:32:78 MAC address 00:90:8F:99:9A:BE Bluetooth address 80:5e:4f:7a:59:88 Serial number To get information about the version, select 'Version info'.

Setting	Description
	← Settings
	Firmware version TEAMS_1.5.165
	Firmware code 1005165
	DSP version 720.67
	Bootloader 1.1.18
	Microsoft Teams version
	← Settings
	Microsoft Teams version Version name: 1449/1.0.94.2020071702 Version code: 2020564020
	Company Portal version Version name: 5.0.4867.0 Version code: 4265286
	Admin Agent version Version name: 1.0.0.202006290446.product Version code: 216
	Partner Agent version Version name: 1.0.48 Version code: 71
	To get information about the Android version, select 'Android version'.
	Device administration
Device	Allows the user to log in as Administrator, necessary for some of the
administration	debugging options. It is password protected. Default password: 1234
	(or 1111 in early versions). After logging in as an Administrator, the
user can log out change password.	
	Device administration
	Login
	Select Login and then in the Login screen that opens, select the 'Enter
	password' field and use the virtual keyboard to enter the password (1234 or 1111). Note that the virtual keyboard pops up for all
	'Settings' fields to allow inputting characters and / or numbers. Two
	virtual keyboard types can be displayed: Numeric or QWERTY.

Setting	Description
	Email, phone or username
	1 2 3 4 5 6 7 8 9 0 @ # \$ % & - + () =\< * " ' : ; ! ? ABC , _ / .
	Change password Enter your old password I Enter your new password Confirm your new password q 1 w 2 e 3 r 4 t 5 y 6 u 7 i 8 0 9 p 0
	$q^{1} w^{2} e^{3} r^{4} t^{5} y^{6} u^{7} i^{8} o^{9} p^{9}$ a s d f g h j k l $rac{1}{2} x c v b n m$ (2) $rac{1}{2} rac{1}{2} rac{1}$
	The virtual keyboard is also displayed when the network administration needs to enter an IP address to debug, or when they need to enter their PIN lock for the security tab. After logging in, scroll down in the Settings screen to the section 'Device administration'.
	Settings Device administration Device administration
	 ↔ Modify network ⊕ Region preference { } Debugging
Modify network	Enables the Admin user to determine network information and to modify network settings.

Setting	Description
Setting	Description Image: Construction of the state image: Connected image: Connecte
Proxy	only or LLDP only. The phone can be configured with an HTTP Proxy server by an Admin
	user in two ways:
	Manually. The Admin user can use this method to configure HTTP proxy server parameters through the Teams application:
	a. Log in as Administrator and select Modify network.
	b. Select the Proxy option and then configure the proxy host name and port:

Settir	
Settir	סר

Description					
← Settings					
Proxy hostname					
10.13.2.25					
Proxy port					
3128					
Bypass proxy for					
1	2	3	-		
4	5	6	,		
7	8	9	×		
	0		C		

Over DHCP with Option 252. It's recommended that the Admin user uses this method when provisioning multiple phones. Option 252 provides a DHCP client with a URL to use to configure its proxy settings:

Reservation Options	? ×
General Advanced	
Available Options	Description 🔺
120 UCSipServer	Sip Server F
□ 121 Classless Static Routes	Destination,
160 Audiocodes 160 Option	Audiocodes
✓ 252 wpad-url	▼
•	<u> </u>
r" Data entry	
String value:	
http://10.37.4.99/proxy.pac	-
,	
ОК	Cancel Apply
proxy setting is provided in a Proxy	Auto-Configuration
that contains a set of rules coded in	JavaScript which all
browser to determine whether to s	·
Internet or to be sent via a proxy se	rver. PAC files contr
phone handles HTTP, HTTPS and FT	P traffic.
nple of a basic PAC file:	

```
function FindProxyForURL(url, host)
```

```
{
```

```
return "PROXY 10.13.2.40:3128";
```
Setting	Description				
	<pre>} If the enterprise features a proxy server that requires user authentication, the network administrator can use the PAC file and DHCP Option 252 to configure it. Alternatively, the administrator can configure it using the following parameters: http_client/fwd_proxy/ip=0.0.0.0 http_client/fwd_proxy/port=8080 http_client/fwd_proxy/username=</pre>				
802.1x Settings	802.1X Authentication is the IEEE Standard for Port-based Network Access Control (PNAC). See <u>https://1.ieee802.org/security/802-1x/</u> for more information. To configure an 802.1X Authentication method: 1. From the 'Modify Network' screen (as an Admin), access the 802.1x Settings screen. 802.1x Settings screen. 802.1x Settings Enable 802.1x EAP method NONE CANCEL SAVE				
	 2. From the 'EAP method' drop-down, select the method: MD5 or TLS (for example). 3. Enter this information: Identity: User ID Password root certificate (not required for every method) device certificate (not required for every method) 4. Select the Save softkey The 802.1x settings are not only available via the phone screen, they're also supported in the device Configuration File, enabling network administrator's to perform pre-staging configuration for 				

Setting	Description				
	 802.1x. The 802.1x settings available in the Configuration File are: Enable/Disable EAP method Identity Password 				
VLAN Settings	Select the menu option VLAN Settings.				
	 VLAN Discovery mode Disabled Manual configuration Automatic configuration (CDP) Automatic configuration (LLDP) Automatic configuration (CDP+LLDP) CANCEL OK Cisco Discovery Protocol (CDP) is a Cisco proprietary Data Link Layer protocol Link Layer Discovery Protocol (LLDP) is a standard, layer two discovery protocol Select the mode you require and then select OK. If you select Manual configuration, this screen opens: 				

Setting	Description
	 ✓ Settings VLAN Discovery mode Manual configuaration VLAN ID -1 VLAN Priority 1 Changes will only be applied after both VLAN ID and VLAN Priority have been set
	Select VLAN Interval VLAN Interval Enter VLAN Interval (range 1 to 3600) CANCEL OK
	The 'VLAN interval' refers to CDP/LLDP advertisements' periodic interval. Default: 30 seconds. You can increase or decrease the intervals between the CDP/LLDP packets that are sent, based on network traffic and topology.
Region preference	Select the menu option Region preference. Regional Tone Settings United States United States This option allows you to define the country in which the phone is located. The setting determines which regional tone the phone will use. Call Progress Tones (CPTs) are country-specific; the behavior and parameters of analog telephones lines vary from country to country.

Setting	Description				
	Select Regional Tone Settings and select the country in which the phone is located.				
	Regional Tones				
	United States				
	O Canada				
	🔿 Japan				
	O Great Britain				
	O Australia				
	O CEPT				
	CANCEL				
Debugging	Allows the Admin user to perform debugging for troubleshooting purposes. Available after logging in as Admin.				
	Debugging				
	Log settings				
	Remote Logging				
	Diagnostic Data				
	Reset configuration				
	Restart Teams app				
	Company portal login				
	Debug Recording				
	Switch to Teams Compatible				
	Factory data reset				
	ADB				
	Screen Capture				
	Log settings				
	Remote Logging (see under Remote Logging (Syslog) on page 110 for more information)				
	Diagnostic Data (see under Getting Diagnostics on page 111 for more information)				
	Reset configuration				
	Restart Teams app				
	Company portal login				
	Debug Recording (for Media/DSP debugging) (see under Remote Logging (Syslog) on page 110 for more information)				

Setting	Description					
	Factory data reset (the equivalent of restore to defaults; including logout and device reboot)					
	ADB (Android Debug Bridge command-line tool used to debug the Teamsapp); the setting is disabled by default. The device does not allow access to ADB.					
	Screen Capture. By default, this setting is enabled. If it's disabled, the phone won't allow its screens to be captured.					

Configuring Wi-Fi

[Applies to devices whose PN indicates **DBW**] Network administrators can configure Wi-Fi parameters for the phone. The parameters are concealed from the user's view.

Additionally, network administrators can configure Wi-Fi settings via the Configuration File. The Wi-Fi settings application on the device and the Configuration Database are synchronized.

Use the following table as reference.

Parameter	Description	Values
network/wifi_enabled	Enables/disables the Wi-Fi feature.	0 (disable, default) 1 (enable)
network/wifi_pc_bridge	Enables network connectivity for the PC behind the phone; for debugging purposes.	0 (disable, default) 1 (enable)
network/wifi_ipv4_method	Defines the Dynamic or Static IP address for Wi-Fi.	DHCP (default) STATIC
network/wifi_channel_mode	Enables the Wi-Fi channel mode: 2.4G only 5G only 2.4G+5G	5G_2_4G (default) 2_4G_ ONLY 5G_ONLY

Table 3-2: Wi-Fi Parameters

The following table shows the parameters per index. The phone can currently store 16 connected SSIDs.

Parameter	Description	Values
network/wifi/[0- 15]/ssid	Saves the Access Point's SSID.	-
network/wifi/[0- 15]/password	Saves the password for some authentication methods which need it, e.g., WPAPERSONAL, WPA2PERSONAL	-
network/wifi/[0- 15]/security	Saves the Access Point's authentication method: WPAPERSONAL, WPA2PERSONAL, WPAENTERPRISE, WPA2ENTERPRISE	-
network/wifi/[0- 15]/auto_reconnect	Configure this parameter to reconnect this SSID automatically.	1 (default, enable) 0 (disable)
network/wifi/[0- 15]/identity	Saves the identity for some authentication methods that need it, e.g., WPAPERSONAL, WPA2PERSONAL	-
network/wifi/[0- 15]/anonymous_ identity	Saves the anonymous identity for some authentication methods that need it, e.g., WPAENTERPRISE, WPA2ENTERPRISE, etc.	-
network/wifi/[0- 15]/phase2_ authentication	Phase 2 authentication for WPAENTERPRISE, WPA2ENTERPRISE. The phone supports PAP, MSCHAP, MSCHAPV2, CHAP, MD5, GTC	-
network/wifi/[0- 15]/pin_code	Defines the PIN code for the WPS PIN code authentication method.	String of up to 64 characters
network/wifi/[0- 15]/wps_method	Defines the WPS method. The phone supports PIN and push button.	None ALL (default PIN AUTH PBC

Table 3-3:	Wi-Fi	Parameters	per	Index
		i arameters	PCI	mach

Restoring the Phone to Default Settings

Users can restore the device to factory default settings at any time. The feature can be used if a user forgets their Admin password, for example. Two kinds of restore are available:

- Performing a Hard Restore below
- Performing a Soft Restore below

Performing a Hard Restore

You can either:

- perform a hard restore while the phone is up and running (see below)
- restore the phone's settings to their defaults when the phone is not connected (see below)
- > To perform a hard restore while the phone is up and running:
- 1. Long-press the HOLD key on the phone (more than 15 seconds); the screen shown below is displayed and the device performs a restore to default factory settings.

Factory	Factory data reset		
0	Restarting		

After the restore, the phone automatically reboots and goes through the Wizard and signin process.

- 2. Select OK; the sign-in screen is displayed (see Signing In on page 39 for more information).
- To restore the phone's settings to their defaults when the phone is not connected:
- Press the OK + MENU keys simultaneously and keeping them pressed, unplug the power cable.
- Plug the power cable back into the phone continuing to press the OK + MENU keys for +-5 seconds.
- Release the OK + MENU keys; the phone' settings are restored to their defaults.

Performing a Soft Restore

Users must log in as Administrator (**Settings** > **Device Administration** > **Login** and then use the virtual keyboard to enter the default password of **1234**) in order to perform a soft restore. The soft restore is then performed in the Debugging screen.

To perform a soft restore:

 After logging in as Administrator, you'll have Admin privileges to configure settings. Under Device Admin Settings, select the **Debugging** option.

E Debugging
Diagnostic Data
Reset configuration
Restart Teams app
Company portal login
Debug Recording
Switch to Teams Compatible
Factory data reset

 Select the Factory data reset option; the device performs a restore to default factory settings.

Recovery Mode

If a phone goes into recovery mode, you can boot it using its hard keys as shown in Performing a Hard Restore on the previous page.

Locking and Unlocking the Phone

As a security precaution, the phone can be locked and unlocked. The feature includes:

- Unlock (see Unlock below)
- Automatic lock (Automatic Lock below)

Automatic Lock

Users can lock their phones as a security precaution. Configure the phone with any of the lock options before attempting to lock it. If an option isn't configured, the action won't function.

> To lock the phone:

Press the back key on the phone for at least three seconds for the device to automatically lock.

Unlock

- > To unlock the phone:
- 1. When the screen shown in the figure below is displayed, start typing your unlock PIN code.



2. View the digits displayed as you type:

	••3	⊠
1	2	3
4	5	6
7	8	9 WXYZ
	Ō	~
	EMERGENCY	

3. When the phone detects the unlock code, it unlocks.

	Calls 972765312624			E	Q
Recent					
0	onlineauto18 & Duration: 3sec	Yesterday 2:15 PM	0		
A	MoriyaA & Duration: 8sec	2/10	onlineauto18		
A,	MoriyaA Tissed call	2/10	8		
A,	MoriyaA & Duration: 0sec	2/10	Email onlineauto18@audiocodesipp		K,
	C alls	Cale			

4 Teams Application

The following describes functions related to the phone's Microsoft Teams application.

Signing In

Using TeamsIPPhonePolicy, network administrators can create the following users who can then sign in to the phone:

- UserSignin: All features are available, i.e., calls, meetings and voicemail
- MeetingSignIn: Only meetings are available
- Common Area Phone (CAP) users who can sign in to the device with a CAP account (as a CAP user) using TeamsIPPhonePolicy as follows:
 - CAP SignIn (SearchOnCommonAreaPhoneMode=Enabled): The user has calling and searching capability
 - CAP SignIn (SearchOnCommonAreaPhoneMode=Disabled): The user has calling capability

Before using the phone (after setting it up), you need to sign in for security purposes. You can sign-in with user credentials locally on your IP phone, or remotely with your PC / smart phone.

'Modern Authentication' is also supported.

Before signing in, the network administrator must make sure the phone gets the local time, using either:

- DHCP Option 42 (NTP). If DHCP Option 42 (NTP) is opted for, the network administrator must specify the server providing NTP for the network.
- **time.android.com**. NTP server option for Android phones.
- time.windows.com. The phones' default NTP server is sometimes not configured in DHCP Option 42. If not, the phones will attempt the Google NTP server. If DHCP Option 42 is not configured and the Google NTP server is blocked (for example), the phones will use this server and if it's unavailable, the server time.nist.gov, described next.
- time.nist.gov. The phones' default NTP server is sometimes not configured in DHCP Option 42. If not, the phones will attempt the Google NTP server. If DHCP Option 42 is not configured and the Google NTP server is blocked (for example), the phones will use this server (time.nist.gov) if the server time.windows.com described previously is unavailable.

In most regions, Daylight Saving Time changes the regional time twice a year. DST Validation allows maintaining accurate time. Two options for phones to get the correct time are:

- [Recommended] If the DHCP server offers Timezone Options (100/101), the phone will set the obtained time zone and display the correct time on the screen; the time will be calculated based on an embedded Time Zone database, factoring in DST.
- If the DHCP server offers Time Offset Option only (2), the phone will assign the obtained time offset to the first matched region in the list but there is a good chance it won't reflect

the actual geographical location, therefore the displayed time might be incorrect in some cases. For example, if the given time offset is GMT-5 and the phone is located in Mexico, the phone will get the time (and the DST setting) from central time and not from Mexico because in GMT-5 there is also Central Daylight Time.

If the internet connectivity check fails, a 'No Internet Access' warning pops up on the phone screen.



Figure 4-1: Internet Connectivity Check - No Internet Access

This can point to a problem that is preventing the phone from fully functioning in a Teams environment. The user can ignore the message if the Teams application is fully functioning, or can report a problem if the Teams application is not fully functioning.

► To sign in:

1. Connect the device to the network; this screen is then displayed:



 Open your browser and point it to https://microsoft.com/devicelogin as instructed in the preceding screen.



3. Enter the code and then click Next.

M	Microsoft				
Pick	Pick an account				
Broker	signing in to Microsoft Authentica on another device located in Israe ose this page.				
à	alanr@audiocodes.com	:			
+	Use another account				
		Back			

4. Click the account.

Microsoft	
← alanr@audiocodes.com	
Enter password	
Password	
Forgot my password	
	Sign in

5. Enter your password (it's the same password as the Windows password on your PC) and then click **Sign in**.



- 6. Close the window shown in the preceding figure.
- 7. Observe that the phone returns to the initial code screen. In that screen, select Sign in on this device.

	Sign in to make an emergency call.	
~		3
	Welcome to Microsoft Teams! A happier place for teams to work together.	
	Email, phone or username	
	Sign in	
	Get help with signing in	

- 8. Select the 'Email, phone or username' field; a virtual keyboard pops up. Enter one of them and then choose **Sign in**. The 'home' screen opens.
 - If you opt to **Sign in from another device**, complete authentication from your PC or smart phone. This is recommended if you're using Multi Factor Authentication (MFA).

Figure 4-2: Sign-in from PC / Smart Phone

Company Portal		
	Microsoft Teams	
	Microsoft Sign in Go to https://microsoft.com/devicetogin on your work computer and enter the code below to sign in. BHK3ZUQRH	
	Back	

 In the browser on your PC or smart phone, enter the URL indicated in the preceding screen and then in the phone's Web interface that opens, perform signin (as noted previously, this option is recommended if using MFA). LLDP-MED (Link Layer Discovery Protocol – Media Endpoint Discovery) is a standard link layer protocol used by network devices to advertise their identity, capabilities, and neighbors on a local area network based on IEEE802 technology, principally wired Ethernet. Teams devices connected to the network via Ethernet will dynamically update location information for emergency calling services based on changes to network attributes including chassis ID and port ID.

Multi-Cloud Sign-in

For authentication into specialized clouds, users can choose the 'Settings' gear icon on the signin page to see the options that are applicable to their tenant.

×	Settings
	Provision phone
\odot	Cloud
\$	Device settings
Mon Feb 0	12:09 PM Sign in to make an emergency call.
	Sign in to make an emergency call.
	Sign in to make an emergency call.
	Sign in to make an emergency call. Ioud Public
	Sign in to make an emergency call. Noud Public
	Sign in to make an emergency call. Noud Public GCC High

Remote Provisioning and Sign-in from Teams Admin Center

Network administrators can remotely provision and sign in to a Teams device. To provision a device remotely, the admin needs to upload the MAC IDs of the devices being provisioned and create a verification code. The entire process can be completed remotely from the Teams admin center.

Step 1: Add a device MAC address

Provision the device by imprinting a MAC address on it.

- 1. Sign in to the Teams admin center.
- 2. Expand Devices.
- 3. Select Provision new device from the Actions tab.

		=		
ŝ	Dashboard		IP phones	tions ~
8 <u>8</u> 3	Teams	~	You can control and manage all of your Teams certified IP phones across your organization. You can create and upload	
4	Devices	^	configuration profiles for each type of phone you have. make changes to their settings, and apply software updates. Learn 🔗 All device tags	
	Teams Rooms		Devices summary	
	Collaboration bars			
	Teams displays		12 11 12 Devices Need update Offine	
۲	Locations	~		
රී	Users		_	
Ē	Meetings	~	All phones User phones Common area phones Confirence phones Configuration profiles	
Ę	Messaging policies			
œ	Teams apps	~	🖉 Edit 🖉 Assign configuration 🧷 Manage tags 🔿 Update 🕆 Upgrade 🔿 Restart X Remove Showing 12 devices 🔍 Search by device name 🛛 🛈	70
T	Voice	~	✓ Display name Username Decice name Health status ○ Manufacturer Model Action ₱ a	ddress
	Policy packages		Megan Bowen Megan8@M365x021987.0 poly-trioc60 64167fd55b9a Offline Poly TrioC60 11 Update available 10.	172.208.254
4 1	Analytics & reports	~	Nestor Wilke NestorW@M355021987 tenovo-lenovod-18781y 4 Offline LENOVO LenovoCD-18781Y - N//	A

In the 'Provision new devices' window, you can either add the MAC address manually or upload a file.

Manually add a device MAC address

- 1. From the Awaiting Activation tab, select Add MAC ID.
- 2. Enter the MAC ID.
- 3. Enter a location, which helps technicians identify where to install the devices.
- 4. Select Apply when finished.

Upload a file to add a device MAC address

- 1. From the Awaiting Activation tab, select Upload MAC IDs.
- 2. Download the file template.
- 3. Enter the MAC ID and location, and then save the file.
- 4. Select the file, and then select Upload.

Step 2: Generate a verification code

You need to generate a verification code for the devices. The verification code is generated in bulk or at the device level and is valid for 24 hours.

From the **Awaiting Activation** tab, select an existing MAC ID. A password is created for the MAC address and is shown in the **Verification Code** column.

	🔀 Contoso Electro	onics	Microsoft Teams admin center		۲	?	(
		≡						
ଜ	Dashboard		Provision new devices					
863	Teams	~	Your new devices will be added to the main list when technicians ph	To urnee devices will be added to the main list when technicians physically activate them and deploy on site. To help them do				
۵	Devices	^	this follow the steps below					
	Teams Rooms		Provisioning Summary	New device provisioning steps				
	Collaboration bars		1 0 0	 Manually add or upload a fle with new device MAC IDs Generate a one-time password (DTP) 				
	Teams displays		Added MAC IDs Expired OTP's Awaiting sign in	Biport the table with valid OTPs for your technicians				
٢	Locations	\sim						
සී			Awating Activation Awating sign in					
Ē	Meetings	~						
E	Messaging policies		+ Add MAC ID 🚯 Upload MAC IDs 🔍 Generate Verifica	tion Code 🖉 Edit 📋 Delete 1 item selected	Q, Search by MAC ID	0 0	P (
₿	Teams apps	\sim						
6		\sim	V MAC ID Location					
1	Policy packages		✓ 80-5e-c0-3b-be-fd Redmo	nd 876713				

You'll need to provide the list of MAC IDs and verification codes to the field technicians. You can export the detail directly in a file and share the file with the technician who is doing the actual installation work.

Step 3: Provisioning on the device

Once the device is powered up and connected to the network, the technician provisions the device by choosing the 'Settings' gear on the top right of the new 'Sign in' page and selecting **Provision phone**.

×	Settings
	Provision phone
\odot	Cloud
ŝ	Device settings

The technician is then expected to enter the device-specific Verification code that was provided in the Teams admin center on the phone's user interface. Once the device is provisioned successfully, the tenant name will be available on the sign in page.

Mon Feb 01	11:35 AM		
	Sign in to make an emergency call.		
	Contoso	\$	
\$	Step 1 On your computer or mobile, go to https://microsoft.com/devicelogin		
\$	Step 2 Enter the code below to sign in.		
	RCYVBF4XQ		
	Sign in on this device		

Step 4: Sign in remotely

The provisioned device appears in the Awaiting sign in tab. Initiate the remote sign-in process by selecting the individual device.

- 1. Select a device from the Awaiting sign in tab.
- 2. Follow the instructions in Sign in a user, and then select Close.



The tenant admin is expected to complete authentication on the device from any browser or smartphone.



When the tenant admin is signing in from Teams Admin Center, the user interface on the device is blocked to prevent other actions on the phone.



Getting Acquainted with the Phone Screen

The following gets you acquainted with the phone's user interface. The figure below shows the phone's home screen, aka the phone's idle screen.



The following figure shows the phone's Calls screen.

=	Calls 97239764263			₿ [₽]	Q
			FAVORITES	RECENT	3
	€ Call		nun When you add	speed dial nbers contacts to you i'll see them here	+2
ŀ	forme Calls	Cale		L People	

The following table describes the phone's home screen.

Item	Description
≡	The phone menu. Select it to open the menu shown in the figure following this table.
Calls	Select the tab to open the Calls screen. The screen shown in the figure preceding this table opens.
People	Select the tab to open the People, shown under Using the People Screen on page 59 opens. Allows you to easily connect and collaborate with teammates, colleagues, friends and family. Through this screen, you can see all your contacts and create and manage contact groups to organize your contacts. The screen provides a simple user experience and aligns with the contacts on the Teams desktop client. If a contact has multiple numbers, the phone screen allows the user to select from a drop-down menu the intended contact method.
Calendar	Select to open the Calendar screen, shown under Setting up a Meeting on page 58 opens.
Voicemail	Select the tab to open the Voicemail screen, shown under Accessing Voicemail on page 59 opens.

Table 4-1:	Calls Screen
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The following figure shows the user's presence status screen.



Use this table as reference.

Table 4-2: Menu Item Descriptions

Item	Description	
Presence status	See Changing Presence Status on page 53 for more information.	
Set status message	See Setting Status on page 51 for more information.	

ltem	Description	
Connect a device	See Connecting a Device for more information.	
Hot desk	See Hot Desking on page 52 for more information.	
Settings	See Configuring Teams Application Settings on page 55 for more information.	
Sign Out	See Signing Out on page 60 for more information.	

Enabling Google Talkback

AudioCodes' Native Teams Android devices feature Google TalkBack, an accessibility service that allows blind and low-vision users to interact with their devices by giving them spoken feedback so they can use their devices without looking at the screen.

The feature improves the experience of these users.

> To enable the feature:

- 1. Open the Accessibility screen (Settings > Device settings > Accessibility).
- 2. Select the TalkBack option shown in the preceding figure.
- **3.** Click **OK** to switch the feature on as shown in the preceding figures. Listen to the audio tutorial that begins playing. The tutorial explains how to interact with the device.
 - After TalkBack is switched on, operations are performed by *touching to select* and then *double-touching to activate*.
 - To turn up the volume, touch the + key on the phone and in the volume pop-up shown in the figure below, touch the slider to select it; audio announces what level you're at. Double-touch the slider at the level you want.
 - To switch off TalkBack, re-access the Accessibility screen and then switch the feature off the same way.
- **4.** After the tutorial, from the 'home' screen open (for example) the Calls screen; audio announces what you did; the Calls screen opens.

➤ To interact with the Calls screen:

- In the Calls screen shown in the preceding figure, select the **Recent** tab; audio informs you what you selected.
- 2. Select a listed call as shown in the preceding figure; audio informs you whether the call was outgoing or incoming and to / from whom it was made and the day on which it was made.
- 3. Double-touch the listed call; three icons below it appear.

- **4.** Select the phone icon; audio informs you that you can activate the person's profile. Doubletouch the icon; the person's profile screen opens displaying their name, position, email, hyperlinked work phone number and hyperlinked mobile phone number.
- Select the star icon; audio informs you that you can add to Favorites; double-touch to activate it.

Opting in or out of Call Queues

Call queue agents can opt out of call queues or opt in based on settings available on the Teams phones.

Mon Feb 01 6:56 PM Calls TEST TEST IPPHONE TEST	
Delegated calls	Default
Call vi <u>ews</u>	
Default view	Speed dial
Block calls	
Block calls with no caller ID	•
Blocked numbers	>
Call queues	
Disable a queue to opt out. Your admin may control this setting.	
Test Call Queue2	•

Setting Status

You can set a status message to add more substance to your presence status. For example, a status message such as 'Working from home' adds more substance to the presence status of 'Available'.

> To set presence status:

1. In the home screen, select the user (avatar) picture.



2. Select Set status message.

× Set status message	\checkmark
Set status message	×
	18 /280
Show when people message me	
This will show people your status when they message or @mention you.	
Clear after	Aug 9, 11:59 PM

- **3.** Select the field under 'Set status message' and in the Virtual Keypad that pops up, type in the message you want to show other people, for example, 'Working from home'. The text you type in will replace 'Set status message' in the screen shown in the preceding figure.
- 4. Optionally, switch on 'Show when people message me'. When people message or @mention you, they'll view the status message you set.
- 5. Select 'Clear after' and choose when you want the message to stop displaying. Options are:
 - Never clear
 - 1 hour
 - 4 hours
 - Today
 - This week
 - Custom (set a date and time in the calendar that pops up)

Hot Desking

The hot desk feature allows a user to sign in to a phone that is already signed in to by another user without signing out the original user to whom the phone was assigned for primary use.

Any phone in the enterprise network that is enabled with this feature allows any user in the enterprise to temporarily sign into it, make calls, attend meetings and access their calendar and call log. After finishing using these phone functions, the user can sign out to end their hot desk session; call logs and history will automatically be removed from the device.

> To set up a phone as a shared device for hot desking:

 Select the user's photo or avatar picture, and then from the menu, select the Hot desk option. Alternatively, in the Calls screen (or People screen, Calendar screen or Voicemail screen), select the phone menu and then select Hot desk.

Figure 4-3: Hot desk



2. Touch the field 'Email, phone or username'.



3. Use the Virtual Keyboard to type in your email, phone or user name and then select **Done**; the phone is enabled for hot desk.

Changing Presence Status

You can assign a presence status to control whether you want people to contact you or not. By default, your status is based on your Microsoft Teams server.



 n minutes after this (also configured in the Teams server by your administrator), presence status automatically changes to 'Away'; all calls are then automatically forwarded to the Response Group Service (RGS) if it is configured.

To change presence status:

 In the home screen, select the user (avatar) picture or in the Calls and Calendar screen, select



2. Select the current status displayed and from the drop-down list of statuses then displayed, select the status to change to. Use this table as reference.

lcon	Presence Status	Description
	Available	You're online and available for other contacts to call.
	Busy	You're busy and don't want to be interrupted.
•	Do not disturb	You don't want to be disturbed. Stops the phone from ringing when others call you. If DnD is activated, callers hear a tone indicating that your phone is busy; the call is blocked and your phone's screen indicates 'Missed Calls'.
0	Be Right Back	You'll be away briefly and you'll return shortly.
	Away	You want to hide your status and appear to others you're currently away.
⊗	Offline	You're going on vacation (for example).
¢	Reset status	Resets the status.

Enabling Voicemail Support on CAP Users

The instructions here show how to enable voicemail on common area phone users. Voicemail can be enabled from the phone or from the TAC. The **Advanced calling** setting must be enabled.

- > To enable voicemail from the phone:
- **1.** In the phone screen, select the avatar.
- 2. Navigate to Device Settings > Device administration.
- 3. Enter the password 1234.
- 4. Access 'Teams Admin Settings' and select Calling.
- 5. Enable Advanced calling.
- 6. Restart the Teams app as prompted.

> To enable voicemail from the TAC:

1. Under 'Teams Devices' in the Microsoft Teams admin center, select Phones.

2. Go to **Configuration Profiles**; in the profiles there is an option under 'Calling settings' to enable **Advanced calling**.

Microsoft Teams admin center	✓ Search - Preview]		C 1	ø		
) Item was created.								
Description								
General							\sim	
Device lock		Off						
Language		English (United State	25)			\sim		
Timezone		(UTC-12:00) Internat	ional Date Line West			~		
Date format		DD/MM/YYYY				\sim		
Time format		12 Hours (AM/PM)				\sim		
Calling settings							^	
Advanced calling ()		On On						
		This setting may not settin	ot be applicable if the device isn't upd	ated.				

Configuring Teams Application Settings

The following describes the Teams application's settings. In the home screen, select the user picture / avatar. Alternatively, in the Calls screen (or People screen, Calendar screen or Voicemail screen), select the phone menu and then the **Settings** option.

$\left \leftarrow \right $	Settings		
General			
S	Dark theme		
lh.	Data and storage		
දී	Manage delegates		
Audio	pCodes Ltd		
0	Profile		
ß	Calling		
\leftarrow	Settings		
	Settings DCodes Ltd		
Audio	oCodes Ltd		
Audio	Profile		
Audio	Profile Calling	••	
Audio	Profile Calling Home screen	••	

Use this table as reference:

Item	Description
Dark Theme	Dark Theme can be enabled to suit user preference. To enable Dark Theme:
	 Drag the 'Dark Theme' setting slider to the 'on' position; the fol- lowing prompt is displayed:
	You'll need to restart the app to switch themes.
	 Choose Restart and then verify after the Teams application restarts that all screens (Teams application and Device Settings) are dark themed:
	Meetings 972765310180
	Calls Meetings Voicemail Settings
	 Touch screen Languages & input English (United States)
	About Android 7.1.2 Device administration
	Device administration
Profile	Opens the user's email address and photo / avatar picture.
Calling	Opens the Calls screen.

Table 4-4:	Idle Screen	Description
------------	-------------	-------------

Item	Description		
	 Calls Incoming calls Call forwarding Also ring Off If unanswered Voicemail Change voicemail greetings Voicemail voicemail greetings Voicemail voicemail greetings Voicemail set on the calling app with audio playback and transcript Incoming Calls Call forwarding. Enables automatically redirecting an incoming call to another destination. Forward to. Only displayed if the previous setting is enabled. Defines the destination to which to forward incoming calls. Also ring. Only displayed if 'Call forwarding' is disabled. Select either Off, Contact or number, or Call group. If unanswered. Only displayed if 'Call forwarding' is disabled. Defines the destination to which to forward unanswered incoming calls. Select either Off, Voicemail, Contact or number, or Call group. Caller ID Hide your phone number when dialing people who are outside of Microsoft Teams Block calls with no caller ID. Enables blocking calls that do not have a Caller ID.		
Home screen	Default: On (enabled). Slide left to switch off (disable) and block the home screen from view; the Calendar screen takes its place.		
Notifications	Default: On (enabled). Allows notifications to be displayed. Slide left to switch off (disable); notifications will not be displayed.		
Report an issue	Opens the Send Feedback screen.		
About	Opens the About screen.		

Item	Description	
	\leftarrow About	
	Microsoft Teams	
	Version: 1449/1.0.94.2018121201 Calling Version: 2018.45.01.13 Microsoft Corporation Copyright ©2018	
	Privacy & Cookies Terms of Use	
Sign out	Lets you sign out of the phone application as one user and optionally sign in again as another user. See Signing Out on page 60 for detailed information.	
Device Settings	Opens the [Device] Settings screen. See Configuring Device Settings on page 20 for detailed information.	

Setting up a Meeting

From the phone's home screen, select Calendar.



You can join calendered meetings and / or you can select
to add a new event to the calendar.

Using the People Screen

The People screen allows users to easily connect and collaborate with teammates, colleagues, friends and family. Through the screen, users can see all their contacts and create and manage contact groups to organize their contacts. The screen provides a simple user experience and aligns with the contacts on the Teams desktop client. In addition to accessing the People screen from the menu, the screen can also be accessed from the hard CONTACTS button on the phone.

If a user creates a contact within Microsoft Outlook, their information appears under the People app on the phone screen. Contacts in Microsoft Outlook are available in read-only mode. While only phone numbers currently appear, users can search on the phone for contacts and easily call the people they may email or meet with, using Outlook.

	5.547 PM People	م	← Add from directory	
			Add	
•	Adele Vance Retail Manager	e	Supportion MAD Administrator	
8	Alex Wilber Marketing Assistant	Marketing Assistant Marketing	Restor Wilke	
0	Angel Garcia	CF %	Cw Cameron White	
9	Antonio Bermejo	Email AlexW@M365x021987.0nMicrosoft.com	Selesperson	
0	Aubury Smith	Work phone +1 858 555 0110	Pertal Manager Gm Genart Moller	
	6 E		Manager	-

All Contacts	
Speed dial	
Other contacts	Retail Manager
Favorites	Retail
Tagged	C+ %
Sales	Email AdeleVijiM365x021987.0nMicrosoft.com
Bharat Mirchandani	Work phone +1.425.555.0109
Colo	E E Calendar Voicemail Propie

Accessing Voicemail

From the phone's home screen, select the Voicemail tab.

			9	7239764263
	1:50 AM		Calls	People
INIO	n, 24 Aug		Calendar	Voicemail
÷	Voicemail 972765312622			
AF	Alexander Farbman a 3sec	3/9		
• AF	Alexander Farbman	3/8		•
D	SakuraiAuto1 00:03	3/8 1x	SakuraiA &	utol
	⊴× & 📰 🏛 - 59	-	Email	
• AF	Alexander Farbman 3min 40sec	3/8	SakuraiAuto1@audiocod .onmicrosoft.com	esipprnd

Using Audio Devices

Use one of the following audio devices on the phone for speaking and listening:

- **Handset**: To make a call or answer a call, lift the handset off the cradle.
- Speaker (hands-free mode)
 - To activate it, press the speaker key during a call or when making a call.
 - To deactivate it, press the speaker key again.
- Headset (hands-free mode). When talking on the phone, you can relay audio to a connected headset.
 - To enable it, press the headset key.
 - To disable it, press it again.

You can easily change audio device during a call.

- To change from speaker/headset to handset: Activate speaker/headset and pick up the handset; the speaker/headset is automatically disabled.
- To change from handset to speaker/headset: Off-hook the handset and press the speaker/headset key to activate the speaker/headset. Return the handset to the cradle; the speaker/headset remains activated.

Transferring Calls and Meetings across Devices

If a user joins a meeting on their PC, they'll view a prompt suggesting adding their Teams device to split the audio and video, or transferring completely.



The feature enables the user to move away from their PC while seamlessly staying connected. The phone recognizes the user is in a call on another device and prompts them to transfer or add, letting them start their call from elsewhere and transfer to their desk phone.

Signing Out

You can optionally sign out of the phone application and sign in as another user.

➤ To sign out:

1. Under Settings, navigate to and select the Sign out option.

Alternatively, in the Calls screen (or People screen, Calendar screen or Voicemail screen), select the phone menu, select the **Settings** option.

\leftarrow	Settings	
S	Calling	
ŵ	Home screen	
Ũ	Notifications	
⚠	Report an issue	
Dji	About	
G→	Sign out	
(j.	Device settings	

2. After selecting the Sign out option, you're prompted 'Are you sure you want to sign out? Select OK; you're signed out and returned to the Sign in screen.

Company Portal		
	Microsoft Teams	
	Microsoft Sign in	
	Email or phone Can't access your account?	
	Sign in from another device	
	Next	

Network administrators can alternatively sign out from devices using Microsoft Teams admin center (TAC). Network administrators can also remotely sign in and provision devices from Microsoft's TAC.

=	IP phones \ audiocodes-cd35hd unavailable				
Dashboard Teams v					 Manage tags Actions
Dences ^ P phones SIP dences ¹⁰ Reams Acoms Collaboration bars Teams displays	John olitier AU	varih soluti Hostify Ories pro- 	t deel = ter = t deeler	7-DRFACTNETY 0 Meetings 27 Celt	Remove device
Teams panets Locations ~ Users	Health Details Activity History				
Meetings ~	Software health				
Messaging policies	- Software type Current ve	nion Health status			
	Teams Admin Agent 1.0.0.202	106130738.product Up to date			
	Firmulane TEAVG_1	54.390 Up to date			
Policy packages Analytics & reports	Company Portal App 5/05211	0 Up to date			
Org-wide settings	OEM Agent App 1.0.90	Up to date			
Planning ~	Teams App 1440/1.0	94.2021061703 Up to date			

5 Performing Teams Call Operations

The following documentation shows how to perform basic operations with the phone.

Making a Call

Calls can be made in multiple ways, for example, you can press the digit keys on the phone's dial pad to enter the phone number or URL.

Alternatively, select a call listed in the Calls screen, and then touch &.

Touching

in the Calls screen allows you to make a call by entering the name of a contact.

\leftarrow	м	lake a	a call															E	,
To:	Sea	rch fo	r peop	ole															
q	1	W	2	е	3	r	4	t	5	у	6	u	7	i	8	0	9	р	0
	а		S		d		f		g		h		j		k		Т		
4			z		х		С		V		b		n		m			×	
?1	123		,																

You need to touch the 'To: Search for people' field to launch the soft keyboard.
If you decide to nonetheless dial a destination number rather than the name of a contact, touch **?123** in the lower left corner of the screen.

Touching & located in the upper right corner of the screen shown in the preceding figure allows you to park a call. For more information about parking calls, see Parking a Call on page 66.

After dialing a destination number, the phone displays the Calling screen while playing a ringback tone.

To toggle between mute and unmute

Touch . Touch it again to revert.

You can mute the microphone of the handset, headset, or speaker during a call so that the other party cannot hear you. While the call is muted you can still hear the other party. Muting calls can also be used during conference calls.

To toggle between device and speaker

Touch

> To end a call before it's answered at the other end

Touch

- ► To dial a URL:
- 1. Press the speaker key or lift the handset and then touch the 'Place call' field.
- 2. Enter a URL address. To delete (from right to left), touch the clear key.

Redialing

You can redial a number you previously dialled.

> To redial:

Press the REDIAL hard key on the phone; the first call listed in the Calls screen is redialled.

Dialing a Missed Call

The phone logs all missed calls. The screen in idle state displays the number of missed calls adjacent to the Calls softkey.

> To dial a missed call:

- Select the Calls softkey and then in the Calls screen, navigate to the missed call to dial if there is more than one listed.
- Select & adjacent to the missed call.

Select to Dial

All phone numbers that are part of meeting invites or user contact cards can be dialed out directly by selecting them via the phone screen.

Making an Emergency Call

The phone features an emergency call service. The idle lock screen displays an Emergency key.



> To dial the service from the locked idle screen either:

Select the **EMERGENCY** softkey shown in the preceding figure of the locked idle screen and then enter the emergency number.

	Emergency call	
× 911		\otimes
6	Place call	
	Place call	

-OR-

- Dial from the locked idle screen without needing to use the **EMERGENCY** key:
 - a. Dial 911.

	••1	×
1	2	3
4	5	6 MID
7	8	9
	0	~

- **b.** Activate the speaker button on the phone.
- c. View the 'Emergency call' screen displaying the dialed emergency number.

	Emergency call	
× 911		X
	Place call	

When the phone detects that 911 was requested, it automatically dials that number.

Answering Calls

The phone indicates an incoming call by ringing and displaying **Caller X is calling you**. The LED located in the upper right corner of the phone flashes red, alerting you to the incoming call.
To answer:

Pick up the handset -OR - activate the headset key on the phone (make sure the headset is connected to the phone) -OR- activate the speaker key on the phone -OR- select the Accept softkey (the speaker is automatically activated).

Ending an Established Call

You can end an established call in a few ways.

> To end an established call:

Return the handset to the phone cradle if it was used to take the call -or- activate the headset key on the phone -or - activate the speaker key on the phone -or- select the End softkey.

Managing Calls

You can view a history of missed, received and dialed calls.



Each device reports every call from | to that user to the server. All devices that a user signs into are synchronized with the server. The Calls screen is synchronized with the server.

➤ To manage calls:

- 1. Select Calls and in the Calls screen, select Recent.
 - Calls are listed from newest to oldest.
 - Missed call indicates a call that was not answered.
 - Incoming and outgoing calls are differentiated by their icon.
- 2. Select a call in the list and then select [&] to call someone back.

Parking a Call

The phone allows a user to park a call, i.e., transfer a call to a "parking lot" for it to be picked up on any other phone in the enterprise by a party who must enter a code to retrieve it.

> To park a call:

- 1. Put the call on hold and park it; you'll receive a unique code from the Teams application.
- Communicate the code to another user who can then pick up the call on their device. The user on the other device selects the call park icon S displayed in their device's Calls screen.

Pick up a pa		
22		
	Cancel	Pick up

3. The user on the other device enters the code communicated to them and then selects the **Pick up** button to pick up the call.

Managing Teams Meetings

Multi-party conference meetings based on the Teams server (remote conference) can be calendered and initiated from the phone.

> To manage conference meetings:

1. In the phone's idle screen, select the **Meetings** softkey.

Meetings			Q
Today	Jan 09	tttttt	Dial
IP Phone Manager Demo #1 12:00 - 13:00 Online meeting		Mon Jan 07, 2019 All day Online meeting	
IP Phone Manager Demo #2 ⑤ 15:00 - 16:00 〇 Online meeting		Please respond	RSVP
IP Phone Manager Demo #3 (S)		2 participants	
Online meeting Syncing		Syncing	-
6 Calls	Mee	ത ings Voicemail	

2. Touch the + icon.

×	New event	\checkmark
Ø	Title	
ð	Add participants	
0	All Day	
	Thu Jan 10, 2019	12:00
	Thu Jan 10, 2019	12:30
0	Location	

3. Touch the 'Title' field. Use the soft keyboard that launches to enter a title for the meeting.

C450H	id if	P Pho	one f	for T	eam	s													
																	NE	EXT	
-	1	W	2	е	3	r	4	+	5	V	6	u	7	i	8	_	9	n	0
q		vv		е				ι		у		u		1		0		р	
	а		S		d		f		g		h		j		k		Ι		
4	-		Z		Х		С		۷		b		n		m		-	×	
?1:	23		,																

4. Touch NEXT.

×	New event	\checkmark
0	C450HD IP Phone for Teams	
of,	Add participants	
0	All Day	
	Thu Jan 10, 2019	12:00
	Thu Jan 10, 2019	12:30
0	Location	

5. Touch Add participants.

×	Add	parti	cipa	nts													\sim	/
To:	To: Add participants																	
0.	Online2																	
1	szqa	01																
q	' v	2	е	3	r	4	t	5	у	6	u	7	i	8	0	9	р	0
	а	s		d		f		g		h		j		k		Ι		
		z		х		С		۷		b		n		m		-	×	
?12	3	,																

6. Touch the 'To' field and then use the soft keyboard to enter the first letter of the name of the participant to add. If you're searching for Alex (for example), touch the letter A on the soft keyboard, then I, etc.; the name you're searching for will be promoted to the top of the list of Corporate Directory entries displayed.

× Add	l partic	cipants						\checkmark
To: Onlin	e2 petr							
O Petro	Vons							
q ¹ v	V 2	е	r 4	t	у 6	u ⁷	i ⁸	o° p
а	s	d	f	g	h	j	k	L
<u></u>	Z	х	С	V	b	n	m	×
?123	,							•
X Add	Inartic	inants						

×	A	dd p	oarti	cipa	nts													\sim	1
To:	0	nline2)(P	etro \	/ons) Je	ssica	Parke	er										
q	1	w	2	е	3	r	4	t	5	y	6	u	7	i	8	0	9	р	0
	а		s		d		f		g	2	h		j		k		Т		
4			z		х		с		v		b		n		m			×	
?1	23		,														6		

The feature lets you quickly and easily navigate to any employee listed in the Corporate Directory.

Using Live Captions

The phone can detect what's said in a meeting, group call or 1:1 call, and presents the text on the screen in real-time (live) captions.



Captions are currently only available in English (US).

Captions are currently unavailable for phones within government clouds.

1	4/21/3	21	00:31
		Adele Vance	
	00	Put call on hold	
	66	Turn on live captions	
	⋧	Transfer	
		Turn off incoming video	
		Dial pad	

For more information, see <u>here</u>.

Raising a Hand During a Meeting

During a meeting, you can raise a virtual hand from your phone to let people know you want to contribute without interrupting the conversation. Everyone in the meeting will see that you've got your hand up.

For more information, see <u>here</u>.

Hiding Names and Meeting Titles for Individual Devices

Names and meeting titles can be hidden for individual devices.

> To hide names and meeting titles per device:

 Access the Meetings screen (More > Settings > Meetings) (the figure is for illustrative purposes only).



2. Switch off the Show meeting names option.

Transferring a Call to Frequent Contacts

To transfer your calls efficiently to frequent contacts, the phone presents frequent contacts in the transfer screen for a single operation transfer. Contacts not shown in the list can be searched for using the search bar.

Transferring a Call to Work Voicemail

Users can directly transfer a call into someone's work voicemail without needing to ring the farend user. This allows them to discreetly leave voicemails for users without interrupting them.



Viewing and Playing Voicemail Messages

If you hear a stutter dial tone when you pick up the handset, new messages are in your voicemail box. The phone also provides a visual indication of voicemail messages.

> To view a list of your voicemail messages:

1. Activate the voicemail key on the phone (indicated by the icon of an envelope) which will be illuminated if you have voicemail, or select the Voicemail softkey in the idle screen.



- Scroll down to select from the list of messages (if there are voicemail messages in your box) which message to Play, Call or Delete.
- 3. You'll view the following screen if you don't yet have any voicemail messages:

For more information, see here.

Rejecting an Incoming Call, Sending it Directly to Voicemail

You can send an incoming call directly to voicemail if time constraints (for example) prevent you from answering it. The caller hears a busy tone from your phone.

> To send an incoming call directly to voicemail:

When the phone rings to alert to a call, select if you have voicemail, the call will go into voicemail; the Microsoft Teams server performs this functionality.

Adjusting Volume

The phone allows

- Adjusting Ring Volume on the next page
- Adjusting Tones Volume on the next page (e.g., dial tone)
- Adjusting Handset Volume on the next page
- Adjusting Speaker Volume on the next page
- Adjusting Headset Volume on the next page

For more information about sound and volume, see here.

Adjusting Ring Volume

The volume of the phone's ring alerting you to an incoming call can be adjusted to suit personal preference.

> To adjust ring volume:

- 1. When the phone is in idle state, select the VOL \blacktriangle or VOL \P key on the phone.
- 2. After adjusting, the volume bar disappears from the screen.

Adjusting Tones Volume

The phone's tones, including dial tone, ring-back tone and all other call progress tones, can be adjusted to suit personal preference.

> To adjust tones volume:

- **1.** Off-hook the phone (using handset, speaker or headset).
- 2. Select the VOL A or VOL key to adjust the volume.
- 3. After adjusting, the volume bar disappears from the screen.

Adjusting Handset Volume

Handset volume can be adjusted to suit personal preference. The adjustment is performed during a call or when making a call. The newly adjusted level applies to all subsequent handset use.

> To adjust handset volume:

- 1. During a call or when making a call, make sure the handset is off the cradle.
- 2. Press the VOL ▲ or VOL ▼ key; the volume bar is displayed on the screen. After adjusting, the volume bar disappears from the screen.

Adjusting Speaker Volume

The volume of the speaker can be adjusted to suit personal preference. It can only be adjusted *during a call*.

> To adjust the speaker volume:

- 1. During a call, activate the speaker key on the phone.
- 2. Press the VOL ▲ or VOL ▼ key; the volume bar is displayed on the screen. After adjusting the volume, the volume bar disappears from the screen.

Adjusting Headset Volume

Headset volume can be adjusted *during a call* to suit personal preference.

> To adjust the headset volume:

- **1.** During a call, activate the headset key on the phone.
- 2. Press the VOL **a** or VOL **v** key; the volume bar is displayed on the screen.

Playing Incoming Call Ringing through USB Headset

The phone features the capability to ring via a USB headset in addition to via the phone speaker.

To play the ringing of incoming calls via the USB headset:

Configure the following parameter:

audio/stream/ringer/0/audio_device=BOTH (default), BUILTIN_SPEAKER or TYPE_USB

- **BOTH**: Incoming calls play through both the USB headset and the phone's speaker.
- **BUILTIN_SPEAKER**: Incoming calls play through the phone's speaker.
- **TYPE_USB**: Incoming calls play through the USB headset.

Using the Phone as a USB Speaker

The Device Duo feature enables the phone to be configured as a paired audio device. The feature allows users to use their phone not only as a standalone desk phone but also as a smart audio device for all kinds of UC applications running on the PC. From the Teams app perspective, the phone is like any USB speaker with all controls available in the Teams app on the USB speaker interface.

For more information, see the Device Duo Application Note for Personal Use.

Viewing and Joining Meetings

Q \equiv Meetings Today Jan 10 IP Phone Manager Demo #1 IP Phone Manager Demo #1 医 Mon Jan 14, 2019 12:00 - 13:00 🗘 12:00-13:00 Ø Online meeting Online meeting IP Phone Manager Demo #2 🕥 Organizer 15:00 - 16:00 🗘 Online meeting See details IP Phone Manager Demo #3 🕥 ÷, 1 participants 20:00 - 22:30 🗘 Online meeting Alon Mo ர C Voicemail Calls Meetings

Scheduled meetings can be viewed and joined by selecting the Meetings tab.

> To view the details of a meeting:

1. Scroll down if necessary to the meeting whose details you want to view and select it.

Meetings		Q
Tomorrow IP Phone Manager Demo #1 12:00 - 13:00 Online meeting	Jan 11	IP Phone Manager Demo #2 Fri Jan 11, 2019 15:00 - 16:00 Ø Online meeting
IP Phone Manager Demo #2 ⑤ 15:00 - 16:00 ♡ Online meeting		Organizer See details
IP Phone Manager Demo #3 (S) Syncing		1 participants
کی Calis	Mee	ر است ings Voicemail

2. Select See details and view in the right pane the details of the meeting.

> To join a meeting:

In the meeting you want to join, select the See details link and then select Join online meeting.

\leftarrow Description
Join online meeting
Join by Phone <u>13473525047</u> (Toll Number)
Conference ID: 1186392

Better Together over Bluetooth

Read here about how to configure Better Together over Bluetooth with support for:

- Pairing with the Teams PC Client
- Lock/unlock synchronization
- As a feature in preview] Use of the phone as the Teams audio device for calls / meetings

> To set up Bluetooth on the PC side:

1. Enable Bluetooth on your PC.

Settings	
ශි Home	Bluetooth & other devices
Find a setting	+ Add Bluetooth or other device
Devices	
	Bluetooth
Bluetooth & other devices	On On
日 Printers & scanners	Now discoverable as "TSINF3L156"

- 2. Install Teams PC Client on the PC.
- **3.** Sign in to the Teams PC Client with your account (it's necessary to sign in with the same accounts to both the Teams PC Client and to the device).

	Preview	- 1	٥	×
	TD	Teams Device16 Change picture		
ib.zip		ilable status message		>
	□ Sav	ed		
6:13 Devic	203 Sett	ings		

> To set up Bluetooth on the device side:

- **1.** Sign in to the Teams application with your account (it's necessary to sign in with the same accounts to both the Teams PC Client and to the device).
- 2. Go to the hamburger menu on the device and click Manage devices.

		6°
TD	FAVORITES	RECENT
Teams Device16 Manual Test Engineer	Favorites	
더 Set status message	Teams	
Manage devices None		
🗄 Hot desk		
ද්රා Settings	(i) Calendar	Toicemail

3. View the displayed available device to connect to.

Connect your de	evices to get the most out your Microsoft Teams experience	ce.
Devices signed in a	as: teamsdevice16@3pip.onmicrosoft.com	0
TSINF3L156		
Active		

4. Pair the device with your PC.

Connect your devices to get the most out your Microsoft Teams experie	ince.
Devices signed in as: teamsdevice16@3pip.onmicrosoft.com	Ö
TSINF3L156 Waiting for a response	CANCEL

5. View on your PC a notification it gets to accept the connection:

Connection	request			
C450HD would I	like to pair with you	r PC. Click on "Connect	to approve	h.
			Cancel	Connect

- 6. Accept the notification from PC.
- 7. Check the device and make sure pairing was successful:

← Manage devices	
Connect your devices to get the most out your Microsoft Teams experience.	
Devices signed in as: teamsdevice16(j)3pip.onmicrosoft.com	Ö
TSINF3L156 Active	DISCONNECT

8. When pairing the phone with the PC Client, the PC Client presents the following request for approval:

Connection request		
C450HD would like to pair with your PC. Click on "Con	nect" to approve.	1
	Cancel	Connect
	Cancer	connect

Once connected, the pho	one will be presented as a default Teams PC Client Audio device	5:
Settings		
	Devices	
鉸 General	Manage your connected devices	
	Manage devices	
Q Notifications		
O Devices		
Permissions	Audio devices	
℅ Calls	C450HD 🗸	
	Speaker	
	C450HD 🗸	
	Microphone	
	C450HD 🗸	
	Dr. Make a test call	

. . . ,ill k Аl+ т/ at A. <u>م:</u> - I -

Adding a Speed Dial

- Applies only to the C455HD phone with Expansion Module (sidecar).
- The feature expands the phone's functional capabilities.
- Users can configure speed dials in the sidecar's BLFs to speed dial frequently-• used contacts with the press of a button, determine contacts' presence status from BLF button LEDs, and manage contacts quickly.
- The feature also allows the user to easily transfer a call to a speed dial contact.
- The feature increases user productivity in the workplace. •

> To add a speed dial:

Add it from the Teams PC client; adding a speed dial from the PC client will be reflected on the sidecar as well.

-OR-

- Add it from the C455HD phone using one of the following options:
 - a. Via the Calls > Recent tab. Select a user and then select the 'star' icon to add them to the speed dial list:

Calls 97239764403			₿°	Q
		FAVORITES	RECENT	
Sec. Sec. Sec. Sec. Sec. Sec. Sec. Sec.	Call	Nir Pardo & Duration: 7 & Erez Alazrak	min 49sec	:07 AM
		EA & Duration: 2		÷
		Vladimir Shei & Duration: 1	inkerman	B
Home	Calls	[iii] Calendar	More	

b. Via the People tab using + > Add from Directory and then add the users to the speed dial.



\leftarrow	People									
All Cont	tacts 🗸					J				
J	Jill	Jill				•				
°J	Kevin							Jill Add from dire	ectory	0+
e.	Lisa				Em	^{ail} nline3@au	diocodes	Create new Sipprnd.or	group Imicros	
els.	moriya					^{pears in} beed dial, C)ther cor	ntacts		×
\leftarrow	Add fro	m direct	ory							
Add A	u]									
	ory conta									(11)
AS			(TEAMS							
q	W	² e	3	r	t	y ⁶	U ⁷	i	0 °	р
	а	S	d	f	g	h	j	k		I
_ _		Z	Х	С	V	b	n	m		×
?123	3	,								H
\leftarrow	Select	a group								\checkmark
+ c	create ne	w group								
Group										
Taggeo	ł									
Favorit	tes									
Speed	dial									
Other o	contacts									

The sidecar displays the user's speed dial list. The list is synchronized on all devices under the same user account. The order on the sidecar corresponds to the order of the speed dial list.

6 Performing Administrator-Related Operations

Network administrators can:

Update phone firmware manually (see Updating Phone Firmware Manually on page 86

Manually perform recovery operations (see Manually Performing Recovery Operations on page 89

Remove devices from Intune management (see Removing Devices from Intune Management on page 90

Update Microsoft Teams devices remotely (see Updating Microsoft Teams Devices Remotely on page 98

Manage phones with the Device Manager (see Managing Phones with the Device Manager on page 98

Setting up an E911 Emergency Location using TAC

An E911 emergency location can be set up using the Microsoft Teams admin center.

➤ To set up an E911 emergency location:

 In the TAC, go to Locations and in the 'Emergency addresses' page, set a new location by clicking + Add.

	Microsoft Teams admi	in center		♀ Search - Preview			¥ ⊠	۲
≡								
ଭ	Dashboard		Emergency addresses					
ზევ	Teams	\sim						
සී	Users	~	An emergency location is a physical street address you can add places. Learn more	for your organization. To specify buildings, floors, or offices	at a location,			
ا	Teams devices	\sim						
œ	Teams apps	~	🕂 Add 🖉 Edit 📋 Delete					Y
Ē	Meetings	~	 Description 	Country or region	Address	Phone numbers		Voice use
	Messaging policies		AudioCodes	United Kingdom	44 1252 759150 Alexandra Road, Farnborough , Ferneberga H	0		0
_	Voice	ž	AudioCodes Inc.	United States	27 WORLDS FAIR DR, FRANKLIN TWP NJ 08873, US,	138		162
-	Emergency addresses		AudioCodes - France & Benelux	France	104 Avenue Albert 1er - Les Passerelles, Rueil-Malmaison 925	0		0
	Network topology		Al-Logix Europe	Netherlands	57 Geerweg, TER AAR 2461 TT, NL,	0		0
	Networks & locations		✓ test1105	United States	1 Little Albany Street, New Brunswick NJ 08901, US,	1		3
G	Enhanced encryption p		test2906	United States	30 Worlds Fair Drive, Franklin NJ 08873, US,	1		1
	Policy packages		test0307	United States	32 Worlds Fair Drive, Franklin NJ 08873, US,	0		0
	Planning Analytics & reports	ž	Test Oleg	United States	11 Worlds Fair Drive, Franklin NJ 08873, US,	0		0
-	Analytics & reports Notifications & alerts	~	test0407	United States	13 Worlds Fair Drive, Franklin NJ 08873, US,	0		1

2. Enter a name for the location, enable insert address manually, make sure that all data is filled in correctly and then click Save.

₩	Microsoft Teams adm	nin cent	er	♀ Search - Preview		
≡			Emergency addresses \ New emergency address			
ඛ	Dashboard					
දුටු	Teams		test_0816			
දී	Users					
٨	Teams devices		Country or region			
ß	Teams apps		United States		\sim	
Ē	Meetings		Input address manually			
Ę	Messaging policies		On Street number	Street name		1
ଙ	Voice		2079	Brentwood Drive		
3	Locations		City	State	Zip code	
	Emergency addresses		Austin	Texas \lor	78756	
	Network topology		Latitude	Longitude		
	Networks & locations		30.398167	-97.819504		
G	Enhanced encryption p		Organization name 🕦	ELIN (optional) 🕞		
4	Policy packages		Test_Test_Test_Audiocodes(R&D lab)	ELIN (optional)		
這	Planning					
.	Analytics & reports		Save Cancel			
Ū	Notifications & alerts	~				

3. After the location has been set, click on the location and add a place (building, etc.). Make sure to maintain the hierarchy. Click **Apply** and verify the place has been set.

	ter P Search - Preview	
≡		place
ଜ	Place in	Test_Test_Test_Audiocodes(R&D lab)
8 <u>0</u> 3	test_0816 Location network summary O Name	
88	O 2079 Brentwood Drive, Austin TX Places O	ng A
ا	Validated Notes Herer () Wi-Fi access points Emerge	ency Location Identification Number
œ	Vice users 0 (ELIN) Location ID: eds40017.5a66- 4.68.9587.736001308962 0 (ELIN)	
Ē	4C18-953/-/ 300U19U9972 Phone numbers () 0 Organization name: 0	
E)	Teit_Test_Audiocodes(R&D Ports lab) 0	
T		
6		
	Places Phone numbers Subnets Wi-Fi access points Switches Ports	
	+ Add / Edit 🗍 Delete	
G	✓ Name Voice users Subnets Wi-Fi access points Switches	
1		
1		
<i>i</i> ii		0
Û	O No data is available.	
٢		Cancel

- **4.** Enter the place you've set and define how to determine the emergency location. It can be determined by these values:
 - Port ID
 - Switch (Chassis) ID
 - BSSID (Wi-Fi access points)
 - Subnet
 - User predefined location (see below for more details).

test_0816 Place network summary *> Building A Submets *> Building A Voice users *> Alidated Voice users Location ID: d4e9fb00-1d70- 11ed-9943-ddfc1230549 Phone numbers Organization name: Switches Test_Test_Test_Audiocodes(R&D lab) Ports Phone numbers O	The h		location is deter	mined in the same order as a	bove.
Phone numbers Subnets Wi-Fi access points Switches Ports	→ Building A	78756, US, Building A Validated Location ID: d4e9fb00-1d70- 11ed-5943-ddfc123f0549 Organization name: Test_Test_Test_Audiocodes(R&D	0 Phone numbers	Subnets O Wi-Fi access points O Switches O Ports	
Z Edit		Subnets Wi-Fi access points Switche	es Ports		

5. Enter a location defined by a specific port ID. Make sure to enter the port description correctly, as delivered from your switch (* the switch must allow LLDP transmit and receive and provide LLDP information).

			er 🖉	Search - Preview		
≡			Emergency addresses \ test_0816 \ Building A			Add port
ŵ						Port ③
දිරි			test_0816		Place network summary	Gi 1/0/19
88			⇔ Building A		Subnets O	
♣			© 2079 Brentwood Drive, Aus 78756, US, Building A	Voice users	Wi-Fi access points	Chassis ID () B4-14-89-BE-C0-00
BÊ			78756, US, Building A Validated	0 Phone numbers	0	84-14-89-8E-CU-UU
÷			Location ID: d4e9fb00-1d7 11ed-8943-ddfc123f0549	0- 0	Switches O	Description
Ę			Organization name: Test. Test. Test. Audiocodesi	70.0	Ports	Room 123
1			lab)		·	
6						
						Emergency location
			Phone numbers Subnets Wi-Fi access point	s Switches Ports		An emergency location is a physical address with an optional place. Learn more If your organization has more than one physical locat
			+ Add + Upload / Edit 🛱 Delete 0 item			it's likely that you'll need more than one emergency location. Add a new emergency location.
G						test_0816
1			V Port O Description	Chassis ID ①	Emergency location ①	T 2079 Brentwood Drive, × Austin TX 78756, US,
:=						
<i>/</i> //						
Û						
۲	Other settings	×		0 1	lo data is available.	Apply Cancel

6. Define a location defined by switch (Chassis) ID. The location can be the same since a room defined in the previous step can reflect a room in a building using the same switch).

	Microsoft Teams adm	nin cente	r - 🔎 Search -	Preview		
≡			Emergency addresses \ test_0816 \ Building A			Add network switch
ଜ						Chassis ID 🕕
ĉŝŝ		~	test_0816		Place network summary	B4-14-89-BE-C0-00
දර		~	⇔ Building A		Subnets O	
♣		~	© 2079 Brentwood Drive, Austin TX 78756, US, Building A	Voice users	Wi-Fi access points	Description Add a description so you know why it was
BÊ		~	78756, US, Building A Validated	0 Phone numbers	0 Switches	created
Ē		~	Location ID: d4e9fb00-1d70- 11ed-8943-ddfc123f0549	0	Switches 0	
E			Organization name: Test_Test_Audiocodes(R&D		Ports 0	Emergency location
T		~	lab)			An emergency location is a physical address with an optional place. Learn more
6		^				If your organization has more than one physical locati it's likely that you'll need more than one emergency
						location. Add a new emergency location.
			Phone numbers Subnets Wi-Fi access points Sw	itches Ports		test_0816 → Building A
			+ Add + Upload 🖉 Edit 📋 Delete 0 item			2079 Brentwood Drive, X Austin TX 78756, US,
G						Building A
1			Chassis ID () Description			
ĩ≣		~				
ŝ		~				
Û		~				
۲		~		() N	o data is available.	Apply Cancel

7. Define a location by subnet. The location can be defined like switch ID (if in charge of several buildings, since it reflects a perimeter or an area).

	Microsoft Teams adn	nin cent	er 🖉 Search - Previ	ew		
≡			Emergency addresses \ test_0816 \ Building A			Add subnet
۵Þ						IP version
8 <u>6</u> 3 те			test_0816		Place network summary	IPv4
26 U			⇔ Building A		Subnets O	
			© 2079 Brentwood Drive, Austin TX 78756, US, Building A	Voice users	Wi-Fi access points	Subnet () 192.168.202.0
BB TO			78756, US, Building A Validated	0 Phone numbers	0	172.100.202.0
ti ⊳			Location ID: d4e9fb00-1d70- 11ed-8943-ddfc123f0549	0	Switches 1	Description
E, M			Organization name: Test_Test_Audiocodes(R&D		Ports 0	Add a description so you know why it was created
@ V			lab)			
🚯 La						
E						Emergency location
N			Phone numbers Subnets Wi-Fi access points Switche	s Ports		An emergency location is a physical address with an optional place. Learn more If your organization has more than one physical locati
N			+ Add + Upload @ Edit 🖗 Delete 0 item			it's likely that you'll need more than one emergency location. Add a new emergency location.
Gi E						test_0816 → Building A
1 Pi			✓ Subnet ① Description	Emergency location ①		T 2079 Brentwood Drive, X
х≣ р						Austin TX 78756, US, Building A
siii A						
ΩN						
© 0	Other settings	×		① No data is an	vailable.	Apply Cancel

8. Verify all settings have been implemented correctly, under the Networks & locations tab.

Networks & location	ns		
Subnets Wi-Fi access points	Switches Ports		
	can associate multiple subn	lient's location is determined based on the network subnet nets with the same network site but you can't associate	
Subnets summary			
3 3 Subnets Emer	gency locations		
+ Add + Upload 🖉 Edi	it 📋 Delete 3 items		
Subnet ①	Description	Emergency location ③	
192.168.202.0		test_0816	
192.168.1.0	Oleg's Wifi	test1105	
✓ 172.17.178.0	Lucky	test0407	
A network switch is a device that con	ces use this connection to	etwork (LAN) devices, like desktops running the Teams a receive and transfer data to each other. Each network sy twork. Learn more	
Switches summary 3 2 Switches Emerg	ency locations		
+ Add + Upload 🖉 Edit	: 🗇 Delete 3 items		
✓ Chassis ID ③	Description	Emergency location ③	
✓ B4-14-89-BE-C0-00		test_0816	

9. Verify all settings have been implemented correctly, under the Networks & locations tab.

Subnets Wi-Fi acces	s points Switches Ports		
	ical Ethernet connection that connects m 1 the Teams app. For each port, you need 1ams. Learn more		
Ports summary			
1 Port	1 Emergency location		
+ Add + Uploa	d 🖉 Edit 📋 Delete 1 item		
✓ Port 🛈	Description	Chassis ID 🛈	Emergency location
✓ Gi 1/0/19		B4-14-89-BE-C0-00	test_0816

After a location has been defined, make sure that:

- AudioCodes' phone runs the latest firmware released.
- AudioCodes' phone runs the Teams app issued June 2022 and later (U3-A and higher).
- E911 information is displayed on the phone screen 30-120 minutes after the location is set (time estimated under laboratory conditions).
- To trigger information to be shown before that time period, you can:
 - Dial a 933-test call and check if the location has been accepted, displayed and vocalized by the announcer.
 - Enter the 'Calling' menu from the phone's home screen and verify the location is presented there (entering the 'Calling' menu triggers the information to be pulled from MS servers).

Block calls with no caller ID
Emergenerit
Emergency Location
Test_Test_Test_Audiocodes(R&D lab) 9 South St US Hanover 03755 US

Updating Phone Firmware Manually

AudioCodes' Android Phone Utility allows network administrators to manually update a phone's firmware.

> To manually update a phone's firmware:

1. From the PC's **Start** menu, select the app icon or click the application's exe file in the folder in which you saved it.

Android Phone Utility V1.1.22		- 🗆 X
rSingle-Operations-		^
Android Phone Address SSH Connect SS	H Disconnect	
Username admin		
PWD 1234		
Model MAC	Copy MAC	
Firmware file (*.zip)	Browse Submit	
APK file (*.apk)	Browse Submit	
Command:	Send	
Next to device(s)		
rMulti-Operations-		-
Firmware Folder (*.zip)	Browse Device Cert (*.crt) Browse	
Configuration (*.cfg)	Browse Device Cert Key (*.key) Browse	
Run script (*.txt)	Browse Device pfx (*.pfx) PWD Browse	
Phones IP list (*.txt)	Browse CA Cert (*.crt) 0 🚔 Browse	
🗖 Bulk Upgrade		
Total Number of IPPs: Firmware Version:		
Current Uploaded IP Addres Total Upgraded IP	Ps:	
Multi-Upgrade		
Reboot Factory Default Sign-Out Load Certificates Load C	Configuration Run script Sign-in	
Get Version Get Logs Start Syslog Stop Syslog main	J Screen Capture Screen Record Start DSP Record Stop DSP Record Tcpdump 30 €	
PC IP Address: 10.13.2.147		
Syslog UDP port: 514		
PC folder D:/Flare/IPP/Content/Resources/Images/0	ASOHC Browse	
< compared with the second sec		> •
Exit		

2. In the 'Android Phone Address' field, enter the IP address of the device .

3. Click SSH Connect; a connection with the device is established.

8	Android Phone Utility V1.1.2	22		- 🗆 ×
ſ	-Single-Operations			^
		10.16.2.50 SSH Connect SSH Disconnect		
		admin		
		1234		
	Model	RXV81 MAC 00:90:8F:48:4E:3F Copy MAC		
		Browse Submit		
	APK file (*.apk)	Browse Submit		
		Send		
	Next to device(s)	r.		
[Multi-Operations			
		Browse Device Cert (*.crt)	Browse	
	Configuration (*.cfg)	Browse Device Cert Key (*.key)	Browse	
		Browse Device pfx (*.pfx) PWD	Browse	
		Browse CA Cert (*.crt) 0 🚔	Browse	
	Bulk Upgrade			
	Total Number of IPPs: Current Uploaded IP Add	Firmware Version:		
	Multi-Upgrade	tres Total Upgraded IPPs:		
	Multi-Opgrade			
	Reboot Factory Default			
	Get Version Get Logs		ord Tcpdump 30+	
		10.13.2.147		
		514		
	PC folder	D:/Flare/IPP/Content/Resources/Images/C450HL Browse		
	http serving on port 8000 Connected to: 10.16.2.50	^		
-				> v
E	Exit			

- 4. Under the 'Single Operations' section of the screen next to the field 'Firmware file', click the **Browse** button and navigate to and select the candidate image file.
- 5. Click the **Submit** button; a firmware upgrade process starts; the phone is automatically rebooted; a notification pops up when the process finishes. The phone notifies you that it's being updated and rebooted.

Monday Python new piatrorm - III (station mng, DB and etb 10:30 AM - 11:30 AM	ipdate	Processing the update Mon Jun 22, 2020 3:00 PM - 4:00 PM C	a backada-	Med. Jun X Monday Python new prathom (station mng, DB are 10:30 AM - 11:30 AM	m update roid update	Mon Jun 22, 2020 3:00 PM - 4:00 PM C	8° &
Paired Audio Device- Co 1:30 PM - 2:30 PM Microsoft Teams Meetin	Join	Golan Join V Accept	ed 🗸	Paired Audio Device 1:30 PM - 2:30 PM Microsoft Teams Me	Join	Golan Join 🗸 Acce	pted ~
IPP - Weekly 3:00 PM - 4:00 PM C Golan		Join Microsoft Teams Ma 3-376-2046 Israel, Tel Avi ID: 952 211 578# Local n	iv (Toll) Cont 🔤	IPP - Weekly 3:00 PM - 4:00 PM C Golan		Join Microsoft Teams 3-376-2046 Israel, Tel ID: 952 211 578# Loca	
€. Calls	Calendar	Voicemail	(1) People	Q. Callo	Calendar	Voicemail	(±) People
		Mad. Jun Y Monday Pythor (statio 10:30 /		1007	in 4 minutes		
		Paired Audio Device- 1:30 PM - 2:30 PM Microsoft Teams Mee	Join	Golan Join 🗸 Accep	ted ~		
				to be defined on the Workshop of the	lasting +072		
		IPP - Weekly 3:00 PM - 4:00 PM C Golan		Join Microsoft Teams N 3-376-2046 Israel, Tel A ID: 952 211 578# Local I	viv (Toll) Cont 📴		



The above is also displayed when the phone is upgraded remotely from Microsoft Admin Portal or from AudioCodes' Device Manager.

Downloading Certificates

The following shows how to load user certificates to a single device and to multiple devices. Before loading certificates, put the certificate files in a designated folder.

Certificates can be downloaded using:

- Device Manager (see the Device Manager Administrator's Manual)
- Android Phone Utility
 - The extension of the device certificate file must be .crt
 - The extension of the private key must be .key
 - The extension of the CA certificate file must be **.crt**. It's possible to load up to 5 CA certificates to the phone using the placement selector (0-4) (Default: 0).

AudioCodes Android Phone Utility

Certificates can be loaded to a phone or to multiple phones using AudioCodes' Android Phone Utility.

> To load certificates to a single device:

 In the Android Phone Utility (see Android Phone Utility on page 105 for detailed information about the application), enter the phone's IP address and click SSH Connect.

Teams Operations			
Single-Operations			
Teams IP-Phone Address	10.59.200.156	SSH Connect	SSH Disconnect
Username	admin		
PWD	1234		

 Click the Browse button next to the field 'Certs Folder' and navigate to and select the certificate file to download.



3. Click Download Certs to add the certificate.



4. After a short period, view in the results pane 'Certs Successfully Installed'.

> To load certificates to multiple devices:

1. In the Android Phone Utility (see Android Phone Utility on page 105 for more information), enter the phone's IP address and click **SSH Connect**.



2. Click the**Browse** button next to the field 'Certs Folder' under Multi Operations and then navigate to and select the certificate files to download.



- 3. Click the Browse button next to the field 'Phones IP List' under 'Multi Operations' and then navigate to and select the txt file listing the IP addresses of the phones to which to download the certificates. The IP addresses are listed one under the other. Each occupies its own line. No notation between them is required.
- 4. Click the now activated **Download Certs** button to add the certificates to the phones.

 Switch to Teams
 Switch to Skype
 Factory Default
 Sign-Out
 Admin Agent Restart
 Download Cefts
 Connert BW

 Get Version
 Topdump
 Get Diagnostics
 Get Bugreport
 Start Syslog
 Stop Syslog
 Screen Capture
 Screen Record
 Call Logs
 Start DSP Record
 Stop DSP Record

5. After a short period, view in the results pane 'Certs Successfully Installed'.

Manually Performing Recovery Operations

Besides manual recovery options, the Android phones also feature an independent, automatic problem detection and recovery attempt capability that can culminate in recovery mode or in switching image slots. Android phones also feature a 'hardware watchdog'. This feature resets the phone if Android is stacked and doesn't respond (though Android stacking is unlikely); there's no recovery process; the phone is only reset.

All AudioCodes devices have a reset key or a combination of keys on the keypad to reset it.



While a device is powering up, you can perform recovery operations by using a twokey combination.

When using a two-key combination, the device's main LED changes color after every *n* seconds; each color is aligned with a recovery operation option.

When?	Action	Press key combination	LED flashes 3x after release
Start pressing immediately after	Recovery mode (you	Back key +	Red

When?	Action	Press key combination	LED flashes 3x after release
power up (on U-Boot / Universal Boot Loader)	can restore defaults from there)	MENU key (3 seconds)	
	Switch slots A / B	4 key + 6 key (3 seconds)	Green
	Loader	1 key + 3 key (3 seconds)	Blue / Yel- low
	Switch Skype for Busi- ness to Android (and vice versa)	Back key + OK key (3 seconds)	Red + Green
	Restore defaults	OK key + MENU key (3 seconds)	Green + blue / Green + yellow
When successfully booted (on Android)	Reboot	From the 'Admin' menu	-
	Restore defaults	Long-press Hold key for ~15 seconds	-

Removing Devices from Intune Management

You can remove from Intune devices that are no longer needed, that are being repurposed, or that have gone missing.

> To remove devices from Intune:

- **1.** Go to Microsoft 365 Admin Centre [portal.office.com] and log in with an Administration account.
- 2. Navigate to Endpoint Manager.



The Endpoint Manager service is licensed according to individual terms. Consequently, not all network administrators will be able to navigate to it. Check if the license you're using includes the service or not.

3. Click Devices.

<u>/</u>]`



4. Click Android.

🚺 Microsoft 365 admin center 🛛 🗙	▲ Devices - Microsoft Endpoint M × +
← → ♂ ଢ	■ https://endpoint.microsoft.com/?ref=
Microsoft Endpoint Manager a	admin center
 Kome Home Dashboard All services FAVORITES Devices Apps Apps Endpoint security Reports Users Groups Tenant administration Troubleshooting + support 	Home > Devices Overview Search (Ctrl+/) (Search (Ctrl+/) (Overview (All devices (Monitor (By platform (Windows (SioS/iPadOS (macOS (Android (Device enrollment (Enroll devices ())
	Policy Image: Compliance policies Image: Conditional access Image: Configuration profiles

5. Click Android Devices > Bulk Device Actions.

Microsoft Endpoint Manager a	dmin center				Ę 🖓
≪ ♠ Home Dashboard	Home > Devices > Android	evices			
All services All services Favorites Devices Apps	Search (Ctrl+/) « Overview Android devices Android enrollment	Filters applied: OS	l number, email, user pri	Export Cara Bulk Do	
 Endpoint security Reports Users Groups Tenant administration Troubleshooting + support 	Android enfolment Android enfolment Compliance policies Configuration profiles	Showing 1 to 25 of 427 m Device name 14 deleteuser_Android_1 deleteuser_Android_1 deleteuser_Android_1 deleteuser_Android_1	Managed by ↑↓ Intune Intune	Ownership 1	Compliance Not Com Not Com Not Com Not Com Not Com Not Com
		deleteuser_Android_1 deleteuser_Android_1 deleteuser_Android_1 deleteuser_Android_1 deleteuser_Android_1	Intune Intune Intune	Personal Personal Personal Personal Personal	 Not Com Not Com Not Com Not Com Not Com Not Com

6. Select: **OS** > **Android** (Device Administrator) **Device Action** > **Delete** and then **Next**.

Microsoft Endpoint Manager a	dmin center		Ģ	Q
«	Home > Devices > Android >			
1 Home	Bulk device action			
🖾 Dashboard				
E All services				
★ FAVORITES	Basics 2 Devices 3 Review	v + create		
Devices	OS *	Android (device administrator)	\sim]
Apps	Device action *	Delete	\sim	1
🌷 Endpoint security				·
Reports	f you delete this device, you will no long	er be able to view or manage the device from the Intune portal. The device will no		
🚨 Users		ny's corporate resources. Company data may be wiped from the device if the device	tries	
A Groups				
Tenant administration				
🗙 Troubleshooting + support				
_				
	Previous			

7. Select **Devices to include** and search for the user for which enrolled devices are to be removed.

Microsoft Endpoint Manager admin center 🛛 💀 🧳			
 ≪ ☆ Home ☑ Dashboard ☑ All services 	Home > Devices > Android > Bulk device action ···· At least one device must be selected	Select devices teamsdevice2 ************************************	☆ Add filter
 FAVORITES Devices Apps Endpoint security Reports Users Groups Tenant administration Troubleshooting + support 	Basics O Devices ③ Review 0 devices selected (100 max) No devices added Select devices to include	Device name teamsdevice20_Android_2/22/2021_7:02 AM teamsdevice20_Android_2/24/2021_7:10 AM teamsdevice20_Android_2/3/2021_6:32 AM teamsdevice20_Android_2/8/2021_6:30 AM Selected devices: No devices selected	Enrolled by user UPN teamsdevice20@3PIP.onmicrosoft.com teamsdevice20@3PIP.onmicrosoft.com teamsdevice20@3PIP.onmicrosoft.com

8. Select all the devices to be removed and click **Select icon**.

teams device 2			~
OS : Android (device administrator)	$+_{\overline{Y}}$ Add filter		
Device name	Enrolled by user UPN	OS	
teamsdevice20_Android_2/22/2021_7:02 AM	teamsdevice20@3PIP.onmicrosoft.com	Android (device	adminis
teamsdevice20_Android_2/24/2021_7:10 AM	teamsdevice20@3PIP.onmicrosoft.com	Android (device	adminis
teamsdevice20_Android_2/3/2021_6:52 AM	teamsdevice20@3PIP.onmicrosoft.com	Android (device	adminis
	compactice got into initia oportico in	Android (device	. a carrier a sub-
teamsdevice20_Android_2/8/2021_6:30 AM	teamsdevice20@3PIP.onmicrosoft.com	Android (device	
teamsdevice20_Android_2/8/2021_6:30 AM elected devices:	teamsdevice20@3PIP.onmicrosoft.com	Android (device	adminis

9. After the devices are selected, click **Next**.

Microsoft Endpoint Manager admin center		
«	Home > Devices > Android >	
숨 Home	Bulk device action	
📶 Dashboard		
★ FAVORITES	✓ Basics 2 Devices 3 Review + create	
Devices	9 devices selected (100 max)	
Apps	Device name Enrolled by use	
🆏 Endpoint security	teamsdevice20_Android_2/22/2021 teamsdevice20@	
🚰 Reports	teamsdevice20_Android_2/24/2021 teamsdevice20@	
🙎 Users	teamsdevice20_Android_2/3/2021 teamsdevice20@	
🍰 Groups	teamsdevice20_Android_2/8/2021 teamsdevice20@	
Tenant administration	teamsdevice20_Android_8/17/2020 teamsdevice20@	
X Troubleshooting + support	teamsdevice20_Android_9/15/2020 teamsdevice20@	
	teamsdevice20_Android_9/15/2020 teamsdevice20@	
	teamsdevice20_Android_9/22/2020 teamsdevice20@	
	teamsdevice21_Android_2/2/2021 teamsdevice21@	
	Previous	

10. Click **Create**; a task to delete all the selected devices enrolled with a particular account is created.

Microsoft Endpoint Manager admin center			
*	Home > Devices > Android >		
숨 Home	Bulk device action		
🖾 Dashboard			
	Devices		
★ FAVORITES			
📮 Devices	9 devices selected (100 max)		
Apps	Device name Enrolled by us		
ᠲ Endpoint security	teamsdevice20_Android_2/22/2021_7:0 teamsdevice20		
👰 Reports	teamsdevice20_Android_2/24/2021_7:1 teamsdevice20		
🚨 Users	teamsdevice20_Android_2/3/2021_6:52 teamsdevice20		
🍰 Groups	teamsdevice20_Android_2/8/2021_6:30 teamsdevice20		
🔎 Tenant administration	teamsdevice20_Android_8/17/2020_1:5 teamsdevice20		
X Troubleshooting + support	teamsdevice20_Android_9/15/2020_9:0 teamsdevice20		
	teamsdevice20_Android_9/15/2020_9:0 teamsdevice20		
	teamsdevice20_Android_9/22/2020_5:4 teamsdevice20		
	teamsdevice21_Android_2/2/2021_10:5 teamsdevice21		
	Previous Create		

11. Once the action is created, the admin receives notification.





It may take some time to completely sync the devices with the account so after deleting the devices wait for 30 minutes before signing in.

Configuring Audio-Related Parameters for Noisy Environments

Network administrators can configure audio-related parameters to support the phone in special environments (such as noisy environments). To use the capability, contact AudioCodes Support.

Updating Microsoft Teams Devices Remotely

For instructions on how to update Microsoft Teams devices remotely, see here.

Applying Firmware to a Phone from a USB Disk

For recovery purposes, firmware can be applied to a phone from a USB disk.

> To apply the firmware from the USB disk:

- 1. Enter recovery mode by simultaneously pressing the 'back' key + the MENU key; the device's LED lights up red.
- 2. Insert the USB disk with the target firmware.

Figure 6-1: Apply update from a USB disk



3. Select the 'Apply update from USB disk' option and then choose the correct firmware image from the disk.

Managing Phones with the Device Manager

AudioCodes' Device Manager manages Android-based Teams phones in a similar way to UCtype phones. Teams phones' configuration parameters are in the same format as UC phones. A .cfg configuration file is defined for each device. Device Manager version 7.8.2000 and later supports Android-based Teams devices.

Zero Touch Provisioning is supported in a non-tenant aware manner; each local DHCP Option 160 must be configured with a fully-specified URL pointing to **dhcpoption160.cfg** as shown here:

Table 6-1:	DHCP Option 160 URL
------------	---------------------

DHCP Options Configuration			
DHCP option 160 URL ('dhcpoption160.cfg')			
Drice option for ORE (unopoption for cig)			
SYSTEM URLS			
OVOC accesses phones directly:		http:	://ippdm.audiocodes.com/firmwarefiles;ipp/dhcpoption160.cfg
OVOC accesses phones via SBC HTTP Proxy:		http:	s://SBC_PROXY_IP:SBC_PROXY_PORT/firmwarefiles;ipp/httpproxy/
🗹 Edit Dhcpoption160.Cfg Template	🛓 Download Dhepoption160.Cfg Template	Upload Dhepoption160.Cfg Temple	ate
🗎 Generate 'Dhcpoption160.Cfg'			
Advanced: DHCP Option 160 With Tenant Co	nfiguration		

This URL is displayed in the Device Manager page under **Setup** > **DHCP Options Configuration**. After devices are added to the Device Manager, they're allocated to tenants by selecting **Change Tenant** in the 'Actions' menu. Unless already used, it's recommended to leave the default tenant as a 'lobby' for the new devices. The above URL can also be configured in AudioCodes' Redirect Server. Android-based Teams devices currently support:

- Provisioning of configuration
- Provisioning of firmware
- Switching to UC / Teams
- Monitoring (based on periodic Keep-Alive messages sent from devices)
- Resetting the device

The Device Manager's 'internal' functions (which don't involve devices) are:

- Change tenant
- Change template
- Show info
- Generate Configuration
- Delete device status
- Nickname

Actions that go beyond the devices' periodic provisioning cycle will be supported in next releases. The **Check Status** option is irrelevant for Android-based Teams devices therefore it's omitted from the 'Actions' menu.

- To change a device's configuration, see the *Device Manager Administrator's Manual*. Changing a device's configuration using the Device Manager is the same for Android-based Teams devices as for UC devices.
 - To commit a change made at the template/tenant/site/group/user level, perform **Generate Configuration**. The change can be validated in the device's .cfg file. The Android-based endpoint pulls the updated configuration when the next periodic provisioning cycle occurs.

Configuring a Periodic Provisioning Cycle

Network administrators can configure how often periodic provisioning cycles will occur, to suit enterprise management preference.

- > To configure how often periodic provisioning cycles will occur:
- Use the following table as reference.

Parameter	Description
provisioning/period/type	Defines the frequency of the periodic provisioning cycle. Valid values are:
	HOURLY
	DAILY (default)
	WEEKLY
	POWERUP
	EVERY5MIN
	EVERY15MIN
	Each value type is accompanied by additional parameters (see Supported Parameters on the next page) that further defines the selected frequency.

Table 6-2:	Periodic	Provisioning Cycle	
	I CHOUIC	r rovisioning cycic	

Configuring TimeZone and Daylight Savings

Network administrators can configure TimeZone and Daylight Savings to suit enterprise requirements.

AudioCodes' Teams phones feature a **Automatic Time Zone Detection** mechanism that allows the device to automatically detect the time zone via geographical location. If time zone is not configured, this feature is implemented.

> To configure TimeZone and Daylight Savings:

Use the following table as reference.

Table 6-3:	TimeZone	Δnd	Davlight	Savings
	THICEONC	Alla	Duyngne	Juvings

Parameter	Description
date_time/- timezone	Defines the Timezone. Valid values are: +00:00 +01:00 +02:00 Etc.
date_time/time_ dst	[Boolean parameter]. Configuring ENABLED adds one hour to the con- figured time. Valid values are:

Parameter	Description
	1
	0

For example, to configure Central European Summer Time (CEST) you can either configure:

date_time/timezone=+01:00

date_time/time_dst=1

-OR-

date_time/timezone=+02:00

date_time/time_dst=0

Managing Devices with HTTPS

Android-based Teams devices support an HTTPS connection.

To establish an HTTPS connection:

The server certificate must be signed by a well-known Certificate Authority -OR-

- A root/intermediate CA certificate must be loaded to the device's trust store either via 802.1x or configuration parameter '/security/ca_certificate/[0-4]/uri'
- > To maintain backward compatibility with devices previously running UC versions:
- Configure parameter '/security/SSLCertificateErrorsMode' to Ignore

Supported Parameters

Listed here are the configuration file parameters currently supported by Android-based Teams devices. They're in AudioCodes' UC version format. The parameters are comprised of Microsoft configuration profile settings and AudioCodes' device-specific parameters.

- general/silent_mode = 0 (default)/1
- general/power_saving = 0 (default)/1
- phone_lock/enabled = 0 (default)/1
- phone_lock/timeout = 900 (default) (in units of seconds)
- phone_lock/lock_pin = 123456
- display/language = English (default)
- display/screensaver_enabled = 0/1
- display/screensaver_timeout = 1800 (seconds)
- display/backlight = 80 (0-100)
- display/high_contrast = 0 (default) /1
- date_time/timezone = +02:00
- date_time/time_dst = 0 (default) /1
- date_time/time_format = 12 (default) / 24
- network/dhcp_enabled = 0/1
- network/ip_address =
- network/subnet_mask =
- network/default_gateway =
- network/primary_dns =
- network/pecondary_dns =
- network/pc_port = 0/1
- office_hours/start = 08:00
- office_hours/end = 17:00
- logging/enabled = 0/1
- logging/levels = VERBOSE, DEBUG, INFO, WARN, ERROR, ASSERT, SILENT
- admin/default_password = 1234
- admin/ssh_enabled=0/1 (default)
- security/SSLCertificateErrorsMode = IGNORE, NOTIFICATION, DISALLOW (default)
- security/ca_certificate/[0-4]/uri uri to download costumer's root-ca
- provisioning/period/daily/time
- provisioning/period/hourly/hours_interval
- provisioning/period/type = HOURLY, DAILY (default), WEEKLY, POWERUP, EVERY5MIN, EVERY15MIN
- provisioning/period/weekly/day
- provisioning/period/weekly/time
- provisioning/random_provisioning_time

7 Troubleshooting

The information presented here shows how to troubleshoot AudioCodes devices.

DSCP

The phone's Teams application supports DS (Differentiated Services) containing a differentiated Services Code Point (DSCP) value and an ECN (Explicit Congestion Notification) value, for monitoring Quality of Service (QoS).

DSCP is part of the IP header that defines the type of routing service to tag outgoing voice packets originated from the phone. It informs routers that this packet must receive a specific QoS. Values can be set in decimal (e.g., 184) or hexadecimal (e.g., 0xb8). The default value is **0xb8** (184).

	F	igure 7	7-1:	DS Fiel	ld, DSC	Р		
0	1	2	3	4	5	6	7	
	+ +	+	DS F1	IELD, 1	DSCP +	+	E(CN FIELD
					d servi estion			

The DSCP value for audio is 0x46.

See also Microsoft's website for more information.



The DSCP value can be adjusted *on the server*; it cannot be adjusted on the client. See the figures below for recommended values.

ledia traffic type	Client source port range	Protocol	DSCP value	DSCP class
Audio	50.000-50.019	TCP/UDP	46	Expedited Forwarding (EF)
√ideo	50,020-50,039	TCP/UDP	34	Assured Forwarding (AF41)
Application/Screen Sharing	50.040-50.059	TCP/UDP	18	Assured Forwarding (AF21)

2057 47.390455	192.168.2.104	172.17.178.203	UDP	84 50006 + 50012 Len=42
2058 47.390541	192.168.2.104	172.17.178.203	UDP	228 50006 → 50012 Len=186
2059 47.393899	192.168.2.104	172.17.178.203	UDP	151 50006 → 50012 Len=109
2060 47.395193	172.17.178.203	192.168.2.104	UDP	114 50012 → 50006 Len=72
2061 47.395209	172.17.178.203	192.168.2.104	UDP	114 50012 → 50006 Len=72
1				
 Ethernet II, Src: / Internet Protocol V 0100 = Vers 0101 = Head Differentiated S 1011 10 = 0 00 = E Total Length: 76 Identification: Flags: 0x4000, 0 Fragment offset: Time to live: 64 Protocol: UDP (1 Header checksum: 	AudioCod_9c:1a:38 (0 Version 4, Src: 192. sion: 4 Services Field: 0xb8 Differentiated Servic Explicit Congestion 1 0 0xd3ba (54202) Don't fragment : 0 4 1 17) : 0x4447 [validation n status: Unverified .2.104	0:90:8f:9c:1a:38), Dst: VI 168.2.104, Dst: 172.17.17 (5) (DSCP: EF PHB, <u>ECN: Not-</u> ces Codepoint: Expedited f Notification: Not ECN-Cap: disabled]	Mware_ff:63:15 (00:0 8.203 ECT) Forwarding (46)	<pre>\Device\WPF_{296D2E63-3934-488A-BFAB-6666448797EE2}, c:29:ff:63:15)</pre>

Figure 7-3: Audio

Users

Read the following if an issue with your phone occurs. Contact your network administrator if necessary. Network administrators can also use this documentation as reference.

Symptom	Problem	Corrective Procedure
Phone is off (no screen displays and LEDs)	Phone is not receiving power	 Make sure the AC/DC power adapter is attached firmly to the DC input on the rear of the phone. Make sure the AC/DC power adapter is plugged into the electrical outlet. Make sure the electrical outlet is functional. If using Power over Ethernet (PoE), contact your network administrator to check that the switch is powering the phone.
Phone is not ringing	Ring volume is set too low	Increase the volume (see Adjusting Ring Volume on page 72)
Screen display is poor	Screen settings	Adjust the phone's screen brightness
Headset has no audio	Headset not connected properly	 Make sure your headset is securely plugged into the headset port located on the side of the phone. Make sure the headset volume level is adjusted adequately (see Adjusting Headset Volume on page 72).

Table 7-1: Troubleshooting

Network Administrators

Network administrators can troubleshoot telephony issues in their IP networks using the following as reference.

Android Phone Utility

AudioCodes' IP phone is by default accessed via Secure Shell (SSH) cryptographic network protocol after the network administrator signs in.



SSH is by default disabled and can be enabled with Administrator permissions in the phone screen (**Device Administration** > **Debugging** > **SSH**).

AudioCodes provides network administrators with an SSH-based Android Phone Utility.

> To sign in to the utility:

Enter your username and password; **admin** and **1234** are the defaults.

The application gives network administrators the following debugging capabilities:

- Capturing the Phone Screen on page 107
- Running Tcpdump on page 107
- Getting Information about Phones on page 108
- Remote Logging (Syslog) on page 110
- Getting Diagnostics on page 111
- Getting a Bug Report
- Activating DSP Recording on page 113
- Deactivating DSP Recording on page 114
- Getting Information about Phones on page 108
- > To open the utility:
- 1. From the PC's **Start** menu, select the app icon or click the application's exe file in the folder in which you saved it.

Android Phone Utility V1.1.22				- 0
-Single-Operations-				
Android Phone Address	SSH Connect SSH Disconnect			
Username <mark>admin</mark>				
PWD 1234				
Model		Copy MAC		
Firmware file (*.zip)		Browse Submit		
APK file (*.apk)		Browse Submit		
Command:		Send		
lext to device(s)				
Multi-Operations-				-
Firmware Folder (*.zip)		Browse Device Cert (*.crt)	Browse	
Configuration (*.cfg)		Browse Device Cert Key (*.key)	Browse	
Run script (*.txt)		Browse Device pfx (*.pfx) PWD	Browse	
Phones IP list (*.txt)		Browse CA Cert (*.crt)	Browse	
Bulk Upgrade				
Total Number of IPPs:	Firmware Version:			
Current Uploaded IP Addres	Total Upgraded IPPs:			
Multi-Upgrade				
Reboot Factory Default Sign-0	Out Load Certificates Load Configuration	tun script Sign-in		
Get Version Get Logs Start S	iyslog Stop Syslog main 🚽 Screen G	ture Screen Record Start DSP Record Stop DSP Re	Record Topdump 30 🖶	
PC IP Address: 10.13.2.				
Syslog UDP port: 514				
PC folder D:/Flare	/IPP/Content/Resources/Images/C450HE Bro			
		^		
Exit				

 In the 'Android Phone Address' field, enter the IP address of the device (get it by pressing the MENU hard key > About phone > Status > IP Address).

Android Phone Utility V1.1.22		- 0
Single-Operations		
	10.16.2.50 SSH Connect SSH Disconnect	
	admin	
PWD	1234	
Model	RXV81 MAC 00:90:8F:48:4E:3F Copy MAC	
	Browse Submit	
APK file (*.apk)	Browse Submit	
	Send	
lext to device(s)		
Multi-Operations		
Firmware Folder (*.zip)	Browse Device Cert (*.crt) Browse	
Configuration (*.cfg)	Browse Device Cert Key (*.key) Browse	
Run script (*.txt)	Browse Device pfx (*.pfx) PWD Browse	
Phones IP list (*.txt)	Browse CA Cert (*.crt) 0	
Bulk Upgrade		
Total Number of IPPs:	Firmware Version:	
Current Uploaded IP Addres		
Multi-Upgrade		
Multi-Opgrade		
Reboot Factory Default	Sign-Out Load Certificates Load Configuration Run script Sign-in	
Get Version Get Logs	Start Syslog Stop Syslog main 🚊 Screen Capture Screen Record Start DSP Record Stop DSP Record Tcpdump 30=	
CIP Address:	0.13.2.147	
Syslog UDP port: 5	14	
°C folder	2:/Flare/IPP/Content/Resources/Images/C450HL Browse	
ttp serving on port 8000	2	
Connected to: 10.16.2.50		
ixit		

3. Click **SSH Connect**; a connection with the device is established.

4. Next to the field 'PC folder', click the **Browse** button and navigate to and select the folder to which to send data to use for debugging.

Capturing the Phone Screen

AudioCodes' Android Phone Utility allows network administrators to effectively collaborate and debug issues using the screen-capturing feature.

To capture the phone screen:

- 1. Open the Android Phone Utility: From the PC's **Start** menu, select the app icon or click the application's exe file in the folder in which you saved it.
- In the 'Android Phone Address' field, enter the IP address of the device (get it by pressing the MENU hard key > About phone > Status > IP Address).
- 3. Click SSH Connect; a connection with the device is established.
- 4. Next to the field 'PC folder', click the **Browse** button and navigate to and select the folder to which to send the screen captures.
- 5. Click the Screen Capture button; the phone's screen is captured and the screenshot is saved and sent to the folder.

Reboot Factory Default	t Sign-Out Load Certs Configuration load Run script Sign-in
Get Version Get Logs	Start Syslog Stop Syslog Screen Capture Screen Record Start DSP Record Stop DSP Record Tcpdump 30
PC IP Address:	10.13.2.147
Syslog UDP port:	514
PC folder	//netapp1/Documentation/Shared_Doc/Mike Dub Browse
 C 	
Exit	

6. On your PC, navigate to the folder and retrieve the screenshot. Default file name: screencap.png. Rename it to a name related to the screen you captured. If you don't rename it, it will be overwritten the next time you take a screenshot.

Running Tcpdump

Tcpdump is a common packet analyzer that allows network administrators to display TCP/IP and other packets transmitted or received over the IP telephony network, for debugging purposes.

> To run Tcpdump:

- 1. In the Android Phone Utility (see Android Phone Utility on page 105 for more information about the application), enter the phone's IP address, click **SSH Connect** and browse to a folder on the PC to which to send the information.
- Next to the Tcpdump button, set the time period or leave it at the default. Default: 30 seconds.
- **3.** Click the **Tcpdump** button and then after the progress indicator reaches the end you'll view in the results pane a 'Finished' indication.

Reboot Factory Default	Sign-Out Load Certs Configuration load Run script Sign-in
Get Version Get Logs	Start Syslog Stop Syslog Screen Capture Screen Record Start DSP Record Stop DSP Record Tcpdump 30 =
PC IP Address:	10.13.2.147
Syslog UDP port:	514
PC folder	//netapp1/Documentation/Shared_Doc/Mike Dub Browse
	ure file to //netapp1/Documentation/Shared_Doc/Mike Dubb/File KV81/FINAL/net20220831-111959.pcap

4. Open the folder on the PC to which you commanded the application to send the information and locate and open the file 'net.pcap'.

Alternatively, run Tcpdump *without* the utility.

To run tcpdump without the utility:

1. Access the phone via SSH and run the following commands:

setprop ac.ac_tcpdump.timeout <seconds>

2. After defining the capturing time as shown in the preceding command, start the capture:

setprop ac.ac_tcpdump 1

3. Tcpdump capture file will appear in this location:

/sdcard/recording/net.pcap

- 4. After running Tcpdump, reproduce the issue.
- 5. Execute the following command from your PC command prompt (cmd):

scp -r admin@%devicelp%:/sdcard/recording/ %FolderOnPc%

Getting Information about Phones

Network administrators can get information about phones using AudioCodes' SSH protocol based Android Phone Utility.

> To get information about the phone:

- Open the Android Phone Utility (see Android Phone Utility on page 105 for more information about the application), enter the phone's IP address, click the adjacent SSH Connect button and browse to a folder on the PC to which to send the information.
- 2. Click the Get Version button.

Reboot Factory Default	Sign-Out Load Certs Configuration load	Run script Sign-in
Get Version Get Logs	Start Syslog Stop Syslog Screen Capture	Screen Record Start DSP Record Stop DSP Record Tcpdump 30€
PC IP Address:	10.13.2.147	
Syslog UDP port:	514	
	//netapp1/Documentation/Shared_Doc/Mike Dub	Browse
http serving on port 8000 Connected to: 10.16.2.50 IPP Firmware Version: 1.1 Microsoft Teams Name: 1- Microsoft Company Portal	149/1.0.96.2022072103	
Microsoft Admin Name: 1.		
Microsoft Partner Name: 1	•	
<		

- **3.** View the information in the pane.
- 4. Alternatively:
 - To get *firmware information*, in the 'Command' field enter the following and then click **Send**:

getprop ro.build.id

• To get *Bootloader information* using SSH protocol, in the utility's 'Command' field enter the following and then click **Send**:

getprop ro.bootloader

• To get *DSP information* using SSH protocol, in the utility's 'Command' field enter the following and then click **Send**:

getprop ro.ac.dsp_version

• To get the *Microsoft Teams version* using SSH protocol, in the utility's 'Command' field enter the following and then click **Send**:

getprop ro.teams.version

• To get the *Microsoft Company Portal version* using SSH protocol, in the utility's 'Command' field enter the following and then click **Send**:

getprop ro.portal.version

• To get the *Microsoft Admin version* using SSH protocol, in the utility's 'Command' field enter the following and then click **Send**:

getprop ro.agent.version

Remote Logging (Syslog)

Remote Logging via Syslog provides the same log level as Device Diagnostics (performed via the Microsoft Admin Center) with some additional information that may be relevant to device issues (not Teams application issues). Device Diagnostics via the Microsoft Admin Center are saved to the device sdcard and collected after the event. When performing Remote Logging via Syslog, the logs are collected in real time.

Remote Logging via Syslog can be enabled from the

- Android Phone Utility on page 105
- below
- > To enable Remote Logging via Syslog from the Android Phone Utility:
- 1. In the Android Phone Utility (see Android Phone Utility on page 105 for more information), enter the phone's IP address, click **SSH Connect** and browse to a folder on the PC to which to send the information.
- 2. In the 'PC IP Address' field, enter the IP address of the PC on which the utility is installed and then click the **Start Syslog** button.



- **3.** Open the folder on the PC to which you commanded the application to send the information, and then locate the Syslog file.
- To view Syslog, you can optionally download the Syslog Viewer available in AudioCodes' website.

Utility Name	Latest Version	Windows	MacOS	Linux	Other	Win32
Syslog Viewer	<u>1.78</u>	Download	Download	Download		Download
INI Viewer & Editor	1.13	Download	Download	Download		
SBC Configuration Wizard	2.28	Download				
Templates Pack (*)	2.55				Download	
Configuration Builder	1.1	Download				
Stack Manager	2.7.1			Download		
PII Log Scrubber	1.5	Download	Download	Download		Download
Notes: (*) Templates Pack is part of the S need to download it manually.	BC Configuration Wizar	d. Latest version of the T	emplate Pack is automa	tically downloaded durin	g Wizard startup, therefo	re there is typically no

> To enable Remote Logging via Syslog from the phone:

- **1.** Log in to the phone as Administrator and go back.
- 2. In the 'Device administration' screen, select Debugging.

3. Select Remote logging.

Log settings
Remote Logging
Diagnostic Data
Reset configuration
Restart Teams app
Company portal login

4. Configure the 'Remote IP address' and 'Remote port' and enable 'Remote Logging'; the device starts sending logs to the Syslog server.



Network administrators can also enable Syslog using Secure Shell (SSH) protocol.

> To enable Syslog using SSH protocol, type the following command at the shell prompt:

setprop persist.ac.rl_address <syslog_server_ip>:<port>.

> To disable Syslog using SSH, type the following command at the shell prompt:

setprop persist.ac.rl_address ""

Getting Diagnostics

Network administrators can get diagnostics to facilitate debugging.

Network administrators who need to get diagnostics from the device can dump the logs to the phone's Secure Digital (SD) Card and then later collect them using Secure Copy Protocol (SCP) based on Secure Shell (SSH) protocol. Whenever an issue occurs, the administrator can dump the logs into the SD Card.

> To get diagnostics:

- 1. Log in to the phone as an Admin user
- 2. Open the Debugging screen (Device Administration > Debugging).

Log settings
Remote Logging
Diagnostic Data
Reset configuration
Restart Teams app
Company portal login
Debug Recording
Switch to Teams Compatible
Factory data reset
ADB
Screen Capture

3. Select the Diagnostic Data option.

Diagnostic Data		
Copy logs to sdcard?		
	CANCEL	ОК
	OANOLL	ÖN

4. Select OK to confirm.

Debugging	
Log settings	
Remote Logging	
Diagnostic Data	
Reset configuration	
Restart Teams app	Copy diagnostic logs to SDCARD
Company portal login	

- 5. Wait until the screen shown in the preceding figure disappears; the phone creates all necessary logs and copies them to the its SD Card / Logs folder.
- 6. Get the logs using SCP notation as follows:

scp -r admin@host_IP:/sdcard/logs/ .

Following are the relevant logs (version and ID may be different to those shown here):

- ✓ dmesg.log
- upstate-TEAMS_1.3.16-undated.txt
- dumpstate_log-undated-2569.txt
- logcat.log

Activating DSP Recording

Network administrators can activate DSP recording using AudioCodes' SSH protocol based Android Phone Utility.

> To activate DSP Recording:

- In the AudioCodes Android Phone Utility (see Android Phone Utility on page 105 for more information about the application), enter the phone's IP address, click SSH Connect and then click the Browse button next to the field 'PC folder' to configure a folder on the PC to which to send the information.
- 2. In the 'PC IP Address' field, enter the IP address of the PC on which the utility is installed and then click the **Start DSP Record** button.
- 3. After a period of recording, click Stop DSP Record.

Reboot Factory Default	Sign-Out Load Certs Configuration load Run script Sign-in
Get Version Get Logs	Start Syslog Stop Syslog Screen Capture Screen Record Start DSP Record Stop DSP Record Tcpdump 30 🜩
PC IP Address:	10.13.2.147
Syslog UDP port:	514
PC folder	//netapp1/Documentation/Shared_Doc/Mike Dubl Browse
http serving on port 8000 Connected to: 10.16.2.50 DSP Recording started DSP Recording stopped	

4. View the DSP recording in the PC folder you configured.

Network administrators can alternatively activate a DSP recording using SSH protocol *without* the Android Phone Utility, as shown next.

To activate DSP recording using SSH protocol without the utility, type the following at the shell prompt:

setprop ac.dr_voice_enable true
setprop ac.dr_ipaddr <ip_address>
setprop ac.dr_port 50000

DSP recording can be activated on the fly without requiring the network administrator to reset the phone.

Deactivating DSP Recording

Network administrators can deactivate DSP recording using AudioCodes' SSH protocol based Android Phone Utility.

To deactivate DSP Recording:

 In the utility (see Android Phone Utility on page 105 for more information about the application), click Stop DSP Record after a period of recording (see Activating DSP Recording on the previous page for information on how to start DSP recording).

Reboot Factory Default	Sign-Out Load Certs Configuration load Run script Sign-in
Get Version Get Logs	Start Syslog Stop Syslog Screen Capture Screen Record Start DSP Record Stop DSP Record Tcpdump 30+
PC IP Address:	10.13.2.147
Syslog UDP port:	514
PC folder	//netapp1/Documentation/Shared_Doc/Mike Dubi Browse
http serving on port 8000 Connected to: 10.16.2.50 DSP Recording started DSP Recording stopped	

2. View the DSP recording in the PC folder you configured when Activating DSP Recording on the previous page.



Network administrators can alternatively deactivate a DSP recording using SSH protocol *without* the Android Phone Utility, as shown next.

To deactivate DSP recording using SSH protocol without the utility, type the following at the shell prompt:

setprop ac.dr_voice_enable false



DSP recording can be deactivated on the fly without requiring the network administrator to reset the phone.

SSH

The phone can be accessed via Secure Shell (SSH) cryptographic network protocol after the network administrator signs in.



SSH is by default disabled and can be enabled with Administrator permissions in the phone screen (Device Administration > Debugging > SSH).

To sign in, the administrator needs to know their username and password; **admin** and **1234** are the defaults. SSH access allows administrators debugging capabilities such as:

- Getting the Phone IP Address below
- Pulling files from the phone sdcard (using the curl command)
- Activating DSP Recording on page 113
- Deactivating DSP Recording on the previous page
- Installing the APK using SSH below

Getting the Phone IP Address

Network administrators can get a phone's IP address using SSH protocol.

> To get the phone's IP address using SSH protocol, type the following at the shell prompt:

ifconfig

Installing the APK using SSH

Network administrators can install the Team Android Application Package using SSH protocol.

Updating Phones using SSH Commands

To upgrade firmware:

1. Download the required firmware version to sdcard/update_image.zip.

For example, use the following:

SCP <file name> admin@<DeviceIP>:/sdcard/update_image.zip

2. Update the firmware using the following:

setprop ctl.start local_update

3. Track progress using the following:

logcat | grep update_engine_client_android

- **To upgrade the Android Package Kit (APK):**
- 1. Download the required APK to sdcard/teams.apk

For example use the following:

SCP <file name> admin@<DeviceIP>>:/sdcard/teams.apk

2. Update the APK using the following:

pm install -r -g /sdcard/<filename>

3. Delete the old APK using the following:

pm uninstall com.microsoft.skype.teams.ipphone



If the new APK is older than the existing one, delete the existing APK before installing the new one.

➤ To collect logs:

1. Collect logs using the following:

command/bugreport 1

- 2. Wait until the logs are created (see in /sdcard/logs/bugreports/ that there is a .gz file)
- **3.** Get the logs from the "/sdcard/logs/bugreports/" folder.

For example, use the following:

SCP admin@<DeviceIP>:/sdcard/logs/bugreports/<log file name> C:\<destination Directory>

> To install the Client Certificate:

- 1. Download certificates to /sdcard/devcert/
- 2. Install the certificate using the following:

setprop ctl.start sdcard_certs_install.

Microsoft Teams Admin Center

The Microsoft Teams Admin Center allows network administrators to troubleshoot issues encountered with the phone.

Collecting Logs

Network administrators can download *all logs* from the Microsoft Teams admin center. Logs that administrators can download include device diagnostics (Logcat), dumpsys, ANRs, Client Log, Call Policies File, Call Log Info File, Sky lib Log Files, Media Log Files, and CP. The logs can help debug Teams application issues and also for issues related to the device.

> To collect logs:

- **1.** Reproduce the issue.
- 2. Access Microsoft Admin Center and under the Devices tab click the Diagnostics icon.

Figure 7-4: Microsoft Teams Admin Center - Diagnostics

	Office 365 Microsoft	Teams admin center
	=	Dashboard \ Manage devices \ audiocodes-c450hd sc10155532
ଜ	Dashboard	
දීරී	Teams	audiocodes-c450hd sc10155532 Online
ଚ	Devices ^	
	Manage Devices	C User sh_OnlineAuto7
۲	Locations	Last seen Organization asset tag Mar 7, 2019, 4:13 PM -
සී	Users	Manufacturer and model OEM serial number
Ē	Meetings \lor	AudioCodes - C450HD sc10155532
Ę	Messaging policies	
ай	Analytics & reports	Details History
ŝ	Org-wide settings \sim	
S	Legacy portal 🛛	Software update status Notes
Ø	Call quality dashboard 🛛	Firmware Update
6	Firstline Worker configu 🛙	C450HD_TEAMS_0.218 Updated on Feb 27, 2019, 2:00 AM
		App Audiocodes Partner Agent 1.0.26 Updated on Feb 11, 2019, 2:00 AM

Applies to all AudioCodes phones for Microsoft Teams even though a specific model is shown in the figures here.

Click the Diagnostics icon and in the 'Device diagnostics' prompt that pops up, click Proceed; log files are retrieved from the devices and uploaded to the server.



Figure 7-5: Microsoft Teams Admin Center – Logs Upload to Server

4. Click the History tab.



	Office 365 Microsoft T	eams admin center			
	≡	Dashboard \ Manage devices \			
ඛ	Dashboard				
දීලී	Teams	1.17			
ବ	Devices \lor	D O		User	
٢	Locations	Last seen		Organization, asset tag	
දර	Users	-		- OEM serial number	
Ē	Meetings \vee	Manufacturer and model -		-	
Ę	Messaging policies				
ഷ്	Analytics & reports				
<u>ت</u>	Org-wide settings \checkmark	Details History			
S	Legacy portal 🛛				
∅	Call quality dashboard 🛛	History			
s	Firstline Worker configu 🖒	Action	Details	Modified on	Diagnostics file
		Device Diagnostics	Completed	Mar 7, 2019, 4:14 PM	Download

Click **Download** to download the logs.

 AudioCodes Device Manager's 'Collect Logs' action also includes all information collected by Microsoft Teams admin center (TAC). The .zip file includes the following files:

- ✓ Android BugReport
- AdminAgentLogs.zip includes logcat collected by the OVOC/Device Manager.
- blog files (media logs)
- Skylib-XXX.blog
- app_process32.XXX.blog
- config.cfg & status.cfg Device configuration and status
- ac_config.xml and ac_status.xml Device configuration and status for internal use.
- dmesg Diagnostic messages command useful for debugging hardwarerelated issues.
- SessionID_For_Company_Portal_Logs.txt (this is the CP SSDI, not the logs; the logs are sent to the OVOC / Device Manager server).
- See also the Device Manager Administrator's Manual.

Getting Audio Debug Recording Logs

Network administrators can opt to get Audio Debug Recording logs from the phone screen. The purpose of these logs is for issues related to media.

To enable Audio Debug Recording logs:

- 1. Log in as Administrator.
- 2. Open the Settings screen and scroll down to Debug.



3. Select **Debug** and then scroll down to **Debug Recording**.

← Debug Recording	
Remote IP address	
Remote port 50000	
Voice record Voice recording is now disabled	

4. Configure the remote IP address and port.

- 5. Enable 'Voice record'.
- 6. Start Wireshark on your PC to capture the Audio traffic.

Collecting Media Logs (*.blog) from the Phone

Network administrators can collect Media Logs (*.blog) from the phone.

To collect Media Logs (*.blog) from the phone

1. Access the phone via SSH.



SSH is by default disabled and can be enabled with Administrator permissions in the phone screen (Device Administration > Debugging > SSH).

- 2. Set the phone to the screen to capture.
- 3. Run the following command:

scp -r admin@hosp_
ip:/sdcard/android/data/com.microsoft.skype.teams.ipphone/cache/ .

Capturing Traffic Using 'rpcapd'

The 'rpcapd' (Remote Packet Capture) network sniffer application allows the network administrator to analyze and debug Android traffic on their desktop PC using the app's integral SSH server.



SSH is by default disabled and can be enabled with Administrator permissions in the phone screen (Device Administration > Debugging > SSH).

To capture traffic using 'rpcapd':

1. Open the phone's Debugging screen and switch Remote Packet Capture on.

Debug Recording	
Switch to Teams Compatible	
Factory data reset	
ADB	
Screen Capture	
Remote Packet Capture	

2. After 'rpcapd' is enabled on the phone, use Wireshark to connect with it. Follow the steps below to connect to the phone.

The Wireshark Network Analyzer											
	e Statistics Telephony	Wireless Tools H	lelp								
	🗢 🕾 주 🕹 🚍 🔳	₽, ₽, ₽, ₩									
Apply a display filter <ctrl-></ctrl->											
											_
Wireshark · Capture Interfaces										>	<
Input Output Options											
Input Output Options											
Interface	Traffic	Link-layer Header				Monite	Capture Filte	er			
Local Area Connection* 9		Ethernet	Z		2	-					
> VMware Network Adapter VMnet1 > Ethernet 4	Λ	Ethernet Ethernet	\square	default default	2	_					
Local Area Connection* 8		Ethernet	2		2	_					
> Ethernet		Ethernet	\square	default	2	_					
> Local Area Connection* 3		Ethernet	\square	default		_					
Local Area Connection* 10 > Wi-Fi		Ethernet Ethernet	$\mathbf{\nabla}$	default		_					I
 VI-FI Local Area Connection* 1 		Ethernet	\square	default default		_					
> VMware Network Adapter VMnet8		Ethernet	2	default		_					
Adapter for loopback traffic capture	e	BSD loopback	\checkmark	default		_					1
> Ethernet 6		Ethernet	\checkmark	default	2	_					1
									2		
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Enable promiscuous mode on all interfa Capture filter for selected interfaces:								•		nterfaces mpile BPFs	
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Capture filter for selected interfaces: Manage Interfaces Coal Interface	Enter a capture filter hterface /eth0 /wlan0 Hos	192.168.2.101					×		Co	mpile BPFs	
Capture filter for selected interfaces:	Enter a capture filter Interfaces /eth0 /wlan0 Hos	192.168.2.101					×		Co	mpile BPFs	
Capture filter for selected interfaces:	Enter a capture filter nterface /eth0 /wlan0 /lo Port	192.168.2.101 2002					×		Co	mpile BPFs	
Capture filter for selected interfaces:	Enter a capture filter nterface /eth0 /wlan0 /lo Port	192. 168.2. 10 1 2002					×		Co	mpile BPFs	
Capture filter for selected interfaces:	Enter a capture filter nterfaces /eth0 /wlan0 /lo Port At	thentication					×		Co	mpile BPFs	
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Capture filter for selected interfaces:	Enter a capture filter nterface /eth0 /wlan0 /lo Port	thentication	ation				×		Co	mpile BPFs	
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Capture filter for selected interfaces:	Interface	192.168.2.101 2002 uthentication) Null authentication) Password authentics sername			Port is	fixed	ddress one 2002		Co	mpile BPFs	
Capture filter for selected interfaces:	Interface	192.168.2.101 2002 uthentication Null authentication Password authentic sername root		×	Port is	fixed ord is	ddress one 2002		Co	mpile BPFs	
Capture filter for selected interfaces:	/eth0 /wlan0 /lo Port	192.168.2.101 2002 uthentication Null authentication Password authentic sername root		×	Port is	fixed ord is	× ddress one 2002 1234		Co	mpile BPFs	
Capture filter for selected interfaces:	/eth0 /wlan0 /lo Port	192.168.2.101 2002 uthentication Null authentication Password authentic sername root		×	Port is	fixed ord is	× ddress one 2002 1234		Co	mpile BPFs	

3. View all the interfaces on the phone and choose your preferred interface with which to capture packets.

Port Mirroring Network Monitoring

The phone supports the port mirroring network monitoring technique of copying and sending network packets transmitted as input from a phone port, to another port of a monitoring device for enhanced analysis and debugging capability.

> To enable the feature:

Open the phone's 'Modify network' screen (Settings > Device admin settings > Modify network) and select parameter 'Enable PC Port Mirror' to enable it if it isn't already enabled.

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