Release Notes

AudioCodes High Definition IP Phones Series

445HD, 450HD, C450HD IP Phones
RX50 Conference Phone
Huddle Room Solution (HRS)

Version 3.4.4

audiocodes

Table of Contents

List of Tables

<div style="border:1px solid #00f; padding:1em;">

Notice

Information contained in this document is believed to be accurate and reliable at the time of printing. However, due to ongoing product improvements and revisions, AudioCodes cannot guarantee accuracy of printed material after the Date Published nor can it accept responsibility for errors or omissions. Updates to this document can be downloaded from https://www.audiocodes.com/library/technical-documents.

This document is subject to change without notice.

Date Published: Jan-10-2021

</div>

WEEE EU Directive

Pursuant to the WEEE EU Directive, electronic and electrical waste must not be disposed of with unsorted waste. Please contact your local recycling authority for disposal of this product.

Customer Support

Customer technical support and services are provided by AudioCodes or by an authorized AudioCodes Service Partner. For more information on how to buy technical support for AudioCodes products and for contact information, please visit our website at https://www.audiocodes.com/services-support/maintenance-and-support.

Stay in the Loop with AudioCodes

Abbreviations and Conventions

Each abbreviation, unless widely used, is spelled out in full when first used.

Related Documentation

Document Name
445HD IP Phone User's Manual – Teams Compatible
450HD IP Phone User's Manual – Teams Compatible
C450HD IP Phone User's Manual – Teams Compatible
RX50 Conference Phone User's Manual – Teams Compatible
Huddle Room Solution User's Manual – Teams Compatible
400HD Series IP Phone Administrator's Manual – Teams Compatible
445HD IP Phone Quick Guide – Teams Compatible
450HD IP Phone Quick Guide – Teams Compatible
C450HD IP Phone Quick Guide – Teams Compatible
RX50 Conference Phone Getting Started Guide – Teams Compatible
Huddle Room Solution Quick Setup Guide – 457 – Teams Compatible
Huddle Room Solution Quick Setup Guide – 458 – Teams Compatible
http://www.audiocodes.com/products/huddle-room-solution-hrs
One Voice Operations Center User's Manual
IP Phone Manager Administrator's Manual

Documentation Feedback

AudioCodes continually strives to produce high quality documentation. If you have any comments (suggestions or errors) regarding this document, please fill out the Documentation Feedback form on our website at https://online.audiocodes.com/documentation-feedback.

1   Introduction

Version 3.4.4 is a Microsoft Teams compatible version release. These *Release Notes* describe the new features and known and resolved restraints for AudioCodes' 445HD, 450HD, C450HD IP Phones, the RX50 Conference Phone and the Huddle Room Solution.

> **Note:** Microsoft 'Teams Compatible' is supported by AudioCodes' Skype for Business devices.

1.1   Overview

These *Release Notes* describe the new features and known and resolved restraints for AudioCodes'

- 445HD, 450HD, C450HD IP Phones - Teams compatible
- RX50 Conference Phone - Teams compatible
- Huddle Room Solution (HRS) - Teams compatible

1.1.1   About the RX50 Conference Phone

The AudioCodes RX50 Conference Phone, developed in partnership with Dolby®, delivers a superior meeting room experience (RX) with outstanding audio quality in rooms of any shape or size.

Packaged in a sleek, modern design, the RX50 is impressively easy to use and manage. Leveraging advanced audio quality technology and dynamic leveling, the RX50 produces clear, natural-sounding audio regardless of acoustic challenges in the room. Quiet or distant voices are boosted, while unwanted noise is suppressed, to ensure everyone can be heard, regardless of room shape or size. The phone features a pickup range of 6m / 20ft.

Sharing the intuitive design principles used in AudioCodes IP phone devices, the RX50's touch screen user interface simplifies meeting and device management. The RX50 is fully integrated with the AudioCodes Device Manager for centralized management and monitoring by the enterprise IT team.

1.1.2   Differentiating RX50 from AudioCodes' Other Phone Models

The RX50 Conference Phone shares features with other AudioCodes phone models but is also unique in a number of respects.

Similarly to AudioCodes' Huddle Room Solution (HRS), the RX50 functions as a shared space device but:

- Device Lock is disabled by default
- The User cannot sign out; only Admin can sign out
- The Call Forward feature is removed
- The Missed Calls notification is missing in the main screen though if an enterprise wants it, it can be configured as a Programmable Key.
- Boss-Admin is currently not supported
- VVM / Voice Mail is currently not supported
- Better Together over Ethernet (BToE) is currently not supported

1.1.3 About AudioCodes' 400HD Series of Teams-Compatible IP Phones

AudioCodes' 400HD Series of Teams-compatible IP phones offer enhanced voice quality and clarity for users of Microsoft Unified Communications. The phones' wide range of essential business features, reliability and certified interoperability make them the perfect choice for any Teams-compatible deployment, from small businesses up to large multi-site enterprises.

AudioCodes is a leading Microsoft partner with a complete offering of voice-enabling solutions for the Microsoft Teams-compatible market. In addition to IP phones, AudioCodes' portfolio for Microsoft Teams-compatible includes Media Gateways, Survivable Branch Appliances (SBA), Enterprise Session Border Controllers (E-SBCs), and Call Recording.

1.2 400HD Series IP Phones Specifications

The table below summarizes the specifications of AudioCodes' 400HD Series IP Phones for Microsoft Teams-compatible.

Table 1-1: Specifications

Feature	Details
VoIP Signaling Protocols	▪ SIP: RFC 3261, RFC 2327 (SDP)
Data Protocols	▪ IPv4, TCP, UDP, ICMP, ARP, DNS and DNS SRV for SIP Signaling ▪ SIP over TLS (SIPS) ▪ 802.1x ▪ 802.1p/Q for Traffic Priority and QoS ▪ VLAN Discovery Mechanism (CDP, LLDP) ▪ ToS (Type of Service) field, indicating desired QoS DHCP Client ▪ NTP Client ▪ Microsoft Teams Compatible (previously Skype for Business) ▪ MS-ICE2 ▪ SHA2 - Open SSL 1.0.1 integrated with TLS 1.2, supporting SHA256, replaced the previous OpenSSL 0.9.8 and TLS 1.0 stacks to comply with Microsoft Teams compatible security requirements ▪ OpenSSL 1.0.1m, supporting SHA2 algorithms ▪ OVR (One Voice Resiliency) ▪ Wi-Fi (445HD and C450HD): Single band 2.4GHz, Dual Band 5GHz (C450HD only), 802.11b/g/n ▪ Wideband audio support for Bluetooth headsets (Beta)
Media Processing	▪ Voice Coders: G.711, G.723.1 (all except RX50), G.729A/B (all except RX50), G.722 8000 / G.722 16000), SILK 8000/SILK 16000 (445HD, 450HD, C450HD and HRS), LN. ▪ Acoustic Echo Cancelation ▪ Adaptive Jitter Buffer 300 msec ▪ Voice Activity Detection ▪ Comfort Noise Generation (RX50 is supported for G.729 but not for G.711 and G.722) ▪ Packet Loss Concealment ▪ RTP/RTCP Packetization (RFC 3550, RFC 3551), SRTP (RFC 3711) ▪ DTMF Relay (RFC 2833)
Telephony Features	▪ Multiple BLF presence ▪ Busy on Busy

Feature	Details

	▪ Call Park (phone can park up to 5 calls to a parking lot)
	▪ Group Call Pickup
	▪ Call Hold / Un-Hold
	▪ Call Transfer; the TRANSFER key's functionality (Blind Transfer) can be changed to Consultative Transfer.
	▪ Multi-Party Teams Compatible Remote Conferencing utilizing CCCP (Centralized Conference Control Protocol)
	▪ Redial (all devices are supported except RX50)
	▪ Caller ID Notification
	▪ Call Waiting Indication, including Caller ID
	▪ Message Waiting Indication (including MWI LED) (all devices are supported except RX50)
	▪ Local and Corporate Directories
	▪ T9 predictive text for Corporate Directory search (all devices are supported except RX50)
	▪ Automatic Answering (Alert-Info header and "talk" event)
	▪ Automatic On-hook Dialing (all devices are supported except RX50)
	▪ Call Logs: Missed/Received Calls and Dialed Numbers
	▪ Speed Dials
	▪ Boss Admin (not supported on HRS and RX50)
	▪ URL Dialing
	▪ Call Forward (Do not forward, Forward to voice mail, Forward to a number) (all devices are supported except RX50)
	▪ Dial plan (supports normalization rules downloaded from the Skype for Business server via in-band provisioning)
	▪ Paging w/without Barge-in. Configurability of special keys as paging group dials. (All devices are supported except HRS and RX50).
	▪ Better Together over Ethernet (BToE) compatible with Microsoft Teams. (All devices are supported except HRS and RX50).
	  ✔ Automatically pairing the phone with the PC/laptop based Skype for Business client.
	  ✔ Video calls: Voice routed to phone; phone performs as a USB device.
	  ✔ Switching audio devices (when automatic pairing).
	▪ Voicemail (including capability to secure user access with PIN code) (all devices are supported except RX50)
	▪ Visual Voice Mail (all devices are supported except RX50)
	▪ Integration with Microsoft Exchange Server (Calendar), including meeting reminders
	▪ Automatic device lock
	▪ Handles up to 8 concurrent calls (450HD)
	▪ Merge option: Two separate calls can be merged into one conference
	▪ Integrated Skype for Business "Favorites"
	▪ Location service
	▪ Emergency dial (911 service, etc.)
	▪ HotDesk
	▪ Call Log is synchronized
	▪ Power Saving mode (450HD) Backlight Timeout (all other phones when online)

Feature	Details
	▪ Malicious call tracing
	▪ Voice Quality Check
	▪ Screen themes (450HD)
Configuration / Management	▪ Device update: Skype for Business server updates the phone's firmware version if different
	▪ Quality of Experience (QoE) reports sent to Microsoft's SQL server (currently not supported in RX50)
	▪ Phone User Interface Language Support (Various Languages)
	▪ Web-based Management (HTTP/HTTPS) with fully integrated login
	▪ One Voice Operations Center (OVOC) module Device Manager Pro | Express
	▪ Auto-Provisioning (via TFTP, FTP, HTTP, and HTTPS) for firmware and proprietary configuration file upgrade
	▪ In-Band Provisioning
	▪ DHCP options (66, 67, and 160) for auto-provisioning
	▪ DHCP options (120, 60, and 77) for device information
	▪ DHCP option (42 or 4) for the NTP server
	▪ DHCP option (43) for the URL of the Certificate Provisioning service
	▪ DHCP option (2) for the Time Zone Offset
	▪ Skype for Business Contacts
	▪ LDAP (Lightweight Directory Access Protocol)
	▪ Private Labeling Mechanism
	▪ Configuration file encryption (Entire file and individual parameters)
	▪ Access via Telnet or SSH (SSH applies to 445HD, 445HD-R, 450HD, C450HD, HRS and RX50)
Debugging Tools	▪ System Logging (Syslog)
	▪ Monitoring (Ping and Traceroute)
	▪ DSP Recording
	▪ Crash Dump
	▪ Port Mirroring
	▪ Tracing
	▪ Core Dump
	▪ Log upload to Microsoft server (certification for 3rd party Skype for Business clients)
Supported Languages [Note that on the RX50 the virtual keypad is fully supported for all languages besides Chinese and Japanese. For non-supported languages, the virtual keypad is in English.]	▪ English
	▪ Spanish
	▪ Russian
	▪ German
	▪ Ukrainian
	▪ French
	▪ Italian
	▪ Hebrew
	▪ Polish
	▪ Portuguese (displayed only if included in your Feature Key)
	▪ Korean
	▪ Finnish
	▪ Simplified Chinese

Feature	Details
	▪ Traditional Chinese ▪ Hungarian ▪ Japanese ▪ Slovak ▪ Czech ▪ Latvian (contact person information) ▪ Dutch ▪ Magyar

RX50 Hardware	▪ 4.3 inch touch screen (480x272) with an intuitive user interface.
	▪ Connectors interfaces:
	  ✔ 1 x RJ-45 ports (10/100 BaseT Ethernet) for WAN
	  ✔ 2 x HDMI ports for Satellite Microphones
	▪ Power:
	  ✔ PoE Class 3: IEEE802.3af
	▪ Keys:
	  ✔ MUTE (including LED)
	  ✔ VOLUME control keys
	▪ Speaker
	▪ Optional satellite microphone kit Room Experience Suite pickup reach by 2 meters / 6.5 feet

445HD Hardware	▪ **Color Screen** 4.3": Graphic, 480x272 resolution
	▪ **Integrated sidecar** 376x60 resolution featuring 12 programmable speed dial keys with presence monitoring (BLF)
	▪ Connectors interfaces:
	  ✔ 2 x RJ-45 ports (10/100/1000BaseT Ethernet) for WAN and LAN (GbE support)
	  ✔ RJ-9 port (jack) for headset
	  ✔ RJ-9 port (jack) for handset
	  ✔ USB interface for USB headset support
	  ✔ RJ-11 interface for DHSG
	▪ 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
	  ✔ PoE Class 2: IEEE802.3af (optional)
	▪ Keys:
	  ✔ 4 softkeys and 6 multifunction hard keys
	  ✔ VOICE MAIL message hotkey (including LED)
	  ✔ 4-way navigation button with OK key
	  ✔ MENU
	  ✔ REDIAL
	  ✔ HOLD
	  ✔ MUTE (including LED)
	  ✔ TRANSFER
	  ✔ VOLUME control key
	  ✔ HEADSET (including LED)
	  ✔ SPEAKER (including LED)

Feature	Details

445HD Headset Compatibility	▪ For a comprehensive list of supported Jabra headsets, see the Jabra Headset Compatibility Guide
	▪ For a comprehensive list of supported Plantronics headsets see http://www.plantronics.com/us/compatibility-guide/#/search/
	▪ For a comprehensive list of supported VXi products, see http://www.vxicorp.com/compatibility_guide/
	▪ Also, the following which aren't documented online yet:
	  ✔ Jabra UC-150
	  ✔ Jabra Speak 510+
	  ✔ Jabra Speak 410
	  ✔ Jabra MOTION OFFICE
	  ✔ Jabra PRO 9470
	  ✔ Jabra Evolve Series 20, 30, 40, 75, 80
	  ✔ Microsoft LX-3000
	  ✔ Plantronics C-310M
	  ✔ Plantronics C-320M
	  ✔ Plantronics HW720
	  ✔ Plantronics Blackwire Series 300, 325, 510, 520, 710
	  ✔ Jabra UC-550
	  ✔ Jabra Pro 920 EHS wireless headset
	  ✔ Jabra Pro 9450 EHS wireless headset
	▪ Supported Bluetooth speakers:
	  ✔ Jabra Speaker 510
	  ✔ Calistro 620
	▪ Supported Bluetooth headsets:
	  ✔ Jabra Evolve 65
	  ✔ Jabra Evolve 75
	  ✔ Jabra Halo Smart
	  ✔ Plantronics Explorer 10
	  ✔ Plantronics Voyager Legend
	  ✔ Plantronics Voyager 5200
	  ✔ Plantronics Voyager Focus
	  ✔ Sennheiser MB Pro 2

450HD Hardware	▪ Large (800 x 480), graphical, high-resolution, 5-inch color touch (TFT) screen with an intuitive touch-oriented user interface design.
	▪ Connectors interfaces:
	  ✔ 2 x RJ-45 ports (10/100/1000BaseT Ethernet) for WAN and LAN
	  ✔ RJ-9 port (jack) for headset
	  ✔ RJ-9 port (jack) for handset
	  ✔ USB interface for USB headset support
	  ✔ RJ-11 interface for DHSG
	▪ 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
	  ✔ PoE Class 3: IEEE802.3af (optional)
	▪ Keys:
	  ✔ 8 x softkeys
	  ✔ VOICE MAIL message hotkey (including LED)
	  ✔ 4-way navigation button with OK key
	  ✔ MENU

Feature	Details
	✔ REDIAL ✔ HOLD ✔ MUTE (including LED) ✔ TRANSFER ✔ VOLUME control key ✔ HEADSET (including LED) ▪ SPEAKER (including LED)
450HD Headset Compatibility	▪ For a comprehensive list of supported Jabra headsets, see the Jabra Headset Compatibility Guide ▪ For a comprehensive list of supported Plantronics headsets see http://www.plantronics.com/us/compatibility-guide/#/search/ ▪ For a comprehensive list of supported VXi products, see http://www.vxicorp.com/compatibility_guide/ ▪ Also, the following which aren't documented online yet: ✔ Jabra UC-150 ✔ Jabra Speak 510+ ✔ Jabra Speak 410 ✔ Jabra MOTION OFFICE ✔ Jabra PRO 9470 ✔ Jabra Evolve Series 20, 30, 40, 75, 80 ✔ Microsoft LX-3000 ✔ Plantronics C-310M ✔ Plantronics C-320M ✔ Plantronics HW720 ✔ Plantronics Blackwire Series 300, 325, 510, 520, 710 ✔ Jabra UC-550 ✔ Jabra Pro 920 EHS wireless headset ✔ Jabra Pro 9450 EHS wireless headset

C450HD Hardware	▪ Five-inch color capacitive 1280 x 720 high-resolution touch (TFT) screen
	▪ Connectors interfaces:
	✔ 2 x RJ-45 ports (10/100/1000BaseT Ethernet) for WAN and LAN
	✔ RJ-9 port (jack) for headset
	✔ RJ-9 port (jack) for handset
	✔ 2 x USB ports for headset support
	   - **USB white port** - host port
	   - **USB black port** - device port (default) but it can be configured to host port
	✔ RJ-11 interface for DHSG
	▪ 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
	✔ PoE Class 3: IEEE802.3af (optional)
	▪ Keys:
	✔ 8 x softkeys
	✔ VOICE MAIL message hotkey (including LED)
	✔ 4-way navigation button with OK key
	✔ MENU
	✔ REDIAL
	✔ HOLD
	✔ MUTE (including LED)

Feature	Details
	✓ TRANSFER ✓ VOLUME control key ✓ HEADSET (including LED) ▪ SPEAKER (including LED)

C450HD Headset Compatibility	▪ For a comprehensive list of supported Jabra headsets, see the Jabra Headset Compatibility Guide
	▪ For a comprehensive list of supported Plantronics headsets see http://www.plantronics.com/us/compatibility-guide/#/search/
	▪ For a comprehensive list of supported VXi products, see http://www.vxicorp.com/compatibility_guide/
	▪ Also, the following which aren't documented online yet:
	  ✓ Jabra UC-150
	  ✓ Jabra Speak 510+
	  ✓ Jabra Speak 410
	  ✓ Jabra MOTION OFFICE
	  ✓ Jabra PRO 9470
	  ✓ Jabra Evolve Series 20, 30, 40, 75, 80
	  ✓ Microsoft LX-3000
	  ✓ Plantronics C-310M
	  ✓ Plantronics C-320M
	  ✓ Plantronics HW720
	  ✓ Plantronics Blackwire Series 300, 325, 510, 520, 710
	  ✓ Jabra UC-550
	  ✓ Jabra Pro 920 EHS wireless headset
	  ✓ Jabra Pro 9450 EHS wireless headset
	▪ Supported Bluetooth speakers:
	  ✓ Jabra Speaker 510
	  ✓ Calistro 620
	▪ Supported Bluetooth headsets:
	  ✓ Jabra Evolve 65
	  ✓ Jabra Evolve 75
	  ✓ Jabra Halo Smart
	  ✓ Plantronics Explorer 10
	  ✓ Plantronics Voyager Legend
	  ✓ Plantronics Voyager 5200
	  ✓ Plantronics Voyager Focus
	  ✓ Sennheiser MB Pro 2

HRS Hardware	▪ Large (800 x 480), graphical, high-resolution, 5-inch color touch (TFT) screen with an intuitive touch-oriented user interface design.
	▪ Connectors interfaces:
	  ✓ 2 x RJ-45 ports (10/100/1000BaseT Ethernet) for WAN and LAN
	  ✓ RJ-9 port (jack) for speaker
	  ✓ RJ-9 port (jack) for handset
	  ✓ USB interface for USB speaker support
	  ✓ RJ-11 interface for DHSG
	▪ 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
	  ✓ PoE Class 2: IEEE802.3af (optional)
	▪ Keys:

Feature	Details
	✔ 8 x softkeys ✔ VOICE MAIL message hotkey (including LED) ✔ 4-way navigation button with OK key ✔ MENU ✔ REDIAL ✔ HOLD ✔ MUTE (including LED) ✔ TRANSFER ✔ VOLUME control key ✔ HEADSET (including LED) ▪ SPEAKER (including LED) ▪ HRS speaker / speakers, per the selected configuration: UC-HRS-457 or UC-HRS-458

1.3 Supported Models

The table below shows the supported AudioCodes 400HD Series models.

Note: AudioCodes' Skype for Business devices support Microsoft 'Teams Compatible'.

Table 1-2: Supported 400HD Series Models

Part Number	Product Description
UC450HDEG	Skype for Business 450HD IP Phone PoE GbE Black 2 Ethernet 10/100/1000 ports, 800x480 5'' Color Touch LCD and Power over Ethernet (PoE)
UC450HDEPSG	Skype for Business 450HD IP Phone PoE GbE and external power supply Black 2 Ethernet 10/100/1000 ports, 800x480 5'' Color Touch LCD and Power over Ethernet (PoE)
RX50	Skype for Business RX50 Conference Phone
UC445HDEG	Skype for Business 445HD IP Phone PoE GbE Black 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD, 376x60 BLF LCD featuring 12 programmable speed dial keys with presence monitoring, and Power over Ethernet (PoE)
UC445HDG-R	Skype for Business 445HD IP Phone PoE GbE Black 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD, and Power over Ethernet (PoE)
UC445HDEPSG	Skype for Business 445HD IP Phone PoE GbE and external power supply Black 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD, 376x60 BLF LCD, and Power over Ethernet (PoE)
UC445HDEPSG-R	Skype for Business 445HD IP Phone PoE GbE and external power supply Black 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD, and Power over Ethernet (PoE)
UC445HDEG-BW	Skype for Business 445HD IP Phone PoE GbE Black Wi-Fi and Bluetooth* connectivity, 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD, 376x60 BLF LCD, and Power over Ethernet (PoE). * Supported in the USA, Canada, the EU, Switzerland and Israel, Wi-Fi and Bluetooth require a specific CPN with a 'BW' suffix.
UC445HDEPSG-BW	Skype for Business 445HD IP Phone PoE GbE Black Wi-Fi and Bluetooth* connectivity, with or without an external Power Supply, 2 Ethernet 10/100/1000 ports, 18 Programmable keys, 480x272 Graphic Color LCD, 376x60 BLF LCD, and Power over Ethernet (PoE). * Supported in the USA, Canada, the EU, Switzerland and Israel, Wi-Fi and Bluetooth require a specific CPN with a 'BW' suffix.
UC450HDEG	Skype for Business 450HD IP Phone PoE GbE Black 2 Ethernet 10/100/1000 ports, 800x480 5'' Color Touch LCD and Power over Ethernet (PoE)
UC450HDEPSG	Skype for Business 450HD IP Phone PoE GbE and external power supply Black 2 Ethernet 10/100/1000 ports, 800x480 5'' Color Touch LCD and Power over Ethernet (PoE)

Part Number	Product Description
UC-C450HDEG	Skype for Business C450HD IP-Phone PoE GbE black 2 Ethernet 10/100/1000 ports, 1280x720 5" Color Touch LCD and Power over Ethernet (PoE)
UC-C450HDEG-BW	Skype for Business C450HD IP-Phone PoE GbE black with integrated BT and WiFi 2 Ethernet 10/100/1000 ports, 1280x720 5" Color Touch LCD and Power over Ethernet (PoE)
UC-C450HDEPSG	Skype for Business C450HD IP-Phone PoE GbE with an external power supply Black 2 Ethernet 10/100/1000 ports, 1280x720 5" Color Touch LCD and Power over Ethernet (PoE)
UC-C450HDEPSG-BW	Skype for Business C450HD IP-Phone PoE GbE with integrated BT and WiFi and an external power supply black 2 Ethernet 10/100/1000 ports, 1280x720 5" Color Touch LCD and Power over Ethernet (PoE)
UC-HRS-457	Skype for Business 457 Huddle Room Solution (HRS) IP Phone including one external mid-size speaker and external power supply
UC-HRS-458	Skype for Business 458 Huddle Room Solution (HRS) IP Phone including one external large-size speaker and external power supply

This page is intentionally left blank.

2   Version 3.4.4

> **Note:** Version 3.4.4 includes firmware build **3.4.4.1000.52**.

2.1.1   What's New in Version 3.4.4

Following are the new features released in Version 3.4.4:

- **C450HD phone voice quality in handsfree mode has been improved**. A new equalizer was designed to improve the quality and the gain from the C450HD phone's microphone was increased.

- The C450HD phone features capability to **upgrade the Microsoft Teams firmware directly from the Teams Compatible / Skype for Business partition**. The feature helps network administrators prepare deployed Teams Compatible phones with the latest Teams Native GA before moving to Teams Native. For detailed instructions, see the *400HD IP Phone Series Administrator's Manual Ver. 3.4.4 - Teams Compatible*, Appendix F (*Switching Devices from Teams Compatible to Teams Native Mode*).

> **Note:** As of this version, the phone validates that the Native Teams version is version 1.8.288 or later before allowing the user to switch from Teams Compatible / Skype for Business mode to Native Teams. The reason for the validation is to make sure the phone leverages the updated version that is aligned with Teams cloud.

2.1.2   Known Constraints in Version 3.4.4

Here are the constraints known to exist in Version 3.4.4

Table 2-1: Known Constraints in Version 3.4.4

Incident	Description
-	In an existing conference call, adding a user with a Teams compatible phone and a PC client results in only the PC client ringing and being added to the call.
-	The 'Unmute All' feature does not function in a Teams meeting.
-	When escalating a P2P call to a conference with a Teams compatible phone, only the conference initiator's device displays the conference Roster.
-	In the Teams-compatible phone, when a Discreet call is attempted, the 'caller' successfully establishes the 'call' but the auto answer feature on the other side isn't functioning and the user (typically, a member of the organization's security staff) must manually pick up the 'call'.
IPPUC-3050	[C450HD and 445HD Bluetooth] Voice Quality in Bluetooth: The remote party may hear clicks during a call.
IPPUC-2110	[445HD Bluetooth] In some scenarios (such as when pairing and then unpairing or when switching from Bluetooth headset to USB headset), the VoIP application may reload.
IPPUC-3555	[445HD][Multicast Paging] The phone displays an incorrect paging title.
IPPUC-3361	On rare occasions, the wrong contact picture is displayed during a call and in the Call Log.
IPPUC-1395	[C450HD and 445HD] [Wi-Fi] The Wi-Fi MAC field is not recognized as an AudioCodes known MAC. As a result, the Device Manager counts such phones as 'non AudioCodes devices' thus causing a licensing issue with the Device Manager and some Device Manager features do not function (the logo, for example, is missing).
IPPSFB-9813	[EHS headset] The VoIP application may reload in rare scenarios in which two calls are received simultaneously.
-	[RX50] MoH is currently not supported.
-	[RX50] Microsoft Device update is currently not supported.
-	[RX50] Only the default Call Progress Tones (USA standard) is currently supported.
-	[RX50] Only 20 milliseconds is currently supported for the Packetization time; do not change the default coder list.
-	[RX50] The debugging tools of TDM and network recording are currently not supported.
-	[RX50] It's advisable to restore all RX50 devices with versions earlier than 3.4.2.200 to their default settings as the layouts of some screens were subsequently modified.
IPPUC-2488	[RX50] The progress bar indicating the upgrading process is sometimes missing. Note that the upgrading process takes 18-20 minutes.
-	[RX50] [Phone Device Lock] When enabling the phone Device Lock feature, the only lock option is a complete lock; there's no option for a partial lock that allows outgoing calls, etc.
IPPUC-3011	[RX50] [Phone Device Lock] There's no **Lock** softkey to lock the phone manually.
IPPUC-3012	[RX50] [Phone Device Lock] The **Emergency** softkey should be displayed in the locked screen.
IPPUC-3187	[RX50] [Phone Device Lock] There's no **HotDesk** softkey.
-	[RX50] When changing volume while talking, audio at the far end is cut.
-	[RX50] During the start up procedure, a short click is heard on the speaker.

Incident	Description
IPPUC-3191	[RX50] After a user adds a contact to their Favorites, the option to 'un-favorite' that contact is missing.
IPPUC-3177	[RX50] When directly calling a user's voicemail, the 'digits' softkey is missing (and this preventing some advanced options like 'Press the # for more options').
IPPSFB-4052	[405HD] The Microsoft Device Update (via CAB file) is not supported in this version release.
IPPSFB-8053	Semi-Attended Transfer does not function flawlessly in this release.
IPPSFB-2080	[USB headset] Trying to disconnect / reconnect the USB headset several times may result in the phone becoming 'stuck' and may require a reboot.
IPPSFB-7169	[445HD Wi-Fi] Wi-Fi phone screens are currently available only in English.
IPPSFB-7135	[445HD Wi-Fi] When Wi-Fi is in use, BToE automatic pairing is not supported.
IPPSFB-6815	[445HD Wi-Fi] Switching between a wired and a Wi-Fi connection requires a phone reboot.
IPPSFB-8152	[C450HD, 445HD] [Wi-Fi] Provisioning using TFTP may fail due to timeout.
-	[450HD] Downgrading the phone's firmware to version 3.0.0.410.24 (released in 2016) may damage the phone. This firmware version may be the default in the Device Manager (IP Phone Manager) deployed in old CloudBond installations. If you see that this firmware version is the default, replace it with the current 450HD GA firmware version before adding 450HD phones.
IPPSFB-8477	[445HD/C450HD] QoE report modifications related to signal level are incorrect.
106161	[Boss-Admin] A user whose name starts with a small letter and who is configured as Admin, is displayed on the Boss' phone as a URI address rather than with the display name.
106517	[Multiple 440HD Boss-Admin] When there is a crossed delegation, i.e., when Admin 1 is Boss of Admin 2 and Admin 2 is Boss of Admin 1), the Boss doesn't see the call when Admin answers the call.
106254	[Multiple 440HD Boss-Admin] Retrieving a parked call 'On behalf' doesn't appear on the sidecar. If the call is not parked, there is no issue.
105852	[BToE] In the scenarios listed below, the phone performs as a PC playback device and not as a standalone phone. Some call management capabilities consequently go missing, e.g., hold, transfer, conference roster screen. In these scenarios, a regular call may start similarly to a video call, i.e., the phone is used as the PC playback device. Example scenarios: ▪ RGS/Delegate call made 'on behalf' from the PC client ▪ Call from IM (Instance Message) that was opened before the phone was paired. This is aligned with Microsoft's BToE implementation.
106432	[BToE with Delegation] When a video call comes in to the Boss, a paired Admin phone will not ring but can accept the call. This is aligned with Microsoft's BToE implementation of video calls.
104326	['Favorites'] The phone does not retrieve Outlook contacts from on-premises Microsoft Exchange servers.
103639	[Multi-Party Remote Conferencing] When a conference is locked, the phone cannot add a user (Teams client or other certified phone) if not admitted within 15 seconds.
103927	Sometimes, the user is unable to join a Teams Meeting whose configured 'End time' has passed.
-	[BToE] BToE does not function if PC users are switched without logging off first.
-	[BToE - PC application] Windows 10 users who have the BToE PC application already installed on their PCs must uninstall it before installing the new version of the application.
104040	[BToE] When a paired user answers an incoming team-call, the phone does not present the call as a team-call.

Incident	Description
104039	[BToE] When a paired user answers a delegated call, the phone does not show that it's a delegated call.
103961	[BToE video] A paired user cannot answer a second incoming call via the Teams client when having an active video call.
103827	[BToE video] On a PC with low CPU resources, interference in the voice of a video call might be experienced.
100827	[Boss Admin] Response Group: A call initiated by Admin on Boss' behalf to Response Group cannot be picked up by Boss.
103573	[Boss-Admin in a conference scenario] The Rosters screen does not indicate if a participant is 'On behalf'.
103572	[Boss-Admin in a conference scenario] Admin can't set up a meeting on behalf of Boss.
93495	The Web interface displays some screens that are inapplicable to Skype for Business.
-	Call Log information is saved to the phone file system once every six hours. Consequently, Call Log information such as missed, received and outgoing calls may not be saved after restarting. [Only relevant if Microsoft Exchange isn't used, i.e., if a user performs a PIN sign-in or if a user is without Microsoft Exchange].
-	Voicemail is supported for Microsoft Exchange Server 2013 and later.
-	[Multiple Boss-Admin with SHARED_LINE] The phone can present up to 12 incoming calls on the phone's sidecar. Calls over and above the 13th call will not be managed on the sidecar. They will not be displayed nor will they be capable of being picked up. Even if an index on the sidecar will free up, the call will not occupy the free index. A newly free index will be occupied by the next incoming call.
-	[Multiple Boss-Admin with SHARED_LINE] The phone is currently capable of simultaneously handling up to eight calls per line (configured with the 'number_of_calls_per_line' parameter). If eight calls are concurrently managed on the phone, attempting to pick up an additional call will fail. Other phones in the group can still pick up the call.
-	[Multiple Boss-Admin with SHARED_LINE] Simultaneous configuration of this feature (the 440HD phone's 'Delegated Line' feature) and the phone's BToE feature is not supported.
-	[Multiple Boss-Admin with SHARED_LINE] Accepting, rejecting and resuming calls must be performed using the softkeys or by picking up the handset. They cannot be performed from the audio device keys – speaker/headset.
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, switching between calls displayed in the phone's sidecar, i.e., picking up calls in succession, one after the other, may cause the phone to handle some pickups incorrectly; best practice is therefore to wait five seconds between each pickup to allow the previous action to finish.
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, ending several calls too fast may cause unexpected behavior; best practice therefore is to have a 5-second delay between actions.
-	[Multiple Boss-Admin with SHARED_LINE] If two phones simultaneously try to pick up two calls held by a certain phone, one of the pickups may fail. Re-attempting to pick up will be successful.
107516	[USB headset] [Plantronics C320] Using the 'Mute' key from the USB headset is not recommended since the headset may lose synchronization with the phone. It's preferable to use the phone's mute key instead.
107485	[USB headset] [Jabra HSC016] Using the volume keys on this headset is not recommended as they send an unexpected unmute command. It's advisable to use the phone's mute key and volume up/down keys instead.

Incident	Description
-	[USB headset] [Jabra Evolve 65] The headset hook key cannot be used to accept an incoming call. Instead, the incoming call can be answered from the phone.
IPPSFB-4682	[USB headset] [Plantronics Savi W440-M] Calls can't be disconnected via the headset hook control.
-	[445HD] [Boss-Admin] Configuring a delegation deletes the speed dial from the phone screen (because it uses the same keys). Speed dial information is kept in the Device Manager Pro | Express (formerly known as the IP Phone Manager). The speed dial reappears in the phone screen when delegation is disabled.
IPPUC-3709	[Virtual Keypad] When long-pressing a key on the Virtual Keypad, the key may get stuck in long-press mode.
IPPUC-3829	[Multicast Paging] A noise may be heard during a paging call if the phone is already occupied with more than three calls in parallel.
IPPUC-3755	[RX50] Detection of Broken RTP isn't supported and as a result, a call will not be closed due to broken RTP. The capability helps with disconnected calls (disrupted audio).
IPPUC-5378	[445HD, C450HD] [Bluetooth] In some Bluetooth headsets models (mainly in Plantronics headsets), a short, annoying high-frequency tone is heard before the dial tone and sometimes even during the call.
IPPUC-4507	[Skype for Business] [BToE with Video] It's impossible to escalate video when users try it at the same time.
-	[Applies only to C450HD/445HD] An endless auto-negotiation with the Ethernet switch may occur if the phone is connected to the Power Supply and to PoE simultaneously. It's recommended to avoid connecting them simultaneously even though no damage occurs. If a Power Supply is used, users should disable the power from the ETH port.

2.1.3   Resolved Constraints in Version 3.4.4

Here are the constraints that were resolved in Version 3.4.4

Table 2-2: Resolved Constraints in Version 3.4.4

Incident	Description
IPPUC-5345	[445HD SILK] Noises are heard when the call is put on hold.
IPPUC-5752	[C450HD and C445HD] [Bluetooth] On rare occasions, no voice is heard when answering a call using the Bluetooth headset.
IPPUC-5943	[C450HD and C445HD] Bluetooth is not automatically paired after the phone is rebooted.

# 3   Previous Releases

3.1   Version 3.4.4.1000.10

⚠️ **Note:** Version 3.4.4 includes firmware build **3.4.4.1000.10**.

3.1.1   What's New in Version 3.4.4.1000.10

Following are the new features released in Version 3.4.4:

- **SILK wideband is supported on the 445HD phone**.
- The RX50 Conference Phone by default does not include a sign-in key for users. Sign-in can be performed by users with Administrator privilege (via MENU > **Admin** key).
- The RX50 Conference Phone by default includes a new **Pair** key. This key won't appear after upgrading from earlier firmware versions but will appear after restoring to the phone's default settings. The key is for the upcoming **Duo** feature.
- **Wideband audio for Bluetooth headsets** is supported as Beta. In previous releases, only narrow band audio was supported. Voice quality has consequently improved. (Applies to the C450HD and 445HD phone models).
- The phone's Expansion Module now supports **two pages and a total of 40 Functional Keys, each page displaying 20 Functional Keys (compared to 22 Functional Keys with only one page in previous releases)**. Users swipe right or left (depending on what page they're on) to transition from page to page. (Applies to the C450HD and 450HD phone models).
- The **RX50 conference phone supports Voice Quality reports** in compliance with the IETF's RFC 6035, except for the following VQ local metrics that are not provided:
    - Jitter buffer statistics
    - Burst and Gapp loss
    - Signal and noise levels
    - Voice Quality estimation
- Users can **view a Zoom meeting in the phone's Calendar** as shown in the next figure, identified by the Zoom icon
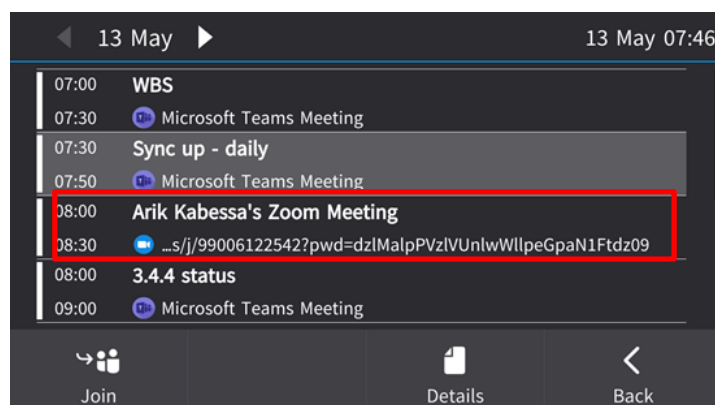
■ Users can **join a Zoom meeting** by selecting it in the phone Calendar (identified by the Zoom icon) and then selecting the **Join** softkey, as shown in the next figure. The 'Join' is performed as 'automatic dial-in'.
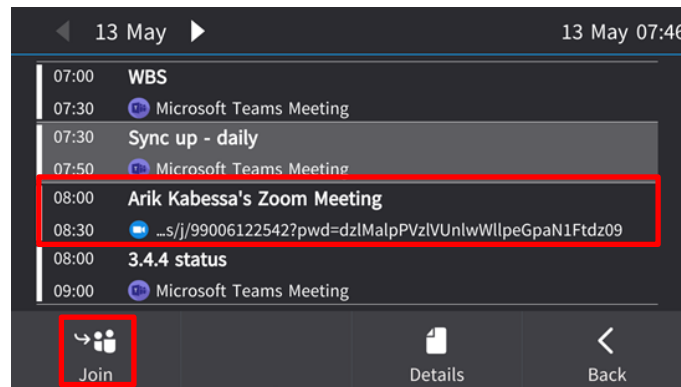
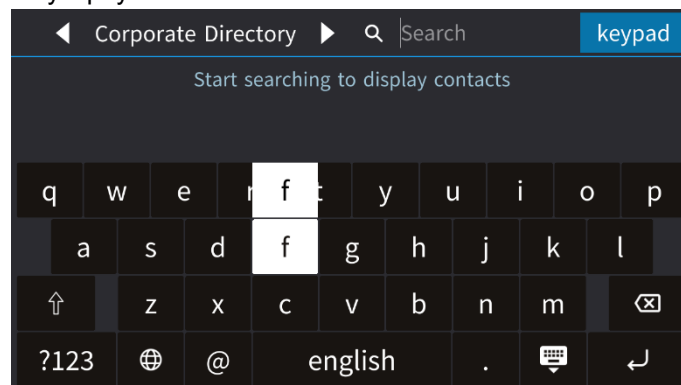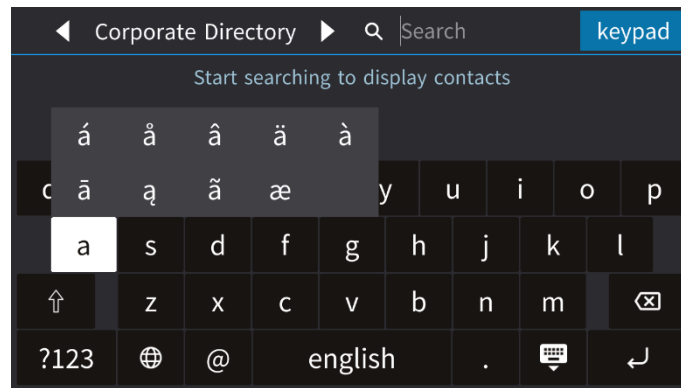■ **The Teams logo was added to the Teams meeting in the phone Calendar**:
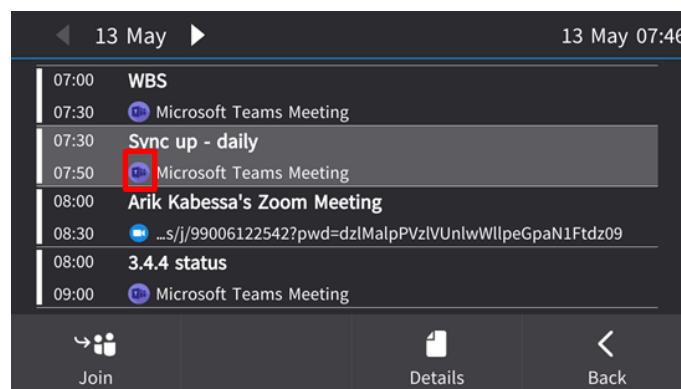
■ **The Virtual Keyboard features new capabilities**.

- When users press a key, the keyboard shows the key that was pressed in a popup above the key's physical location.

- A popup for inputting special characters into fields has been added for improved user experience.

■ A new **eye icon in the 'Password' field lets users view the password they inputted** to make sure they inputted it correctly.
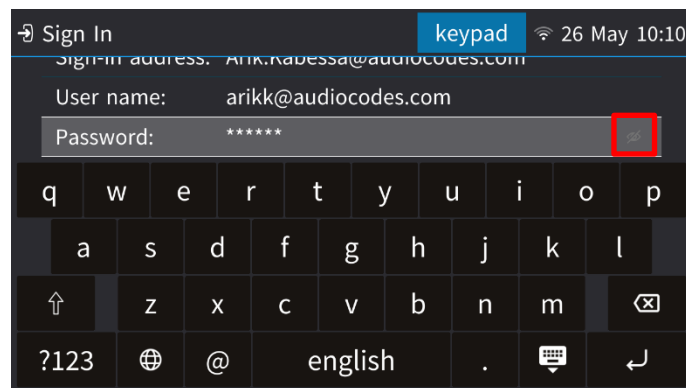
By default, the password is *masked,* and the icon is an *open* eye indicating that if the user clicks it, the password will be *unmasked* for the user to make sure their input was correct. When the password is *unmasked*, the eye icon is *struck through*.

■ **Transfer a call to a remote party with whom a call was previously established**

Allows a user to transfer a call to another person with whom a call was established, by selecting the call from a list of calls. The user can consult with any person with whom a call was established without needing to use the Consultation Transfer procedure. The feature is activated through the **Xfer** softkey. Users then press the **Menu** softkey, select **Calls** and then select the active call. The call is then transferred to the remote party with whom that call was established.
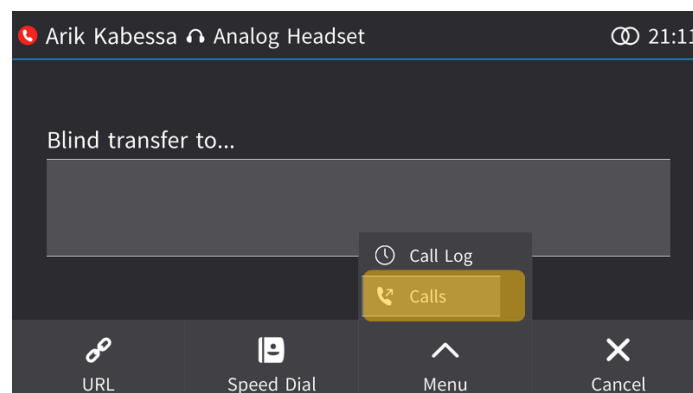
■ **Merge a call with an existing (active) call / multiple calls / all calls or with an existing (active) remote conference**. The feature is activated through the **Call Menu** softkey. The user then selects **Merge calls** and then selects the preferred option.
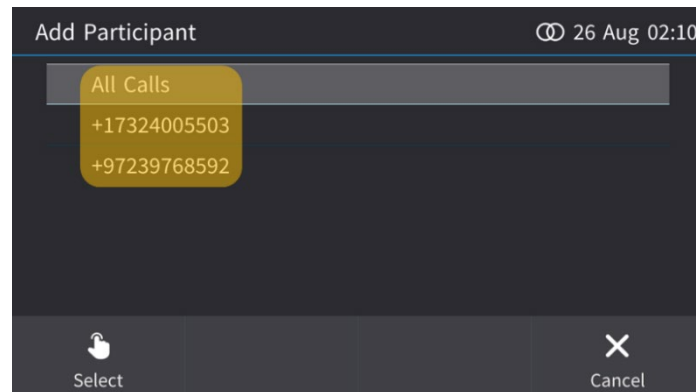
■ [450HD / C450HD] For Boss Admin configuration, a **Boss/Admin bar is displayed** so visible Programmable Keys in the idle screen are **1-6** [Indexes 0-5] and not Programmable Keys **1-3** [Indexes 0-2] and Programmable Keys **5-7** [Indexes 4-6] as in previous GA versions.

3.1.2   Known Constraints in Version 3.4.4.1000.10

Here are the constraints known to exist in Version 3.4.4

Table 3-1: Known Constraints in Version 3.4.4

Incident	Description
-	In an existing conference call, adding a user with a Teams compatible phone and a PC client results in only the PC client ringing and being added to the call.
-	The 'Unmute All' feature does not function in a Teams meeting.
-	When escalating a P2P call to a conference with a Teams compatible phone, only the conference initiator's device displays the conference Roster.
-	In the Teams-compatible phone, when a Discreet call is attempted, the 'caller' successfully establishes the 'call' but the auto answer feature on the other side isn't functioning and the user (typically, a member of the organization's security staff) must manually pick up the 'call'.
IPPUC-3050	[C450HD and 445HD Bluetooth] Voice Quality in Bluetooth: The remote party may hear clicks during a call.
IPPUC-2110	[445HD Bluetooth] In some scenarios (such as when pairing and then unpairing or when switching from Bluetooth headset to USB headset), the VoIP application may reload.
IPPUC-3555	[445HD][Multicast Paging] The phone displays an incorrect paging title.
IPPUC-3361	On rare occasions, the wrong contact picture is displayed during a call and in the Call Log.
IPPUC-1395	[C450HD and 445HD] [Wi-Fi] The Wi-Fi MAC field is not recognized as an AudioCodes known MAC. As a result, the Device Manager counts such phones as 'non AudioCodes devices' thus causing a licensing issue with the Device Manager and some Device Manager features do not function (the logo, for example, is missing).
IPPSFB-9813	[EHS headset] The VoIP application may reload in rare scenarios in which two calls are received simultaneously.
-	[RX50] MoH is currently not supported.
-	[RX50] Microsoft Device update is currently not supported.
-	[RX50] Only the default Call Progress Tones (USA standard) is currently supported.
-	[RX50] Only 20 milliseconds is currently supported for the Packetization time; do not change the default coder list.
-	[RX50] The debugging tools of TDM and network recording are currently not supported.
-	[RX50] It's advisable to restore all RX50 devices with versions earlier than 3.4.2.200 to their default settings as the layouts of some screens were subsequently modified.
IPPUC-2488	[RX50] The progress bar indicating the upgrading process is sometimes missing. Note that the upgrading process takes 18-20 minutes.
-	[RX50] [Phone Device Lock] When enabling the phone Device Lock feature, the only lock option is a complete lock; there's no option for a partial lock that allows outgoing calls, etc.
IPPUC-3011	[RX50] [Phone Device Lock] There's no **Lock** softkey to lock the phone manually.
IPPUC-3012	[RX50] [Phone Device Lock] The **Emergency** softkey should be displayed in the locked screen.
IPPUC-3187	[RX50] [Phone Device Lock] There's no **HotDesk** softkey.
-	[RX50] When changing volume while talking, audio at the far end is cut.
-	[RX50] During the start up procedure, a short click is heard on the speaker.

Incident	Description
IPPUC-3191	[RX50] After a user adds a contact to their Favorites, the option to 'un-favorite' that contact is missing.
IPPUC-3177	[RX50] When directly calling a user's voicemail, the 'digits' softkey is missing (and this preventing some advanced options like 'Press the # for more options').
IPPSFB-4052	[405HD] The Microsoft Device Update (via CAB file) is not supported in this version release.
IPPSFB-8053	Semi-Attended Transfer does not function flawlessly in this release.
IPPSFB-2080	[USB headset] Trying to disconnect / reconnect the USB headset several times may result in the phone becoming 'stuck' and may require a reboot.
IPPSFB-7169	[445HD Wi-Fi] Wi-Fi phone screens are currently available only in English.
IPPSFB-7135	[445HD Wi-Fi] When Wi-Fi is in use, BToE automatic pairing is not supported.
IPPSFB-6815	[445HD Wi-Fi] Switching between a wired and a Wi-Fi connection requires a phone reboot.
IPPSFB-8152	[C450HD, 445HD] [Wi-Fi] Provisioning using TFTP may fail due to timeout.
-	[450HD] Downgrading the phone's firmware to version 3.0.0.410.24 (released in 2016) may damage the phone. This firmware version may be the default in the Device Manager (IP Phone Manager) deployed in old CloudBond installations. If you see that this firmware version is the default, replace it with the current 450HD GA firmware version before adding 450HD phones.
IPPSFB-8477	[445HD/C450HD] QoE report modifications related to signal level are incorrect.
106161	[Boss-Admin] A user whose name starts with a small letter and who is configured as Admin, is displayed on the Boss' phone as a URI address rather than with the display name.
106517	[Multiple 440HD Boss-Admin] When there is a crossed delegation, i.e., when Admin 1 is Boss of Admin 2 and Admin 2 is Boss of Admin 1), the Boss doesn't see the call when Admin answers the call.
106254	[Multiple 440HD Boss-Admin] Retrieving a parked call 'On behalf' doesn't appear on the sidecar. If the call is not parked, there is no issue.
105852	[BToE] In the scenarios listed below, the phone performs as a PC playback device and not as a standalone phone. Some call management capabilities consequently go missing, e.g., hold, transfer, conference roster screen. In these scenarios, a regular call may start similarly to a video call, i.e., the phone is used as the PC playback device. Example scenarios: ▪ RGS/Delegate call made 'on behalf' from the PC client ▪ Call from IM (Instance Message) that was opened before the phone was paired. This is aligned with Microsoft's BToE implementation.
106432	[BToE with Delegation] When a video call comes in to the Boss, a paired Admin phone will not ring but can accept the call. This is aligned with Microsoft's BToE implementation of video calls.
104326	['Favorites'] The phone does not retrieve Outlook contacts from on-premises Microsoft Exchange servers.
103639	[Multi-Party Remote Conferencing] When a conference is locked, the phone cannot add a user (Teams client or other certified phone) if not admitted within 15 seconds.
103927	Sometimes, the user is unable to join a Teams Meeting whose configured 'End time' has passed.
-	[BToE] BToE does not function if PC users are switched without logging off first.
-	[BToE - PC application] Windows 10 users who have the BToE PC application already installed on their PCs must uninstall it before installing the new version of the application.
104040	[BToE] When a paired user answers an incoming team-call, the phone does not present the call as a team-call.

Incident	Description
104039	[BToE] When a paired user answers a delegated call, the phone does not show that it's a delegated call.
103961	[BToE video] A paired user cannot answer a second incoming call via the Teams client when having an active video call.
103827	[BToE video] On a PC with low CPU resources, interference in the voice of a video call might be experienced.
100827	[Boss Admin] Response Group: A call initiated by Admin on Boss' behalf to Response Group cannot be picked up by Boss.
103573	[Boss-Admin in a conference scenario] The Rosters screen does not indicate if a participant is 'On behalf'.
103572	[Boss-Admin in a conference scenario] Admin can't set up a meeting on behalf of Boss.
93495	The Web interface displays some screens that are inapplicable to Skype for Business.
-	Call Log information is saved to the phone file system once every six hours. Consequently, Call Log information such as missed, received and outgoing calls may not be saved after restarting. [Only relevant if Microsoft Exchange isn't used, i.e., if a user performs a PIN sign-in or if a user is without Microsoft Exchange].
-	Voicemail is supported for Microsoft Exchange Server 2013 and later.
-	[Multiple Boss-Admin with SHARED_LINE] The phone can present up to 12 incoming calls on the phone's sidecar. Calls over and above the 13th call will not be managed on the sidecar. They will not be displayed nor will they be capable of being picked up. Even if an index on the sidecar will free up, the call will not occupy the free index. A newly free index will be occupied by the next incoming call.
-	[Multiple Boss-Admin with SHARED_LINE] The phone is currently capable of simultaneously handling up to eight calls per line (configured with the 'number_of_calls_per_line' parameter). If eight calls are concurrently managed on the phone, attempting to pick up an additional call will fail. Other phones in the group can still pick up the call.
-	[Multiple Boss-Admin with SHARED_LINE] Simultaneous configuration of this feature (the 440HD phone's 'Delegated Line' feature) and the phone's BToE feature is not supported.
-	[Multiple Boss-Admin with SHARED_LINE] Accepting, rejecting and resuming calls must be performed using the softkeys or by picking up the handset. They cannot be performed from the audio device keys – speaker/headset.
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, switching between calls displayed in the phone's sidecar, i.e., picking up calls in succession, one after the other, may cause the phone to handle some pickups incorrectly; best practice is therefore to wait five seconds between each pickup to allow the previous action to finish.
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, ending several calls too fast may cause unexpected behavior; best practice therefore is to have a 5-second delay between actions.
-	[Multiple Boss-Admin with SHARED_LINE] If two phones simultaneously try to pick up two calls held by a certain phone, one of the pickups may fail. Re-attempting to pick up will be successful.
107516	[USB headset] [Plantronics C320] Using the 'Mute' key from the USB headset is not recommended since the headset may lose synchronization with the phone. It's preferable to use the phone's mute key instead.
107485	[USB headset] [Jabra HSC016] Using the volume keys on this headset is not recommended as they send an unexpected unmute command. It's advisable to use the phone's mute key and volume up/down keys instead.

Incident	Description
-	[USB headset] [Jabra Evolve 65] The headset hook key cannot be used to accept an incoming call. Instead, the incoming call can be answered from the phone.
IPPSFB-4682	[USB headset] [Plantronics Savi W440-M] Calls can't be disconnected via the headset hook control.
-	[445HD] [Boss-Admin] Configuring a delegation deletes the speed dial from the phone screen (because it uses the same keys). Speed dial information is kept in the Device Manager Pro | Express (formerly known as the IP Phone Manager). The speed dial reappears in the phone screen when delegation is disabled.
IPPUC-3709	[Virtual Keypad] When long-pressing a key on the Virtual Keypad, the key may get stuck in long-press mode.
IPPUC-3829	[Multicast Paging] A noise may be heard during a paging call if the phone is already occupied with more than three calls in parallel.
IPPUC-3755	[RX50] Detection of Broken RTP isn't supported and as a result, a call will not be closed due to broken RTP. The capability helps with disconnected calls (disrupted audio).
IPPUC-5345	[445HD SILK] Noises are heard when the call is put on hold. The issue will be fixed in the next version release.
IPPUC-5378	[445HD, C450HD] [Bluetooth] In some Bluetooth headsets models (mainly in Plantronics headsets), a short, annoying high-frequency tone is heard before the dial tone and sometimes even during the call.
IPPUC-4507	[Skype for Business] [BToE with Video] It's impossible to escalate video when users try it at the same time.
-	[Applies only to C450HD/445HD] An endless auto-negotiation with the Ethernet switch may occur if the phone is connected to the Power Supply and to PoE simultaneously. It's recommended to avoid connecting them simultaneously even though no damage occurs. If a Power Supply is used, users should disable the power from the ETH port.

3.1.3   Resolved Constraints in Version 3.4.4.1000.10

Here are the constraints that were resolved in Version 3.4.4

Table 3-2: Resolved Constraints in Version 3.4.4

Incident	Description
IPPUC-5030	In some environments, an incoming call is disconnected due to wrong usage of TURN (Traversal Using Relays around NAT) server credentials.
IPPSFB-10003	The phone is unable to register after a Skype for Business certificate upgrade.
IPPUC-3185	[Teams Compatible] A Federated Teams user (compatible) fails to join a Teams meeting when an Admit is needed but successfully joins on the second attempt..
IPPUC-4120	[Teams Compatible] In some environments, the phone fails to add a fourth party to a conference call.
IPPUC-3198	[Teams Compatible] In a Teams-compatible environment, Teams meetings calls are disconnected after ~1 hour.
IPPUC-4462, IPPUC-3936	The phone does not follow the HTTP response `301/302 Moved Permanently` from a provisioning server and as a result, does not start the provisioning process.
IPPUC-4121	[Teams Compatible - Direct Routing] On rare occasions, the phone fails to establish a basic call and the phone screen shows a 'Connecting…' message [1:10].
IPPUC-5201	The phone is unable to play a customized MoH file.
IPPUC-5238	Long-pressing the **Clear** softkey does not function in the 'Static IP' screen.
IPPUC-4442	[Wi-Fi] On some occasions, it's necessary to refresh the access points list to see the available access points.
IPPUC-1652	[Wi-Fi] Users can't disable/enable the Wi-Fi network from the Web interface.
IPPSFB-10024	[Wi-Fi] The Wi-Fi Protected Setup (WPS) PIN length is too long.
IPPUC-3866	[RX50, C450HD, 450HD] if one of the phone's softkeys is pressed for a prolonged period of time, the softkey remains bold.
IPPUC-4561	[Skype for Business On-Premises] If a Call Park scenario is followed up with a conference call, the conference call unexpectedly disconnects.
IPPUC-3483	[Device Lock] When the phone is configured to allow both incoming and outgoing calls, a call via speed dial initiates a call but does not prompt the user to unlock the phone first.
IPPUC-3171	The uppermost part of the Contacts menu list is sometimes displayed eclipsing the status bar.
IPPUC-3254	[Virtual Keyboard] A prolonged press on the 'backspace' to partially delete a string from the middle to the start of the string, deletes the whole string.
IPPUC-1628	[Call log] The phone wrongly merges two discontinuous calls into one call.
-	The Teams compatible phone cannot transfer (any Transfer type) an internal call to PSTN when using an SBC working with Direct Routing.

3.2 Version 3.4.3

> ⚠️ **Note:** Version 3.4.3 includes firmware build **3.4.3.19.65**.

3.2.1 What's New in Version 3.4.3

- An option has been added to **call voice mail directly** instead of using visual voice mail (VVM). By setting the configuration file parameter 'personal_settings/voice_mail/visual_voice_mail/enabled' to **0**, VVM is disabled and the user can dial directly to their voice mail without needing to check the voice mail status (the present number of unread messages, info about each voice message, etc.).

- **A new warning is displayed when the phone identifies that the user's authentication credentials were changed.** The warning helps the user understand they must sign out and then sign in again with correct new credentials. When the phone gets the relevant notification from the server, the phone displays the following message: "Your username or password is incorrect, please sign out and sign in again".

3.2.2   Known Constraints in Version 3.4.3

Here are the constraints known to exist in Version 3.4.3

Table 3-3: Known Constraints in Version 3.4.3

Incident	Description
IPPUC-3185	A Federated Teams user (compatible) fails to join a Teams meeting when an Admit is needed but successfully joins on the second attempt.
IPPUC-3198	In a Teams-compatible environment, Teams meetings calls are disconnected after ~1 hour. To prevent this, set the following two parameters to 0: ▪ /voip/signalling/sip/session_timer ▪ /voip/signalling/sip/min_session_interval
-	In an existing conference call, adding a user with a Teams compatible phone and a PC client results in only the PC client ringing and being added to the call.
-	The Teams compatible phone cannot transfer (any Transfer type) an internal call to PSTN when using an SBC working with Direct Routing.
-	The 'Unmute All' feature does not function in a Teams meeting.
-	When escalating a P2P call to a conference with a Teams compatible phone, only the conference initiator's device displays the conference Roster.
-	In the Teams-compatible phone, when a Discreet call is attempted, the 'caller' successfully establishes the 'call' but the auto answer feature on the other side isn't functioning and the user (typically, a member of the organization's security staff) must manually pick up the 'call'.
IPPUC-3050	[C450HD and 445HD Bluetooth] Voice Quality in Bluetooth: The remote party may hear clicks during a call.
IPPUC-2110	[445HD Bluetooth] In some scenarios (such as when pairing and then unpairing or when switching from Bluetooth headset to USB headset), the VoIP application may reload.
IPPUC-3171	[450HD, C450HD and RX50] The upper name in the Contacts list may be displayed cut off when searching for contacts using the virtual keypad.
IPPUC-3555	[445HD][Multicast Paging] The phone displays an incorrect paging title.
IPPUC-3361	On rare occasions, the wrong contact picture is displayed during a call and in the Call Log.
IPPUC-1395	[C450HD and 445HD] [Wi-Fi] The Wi-Fi MAC field is not recognized as an AudioCodes known MAC. As a result, the Device Manager counts such phones as 'non AudioCodes devices' thus causing a licensing issue with the Device Manager and some Device Manager features do not function (the logo, for example, is missing).
IPPSFB-9813	[EHS headset] The VoIP application may reload in rare scenarios in which two calls are received simultaneously.
-	[RX50] QoE is currently not supported.
-	[RX50] MoH is currently not supported.
-	[RX50] Microsoft Device update is currently not supported.
-	[RX50] Only the default Call Progress Tones (USA standard) is currently supported.
-	[RX50] Only 20 milliseconds is currently supported for the Packetization time; do not change the default coder list.
-	[RX50] The debugging tools of TDM and network recording are currently not supported.
-	[RX50] It's advisable to restore all RX50 devices with versions earlier than 3.4.2.200 to their default settings as the layouts of some screens were subsequently modified.

Incident	Description
IPPUC-2488	[RX50] The progress bar indicating the upgrading process is sometimes missing. Note that the upgrading process takes 18-20 minutes.
-	[RX50] [Phone Device Lock] When enabling the phone Device Lock feature, the only lock option is a complete lock; there's no option for a partial lock that allows outgoing calls, etc.
IPPUC-3011	[RX50] [Phone Device Lock] There's no **Lock** softkey to lock the phone manually.
IPPUC-3012	[RX50] [Phone Device Lock] The **Emergency** softkey should be displayed in the locked screen.
IPPUC-3187	[RX50] [Phone Device Lock] There's no **HotDesk** softkey.
-	[RX50] When changing volume while talking, audio at the far end is cut.
-	[RX50] During the start up procedure, a short click is heard on the speaker.
IPPUC-3191	[RX50] After a user adds a contact to their Favorites, the option to 'un-favorite' that contact is missing.
IPPUC-3177	[RX50] When directly calling a user's voicemail, the 'digits' softkey is missing (and this preventing some advanced options like 'Press the # for more options').
IPPSFB-4052	[405HD] The Microsoft Device Update (via CAB file) is not supported in this version release.
IPPSFB-8053	Semi-Attended Transfer does not function flawlessly in this release.
IPPSFB-2080	[USB headset] Trying to disconnect / reconnect the USB headset several times may result in the phone becoming 'stuck' and may require a reboot.
IPPSFB-7169	[445HD Wi-Fi] Wi-Fi phone screens are currently available only in English.
IPPSFB-7135	[445HD Wi-Fi] When Wi-Fi is in use, BToE automatic pairing is not supported.
IPPSFB-6815	[445HD Wi-Fi] Switching between a wired and a Wi-Fi connection requires a phone reboot.
IPPSFB-8152	[C450HD, 445HD] [Wi-Fi] Provisioning using TFTP may fail due to timeout.
-	[450HD] Downgrading the phone's firmware to version 3.0.0.410.24 (released in 2016) may damage the phone. This firmware version may be the default in the Device Manager (IP Phone Manager) deployed in old CloudBond installations. If you see that this firmware version is the default, replace it with the current 450HD GA firmware version before adding 450HD phones.
IPPSFB-8477	[445HD/C450HD] QoE report modifications related to signal level are incorrect.
106161	[Boss-Admin] A Skype for Business user whose name starts with a small letter and who is configured as Admin, is displayed on the Boss' phone as a URI address rather than with the display name.
106517	[Multiple 440HD Boss-Admin] When there is a crossed delegation, i.e., when Admin 1 is Boss of Admin 2 and Admin 2 is Boss of Admin 1), the Boss doesn't see the call when Admin answers the call.
106254	[Multiple 440HD Boss-Admin] Retrieving a parked call 'On behalf' doesn't appear on the sidecar. If the call is not parked, there is no issue.
105852	[BToE] In the scenarios listed below, the phone performs as a PC playback device and not as a standalone phone. Some call management capabilities consequently go missing, e.g., hold, transfer, conference roster screen. In these scenarios, a regular call may start similarly to a video call, i.e., the phone is used as the PC playback device. Example scenarios: ▪ RGS/Delegate call made 'on behalf' from the PC client ▪ Call from IM (Instance Message) that was opened before the phone was paired. This is aligned with Microsoft's BToE implementation.
106432	[BToE with Delegation] When a video call comes in to the Boss, a paired Admin phone will not ring but can accept the call. This is aligned with Microsoft's BToE implementation of video calls.

Incident	Description
104326	[Skype for Business 'Favorites'] The phone does not retrieve Outlook contacts from on-premises Microsoft Exchange servers.
103639	[Multi-Party Skype for Business Remote Conferencing] When a conference is locked, the phone cannot add a user (Skype for Business client or other certified phone) if not admitted within 15 seconds.
103927	Sometimes, the user is unable to join a Skype for Business meeting whose configured 'End time' has passed.
-	[BToE] BToE does not function if PC users are switched without logging off first.
-	[BToE - PC application] Windows 10 users who have the BToE PC application already installed on their PCs must uninstall it before installing the new version of the application.
104040	[BToE] When a paired user answers an incoming team-call, the phone does not present the call as a team-call.
104039	[BToE] When a paired user answers a delegated call, the phone does not show that it's a delegated call.
103961	[BToE video] A paired user cannot answer a second incoming call via the Skype for Business client when having an active video call.
103827	[BToE video] On a PC with low CPU resources, interference in the voice of a video call might be experienced.
100827	[Boss Admin] Response Group: A call initiated by Admin on Boss' behalf to Response Group cannot be picked up by Boss.
103573	[Boss-Admin in a conference scenario] The Rosters screen does not indicate if a participant is 'On behalf'.
103572	[Boss-Admin in a conference scenario] Admin can't set up a meeting on behalf of Boss.
93495	The Web interface displays some screens that are inapplicable to Skype for Business.
-	Call Log information is saved to the phone file system once every six hours. Consequently, Call Log information such as missed, received and outgoing calls may not be saved after restarting. [Only relevant if Microsoft Exchange isn't used, i.e., if a user performs a PIN sign-in or if a user is without Microsoft Exchange].
-	Voicemail is supported for Microsoft Exchange Server 2013 and later.
-	[Multiple Boss-Admin with SHARED_LINE] The phone can present up to 12 incoming calls on the phone's sidecar. Calls over and above the 13th call will not be managed on the sidecar. They will not be displayed nor will they be capable of being picked up. Even if an index on the sidecar will free up, the call will not occupy the free index. A newly free index will be occupied by the next incoming call.
-	[Multiple Boss-Admin with SHARED_LINE] The phone is currently capable of simultaneously handling up to eight calls per line (configured with the 'number_of_calls_per_line' parameter). If eight calls are concurrently managed on the phone, attempting to pick up an additional call will fail. Other phones in the group can still pick up the call.
-	[Multiple Boss-Admin with SHARED_LINE] Simultaneous configuration of this feature (the 440HD phone's 'Delegated Line' feature) and the phone's BToE feature is not supported.
-	[Multiple Boss-Admin with SHARED_LINE] Accepting, rejecting and resuming calls must be performed using the softkeys or by picking up the handset. They cannot be performed from the audio device keys – speaker/headset.

Incident	Description
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, switching between calls displayed in the phone's sidecar, i.e., picking up calls in succession, one after the other, may cause the phone to handle some pickups incorrectly; best practice is therefore to wait five seconds between each pickup to allow the previous action to finish.
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, ending several calls too fast may cause unexpected behavior; best practice therefore is to have a 5-second delay between actions.
-	[Multiple Boss-Admin with SHARED_LINE] If two phones simultaneously try to pick up two calls held by a certain phone, one of the pickups may fail. Re-attempting to pick up will be successful.
107516	[USB headset] [Plantronics C320] Using the 'Mute' key from the USB headset is not recommended since the headset may lose synchronization with the phone. It's preferable to use the phone's mute key instead.
107485	[USB headset] [Jabra HSC016] Using the volume keys on this headset is not recommended as they send an unexpected unmute command. It's advisable to use the phone's mute key and volume up/down keys instead.
-	[USB headset] [Jabra Evolve 65] The headset hook key cannot be used to accept an incoming call. Instead, the incoming call can be answered from the phone.
IPPSFB-4682	[USB headset] [Plantronics Savi W440-M] Calls can't be disconnected via the headset hook control.
-	[430HD/440HD/445HD] [Boss-Admin] Configuring a delegation deletes the speed dial from the phone screen (because it uses the same keys). Speed dial information is kept in the Device Manager Pro | Express (formerly known as the IP Phone Manager). The speed dial reappears in the phone screen when delegation is disabled.
IPPUC-3709	[Virtual Keypad] When long-pressing a key on the Virtual Keypad, the key may get stuck in long-press mode.
IPPUC-3829	[Multicast Paging] A noise may be heard during a paging call if the phone is already occupied with more than three calls in parallel.
IPPUC-3755	[RX50] Detection of Broken RTP isn't supported and as a result, a call will not be closed due to broken RTP. The capability helps with disconnected calls (disrupted audio).

3.2.3   Resolved Constraints in Version 3.4.3

Here are the constraints that were resolved in Version 3.4.3

Table 3-4: Resolved Constraints in Version 3.4.3

Incident	Description
IPPUC-1395	[Wi-Fi] The MAC address field in the Device Manager keep-alive should be AudioCodes' MAC address.
IPPUC-4567 IPPUC-4600	The input gain (the gain towards the remote direction) is too low.
IPPUC-4413	[RX50] Incorrect DTMF generation during an active call prevents using the IVR.
IPPUC-4607	Sometimes, the phone fails to complete calls to the IVR. DTMF doesn't function.
IPPSFB-9991	Call Transfer doesn't function from the Skype for Business client when using a third party plugin for the transfer called FonComfort.
IPPSFB-9889	[445HD] In some environments, Skype for Business contact photos are displaying the photo of the wrong user
IPPUC-4075	[802.1X] The phone parameter 'network/lan/_802_1x/eap_identity' should be renamed 'network/lan/_802_1x/tls_identity'.
IPPUC-4380	[Teams Compatible] On rare occasions, calls are established without voice.
IPPUC-4619	[445HD, Boss Admin] On the Admin phone, the call number in the Boss's Programmable Key disappears after the Boss gets a call and answers it.

3.3 Version 3.4.3

> ⚠️ **Note:** Version 3.4.3 includes firmware build **3.4.3.18.70**.

3.3.1 What's New in Version 3.4.3

■ **Paging can be performed during call hold, during an ongoing call and during call park**. To use this new feature during an **ongoing call**, users need to preconfigure a new softkey in the ongoing call screen.

Users can (for example) preconfigure the 'personal_settings/soft_keys/ongoing_call/0/key_function' configuration file parameter to PAGING (the default is BLIND_TRANSFER).

In addition, after configuring Paging (via VoIP Services), users will view a new key in the phone's Hold screen (i.e., in the screen displayed when the user holds a call).

New 'Paging' key during hold
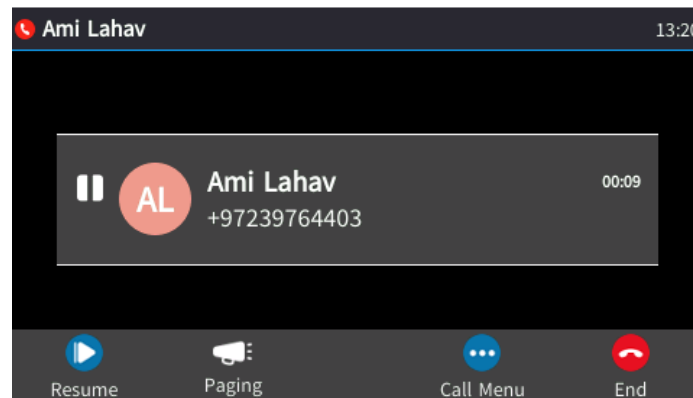
■ Virtual Keypad improvements:

  • A long-press option has been added to allow more characters (Latin, Cyrillic, etc.)

Long press option
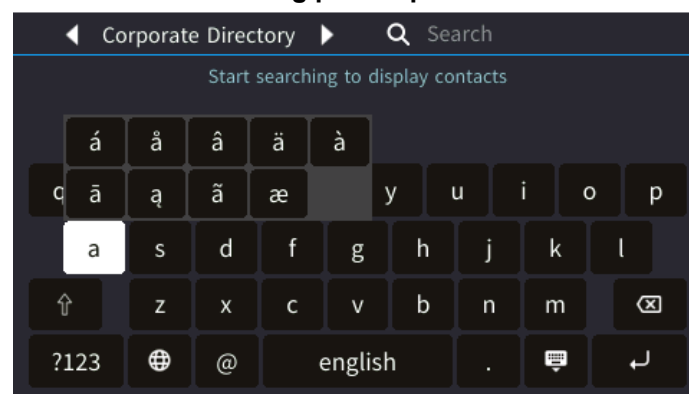
  • More languages are supported:

    ♦ Deutsch:German

    ♦ English:English

    ♦ Français:French

    ♦ עברית: Hebrew

- Español:Spanish
- Italiano:Italian
- Korean:Korean
- Magyar:Hungarian
- Nederlands:Dutch
- Polski:Polish
- Português:Portuguese
- Slovenčina:Slovak
- Suomalainen:Finnish
- Čeština:Czech
- Русский:Russian
- Українська:Ukrainian

The figure below shows an example of a phone screen indicating the selected language.
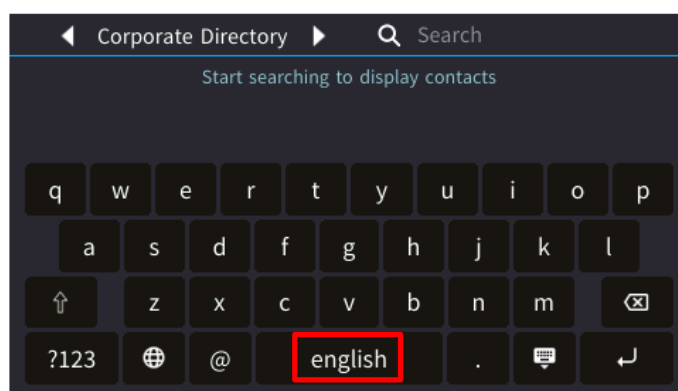
3.3.2   Known Constraints in Version 3.4.3

Here are the constraints known to exist in Version 3.4.3

Table 3-5: Known Constraints in Version 3.4.3

Incident	Description
IPPUC-3185	A Federated Teams user (compatible) fails to join a Teams meeting when an Admit is needed but successfully joins on the second attempt.
IPPUC-3198	In a Teams-compatible environment, Teams meetings calls are disconnected after ~1 hour. To prevent this, set the following two parameters to 0: ▪ /voip/signalling/sip/session_timer ▪ /voip/signalling/sip/min_session_interval
-	In an existing conference call, adding a user with a Teams compatible phone and a PC client results in only the PC client ringing and being added to the call.
-	The Teams compatible phone cannot transfer (any Transfer type) an internal call to PSTN when using an SBC working with Direct Routing.
-	The 'Unmute All' feature does not function in a Teams meeting.
-	When escalating a P2P call to a conference with a Teams compatible phone, only the conference initiator's device displays the conference Roster.
-	In the Teams-compatible phone, when a Discreet call is attempted, the 'caller' successfully establishes the 'call' but the auto answer feature on the other side isn't functioning and the user (typically, a member of the organization's security staff) must manually pick up the 'call'.
IPPUC-3050	[C450HD and 445HD Bluetooth] Voice Quality in Bluetooth: The remote party may hear clicks during a call.
IPPUC-2110	[445HD Bluetooth] In some scenarios (such as when pairing and then unpairing or when switching from Bluetooth headset to USB headset), the VoIP application may reload.
IPPUC-3171	[450HD, C450HD and RX50] The upper name in the Contacts list may be displayed cut off when searching for contacts using the virtual keypad.
IPPUC-3555	[445HD][Multicast Paging] The phone displays an incorrect paging title.
IPPUC-3361	On rare occasions, the wrong contact picture is displayed during a call and in the Call Log.
IPPUC-1395	[C450HD and 445HD] [Wi-Fi] The Wi-Fi MAC field is not recognized as an AudioCodes known MAC. As a result, the Device Manager counts such phones as 'non AudioCodes devices' thus causing a licensing issue with the Device Manager and some Device Manager features do not function (the logo, for example, is missing).
IPPSFB-9813	[EHS headset] The VoIP application may reload in rare scenarios in which two calls are received simultaneously.
-	[RX50] QoE is currently not supported.
-	[RX50] MoH is currently not supported.
-	[RX50] Microsoft Device update is currently not supported.
-	[RX50] Only the default Call Progress Tones (USA standard) is currently supported.
-	[RX50] Only 20 milliseconds is currently supported for the Packetization time; do not change the default coder list.
-	[RX50] The debugging tools of TDM and network recording are currently not supported.
-	[RX50] It's advisable to restore all RX50 devices with versions earlier than 3.4.2.200 to their default settings as the layouts of some screens were subsequently modified.

Incident	Description
IPPUC-2488	[RX50] The progress bar indicating the upgrading process is sometimes missing. Note that the upgrading process takes 18-20 minutes.
-	[RX50] [Phone Device Lock] When enabling the phone Device Lock feature, the only lock option is a complete lock; there's no option for a partial lock that allows outgoing calls, etc.
IPPUC-3011	[RX50] [Phone Device Lock] There's no **Lock** softkey to lock the phone manually.
IPPUC-3012	[RX50] [Phone Device Lock] The **Emergency** softkey should be displayed in the locked screen.
IPPUC-3187	[RX50] [Phone Device Lock] There's no **HotDesk** softkey.
-	[RX50] When changing volume while talking, audio at the far end is cut.
-	[RX50] During the start up procedure, a short click is heard on the speaker.
IPPUC-3191	[RX50] After a user adds a contact to their Favorites, the option to 'un-favorite' that contact is missing.
IPPUC-3177	[RX50] When directly calling a user's voicemail, the 'digits' softkey is missing (and this preventing some advanced options like 'Press the # for more options').
IPPSFB-4052	[405HD] The Microsoft Device Update (via CAB file) is not supported in this version release.
IPPSFB-8053	Semi-Attended Transfer does not function flawlessly in this release.
IPPSFB-2080	[USB headset] Trying to disconnect / reconnect the USB headset several times may result in the phone becoming 'stuck' and may require a reboot.
IPPSFB-7169	[445HD Wi-Fi] Wi-Fi phone screens are currently available only in English.
IPPSFB-7135	[445HD Wi-Fi] When Wi-Fi is in use, BToE automatic pairing is not supported.
IPPSFB-6815	[445HD Wi-Fi] Switching between a wired and a Wi-Fi connection requires a phone reboot.
IPPSFB-8152	[C450HD, 445HD] [Wi-Fi] Provisioning using TFTP may fail due to timeout.
-	[450HD] Downgrading the phone's firmware to version 3.0.0.410.24 (released in 2016) may damage the phone. This firmware version may be the default in the Device Manager (IP Phone Manager) deployed in old CloudBond installations. If you see that this firmware version is the default, replace it with the current 450HD GA firmware version before adding 450HD phones.
IPPSFB-8477	[445HD/C450HD] QoE report modifications related to signal level are incorrect.
106161	[Boss-Admin] A Skype for Business user whose name starts with a small letter and who is configured as Admin, is displayed on the Boss' phone as a URI address rather than with the display name.
106517	[Multiple 440HD Boss-Admin] When there is a crossed delegation, i.e., when Admin 1 is Boss of Admin 2 and Admin 2 is Boss of Admin 1), the Boss doesn't see the call when Admin answers the call.
106254	[Multiple 440HD Boss-Admin] Retrieving a parked call 'On behalf' doesn't appear on the sidecar. If the call is not parked, there is no issue.
105852	[BToE] In the scenarios listed below, the phone performs as a PC playback device and not as a standalone phone. Some call management capabilities consequently go missing, e.g., hold, transfer, conference roster screen. In these scenarios, a regular call may start similarly to a video call, i.e., the phone is used as the PC playback device. Example scenarios: ▪ RGS/Delegate call made 'on behalf' from the PC client ▪ Call from IM (Instance Message) that was opened before the phone was paired. This is aligned with Microsoft's BToE implementation.
106432	[BToE with Delegation] When a video call comes in to the Boss, a paired Admin phone will not ring but can accept the call. This is aligned with Microsoft's BToE implementation of video calls.

Incident	Description
104326	[Skype for Business 'Favorites'] The phone does not retrieve Outlook contacts from on-premises Microsoft Exchange servers.
103639	[Multi-Party Skype for Business Remote Conferencing] When a conference is locked, the phone cannot add a user (Skype for Business client or other certified phone) if not admitted within 15 seconds.
103927	Sometimes, the user is unable to join a Skype for Business meeting whose configured 'End time' has passed.
-	[BToE] BToE does not function if PC users are switched without logging off first.
-	[BToE - PC application] Windows 10 users who have the BToE PC application already installed on their PCs must uninstall it before installing the new version of the application.
104040	[BToE] When a paired user answers an incoming team-call, the phone does not present the call as a team-call.
104039	[BToE] When a paired user answers a delegated call, the phone does not show that it's a delegated call.
103961	[BToE video] A paired user cannot answer a second incoming call via the Skype for Business client when having an active video call.
103827	[BToE video] On a PC with low CPU resources, interference in the voice of a video call might be experienced.
100827	[Boss Admin] Response Group: A call initiated by Admin on Boss' behalf to Response Group cannot be picked up by Boss.
103573	[Boss-Admin in a conference scenario] The Rosters screen does not indicate if a participant is 'On behalf'.
103572	[Boss-Admin in a conference scenario] Admin can't set up a meeting on behalf of Boss.
93495	The Web interface displays some screens that are inapplicable to Skype for Business.
-	Call Log information is saved to the phone file system once every six hours. Consequently, Call Log information such as missed, received and outgoing calls may not be saved after restarting. [Only relevant if Microsoft Exchange isn't used, i.e., if a user performs a PIN sign-in or if a user is without Microsoft Exchange].
-	Voicemail is supported for Microsoft Exchange Server 2013 and later.
-	[Multiple Boss-Admin with SHARED_LINE] The phone can present up to 12 incoming calls on the phone's sidecar. Calls over and above the 13th call will not be managed on the sidecar. They will not be displayed nor will they be capable of being picked up. Even if an index on the sidecar will free up, the call will not occupy the free index. A newly free index will be occupied by the next incoming call.
-	[Multiple Boss-Admin with SHARED_LINE] The phone is currently capable of simultaneously handling up to eight calls per line (configured with the 'number_of_calls_per_line' parameter). If eight calls are concurrently managed on the phone, attempting to pick up an additional call will fail. Other phones in the group can still pick up the call.
-	[Multiple Boss-Admin with SHARED_LINE] Simultaneous configuration of this feature (the 440HD phone's 'Delegated Line' feature) and the phone's BToE feature is not supported.
-	[Multiple Boss-Admin with SHARED_LINE] Accepting, rejecting and resuming calls must be performed using the softkeys or by picking up the handset. They cannot be performed from the audio device keys – speaker/headset.

Incident	Description
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, switching between calls displayed in the phone's sidecar, i.e., picking up calls in succession, one after the other, may cause the phone to handle some pickups incorrectly; best practice is therefore to wait five seconds between each pickup to allow the previous action to finish.
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, ending several calls too fast may cause unexpected behavior; best practice therefore is to have a 5-second delay between actions.
-	[Multiple Boss-Admin with SHARED_LINE] If two phones simultaneously try to pick up two calls held by a certain phone, one of the pickups may fail. Re-attempting to pick up will be successful.
107516	[USB headset] [Plantronics C320] Using the 'Mute' key from the USB headset is not recommended since the headset may lose synchronization with the phone. It's preferable to use the phone's mute key instead.
107485	[USB headset] [Jabra HSC016] Using the volume keys on this headset is not recommended as they send an unexpected unmute command. It's advisable to use the phone's mute key and volume up/down keys instead.
-	[USB headset] [Jabra Evolve 65] The headset hook key cannot be used to accept an incoming call. Instead, the incoming call can be answered from the phone.
IPPSFB-4682	[USB headset] [Plantronics Savi W440-M] Calls can't be disconnected via the headset hook control.
-	[430HD/440HD/445HD] [Boss-Admin] Configuring a delegation deletes the speed dial from the phone screen (because it uses the same keys). Speed dial information is kept in the Device Manager Pro | Express (formerly known as the IP Phone Manager). The speed dial reappears in the phone screen when delegation is disabled.
IPPUC-3709	[Virtual Keypad] When long-pressing a key on the Virtual Keypad, the key may get stuck in long-press mode.
IPPUC-3829	[Multicast Paging] A noise may be heard during a paging call if the phone is already occupied with more than three calls in parallel.
IPPUC-3755	[RX50] Detection of Broken RTP isn't supported and as a result, a call will not be closed due to broken RTP. The capability helps with disconnected calls (disrupted audio).

3.3.3   Resolved Constraints in Version 3.4.3

Here are the constraints that were resolved in Version 3.4.3

Table 3-6: Resolved Constraints in Version 3.4.3

Incident	Description
IPPUC-3027	[RX50] URL dialing is not supported from the 'New Call' screen.
IPPUC-2941	[RX50] After searching for a user in the Call Log lists, touching a search result creates a call to that user without there being an option to access that user's details for the purpose of (for example) calling their office or mobile phone. Accessing a user's details is possible from the Contacts list.
IPPUC-3409	[RX50] A numeric keypad (IVR) has been added to the Emergency ongoing call screen.
IPPUC-2890	[RX50] The DSP version has been added to the phone's Release Information screen.
IPPSFB-9865	[445HD] When a Boss makes / receives a call, the indication 'call for self' is displayed on the phone screen.
IPPUC-3707	In the Dutch language, the 'No matches' message is displayed with an "S" only.
IPPUC-3395	[C450HD and 445HD Bluetooth] On rare occasions, the phone enters into an endless Connecting state (and as a result, fails to pair).
IPPUC-3058	When the user deletes the last character they entered, the keypad is closes.
IGS-2814	The phone is unable of sending a SIP PUBLISH to OVOC/VQE.
IPPUC-3129	The 'Clear' softkey doesn't support long press.
IPPUC-3555	[445HD] The phone displays an incorrect 'Paging' title.
IPPUC-3353	The phone sends the OVOC a corrupted keep-alive during the upgrade firmware phase. This causes a double registration of the same unit on the OVOC, with incorrect parameters. The issue occurs only on Wi-Fi units.
IPPUC-3474	The 'Details' screen of speed dial contacts is incorrectly displayed.

3.4   Version 3.4.2

> ⚠️ **Note:** Version 3.4.2 includes firmware build **3.4.2.257.51**.

3.4.1   What's New in Version 3.4.2

■ **Virtual QWERTY keyboard** (applies to the 450HD and C450HD phones, the HRS and the RX50 Conference Phone). The feature allows users to easily and effortlessly enter strings into fields. Users will mainly use the virtual keyboard when:

Searching for contacts

URL dialing

Signing in
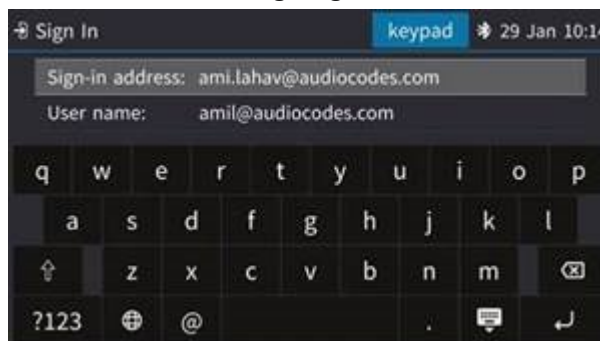
The virtual keyboard is currently supported in English, German, French and Hebrew. More languages will be supported in next version releases.

■ **The C450HD phone supports the SILK voice coder**.

■ **Bluetooth (beta level)**. Integrated Bluetooth for wireless headset connectivity (applicable to the 445HD-BW and C450HD-BW phones). Bluetooth is supported in specific regions such as the USA,

Canada, the European Union, Switzerland, South Africa and Israel, and requires a specific CPN with a 'BW' suffix when ordering. For an updated list of supported regions, contact AudioCodes.

To enable Bluetooth on the phone:

- Access the Bluetooth screen (**Menu** > **Settings**):
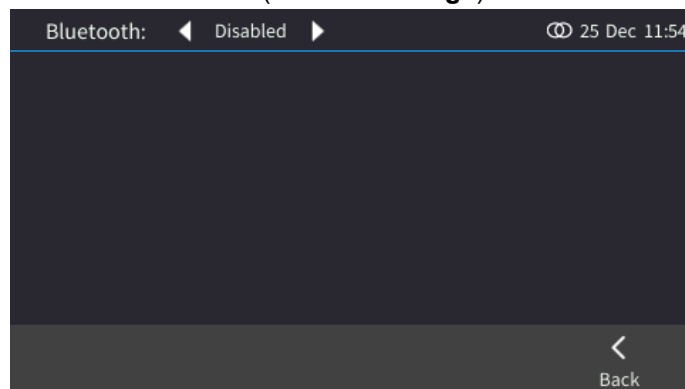
- Press the right/left rim of the navigator key to configure **Enabled**:
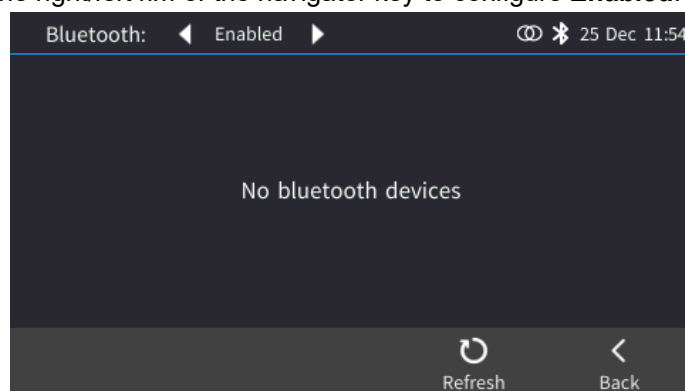
- Configure the device (Bluetooth headset or speaker) to allow pairing and then press the **Refresh** softkey; the phone attempts to discover available devices:
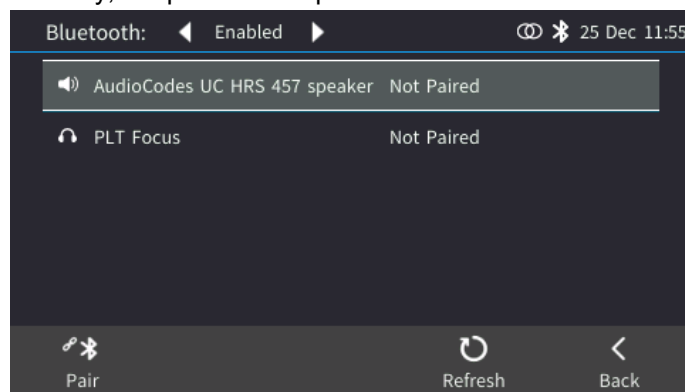
- Press the **Pair** softkey to pair the device. After pairing is complete, the phone displays 'Connected'.
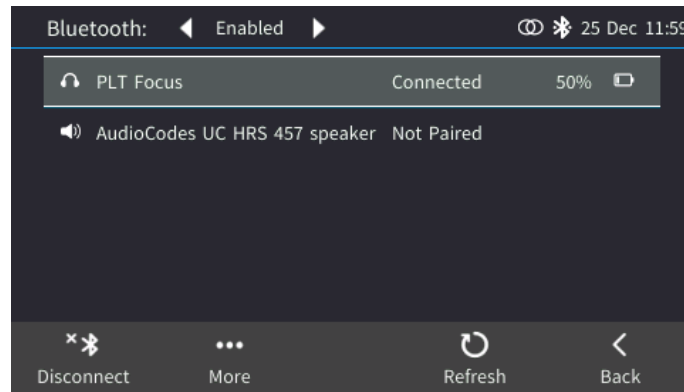
- When the phone is connected via Bluetooth, its battery level is visually indicated adjacent to the 'Connected' indication. Bluetooth connectivity is indicated on the upper bar by the Bluetooth icon.

  - [icon] indicates Bluetooth is enabled, not paired

  - [icon] indicates that the device is connected

- Start using the device.
- The following Bluetooth call controls are supported (and can be used from the Bluetooth device itself):
  - Accept call
  - End call
  - Reject call
  - Mute/unmute
  - Volume up/down

> **Note:**
>
> - All Bluetooth headsets are defined by the phone as headsets and the phone's headset hard key onhooks / offhooks the headset.
> - Connecting both the USB headset and the Bluetooth headset is currently not recommended.
> - Known speakers such as the HRS 457, Jabra 710 and Jabra 510 are not defined as Bluetooth headsets. Users can define a known Bluetooth speaker as the phone's default Audio Device from **Settings** > **Audio Device**:
>
>
>
> - After it is selected, the Bluetooth speaker will be used whenever a call is answered via the **Accept** softkey or initiated via the **Dial** key. The phone's hard speaker and headset keys are used for its speaker and connected headset, for example, USB headset.
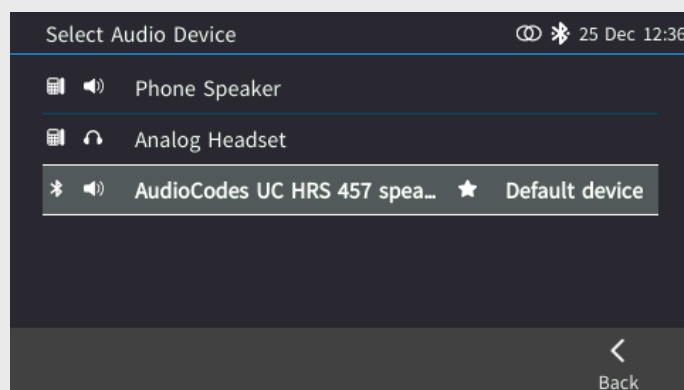
■ **Customized UI experience**. Users can configure **Programmable Softkeys** for **New Call** state, **Ongoing call** state and **Idle** screen state as part of the phone's capability of allowing a customized user interface experience. See the pending *Administrator's Manual Version 3.4.2* for more information about how to customize the Programmable Softkeys.

- Configurable idle screen

  Administrators can customize the home screen in line with the preferences / requirements of enterprise management and / or the employees. A typical use for this feature can be the option to disable the **Meet Now** softkey and replace it with another softkey such as the **Received Calls** softkey or the **Calendar** softkey, as the **Meet Now** softkey does not function in a Teams-compatible environment.

- Configurable ongoing call screen.

  Administrators can customize the ongoing call screen (shown in the figure below) in line with the preferences / requirements of enterprise management and / or the employees.
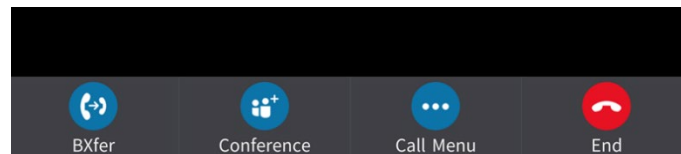
  For example, the **BXfer** softkey in the ongoing call screen shown in the preceding figure can be replaced with the **New Call** softkey shown in the figure below on the phones of enterprise users who infrequently transfer calls.
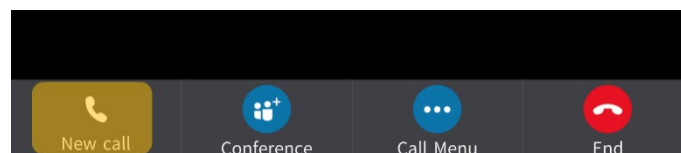
- Configurable initiate call screen

  Administrators can customize the initiate call screen (shown in the figure below) in line with the preferences / requirements of enterprise management and / or the employees.
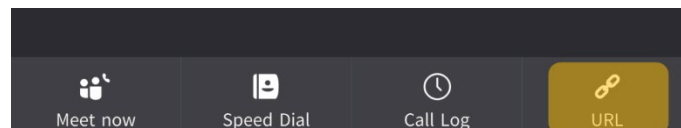
  For example, the **URL** dialing softkey in the initiate call screen shown in the preceding figure can be replaced with the **Contacts** softkey shown in the figure below.
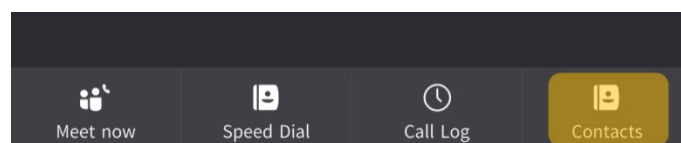
■ **Enhanced Presence**

‘In a call’ is now a distinct status, indicated with an icon along with a flashing red LED that was already supported in previous releases in 445HD.
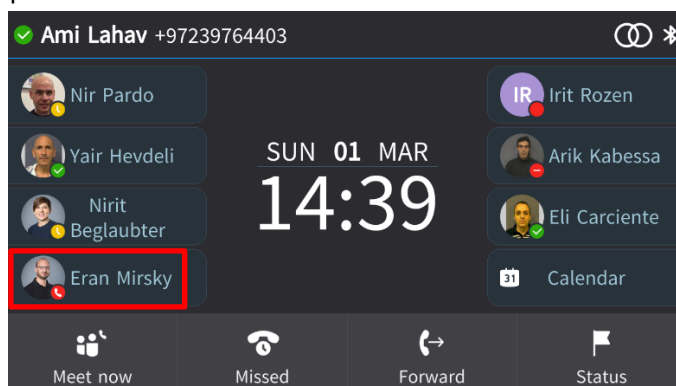
The user’s self presence also indicating this new status:
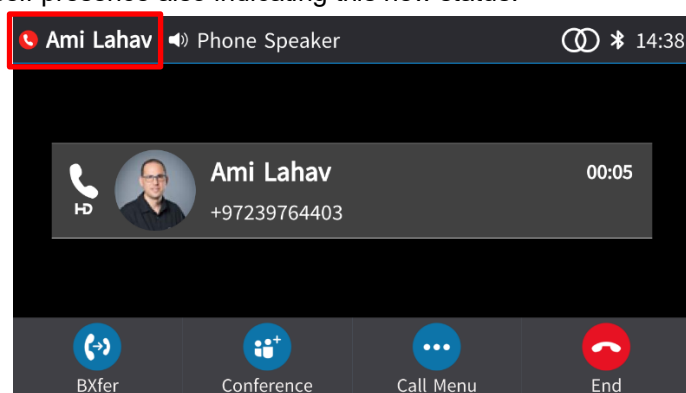
■ **Audio devices**: Users can switch between any available audio device either by pressing the headset / speaker key or by long-pressing the speaker / headset key and then if there are more devices, selecting the device from the list.
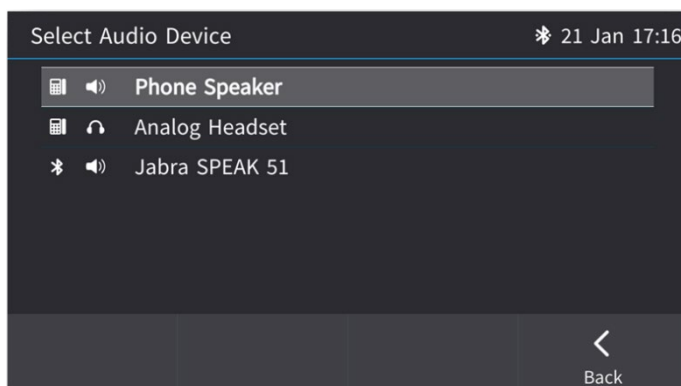
The device indicates the selected audio device in the screen title.
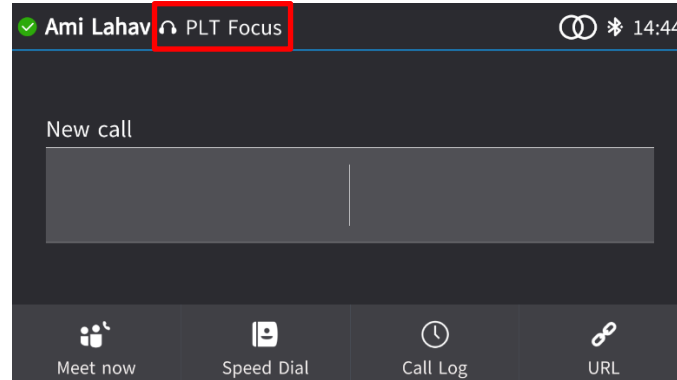
- **Location Policy Notification URI**. As part of inband provisioning for emergency calls, the phone can get a distribution list that consists of a list of numbers to be dialed. An emergency call can be made to the police, for example, E911 in the US, or to the distribution list. In the case of the latter, when a user dials a distribution list and the first number listed doesn't respond, the second number listed is attempted and then the third until the end of the list, depending on the inband parameters received, or until the call is answered.
  The URI is the address within which are the numbers to be dialed if an emergency call must be made.

- **Mute state per call**. Users can toggle between calls while mute state remains exactly as each call was left in before toggling so users won't accidentally get unmuted when toggling between calls. In previous releases, mute state was not saved after a call was held and then resumed.

- **Users can search in 'Contacts' and Call Logs during a dial tone**. When users search 'Contacts', Call Log, etc., during a dial tone, the dial tone stops and the user can take their time to complete the search. In previous releases, the dial tone timeout was reached before the user could complete the search and the call was subsequently cancelled.

- **Distinctive Ringing** has been enhanced to allow control over the **volume of Admin's ringtone in the Boss's phone**. The option to configure Boss's ringtone in Admin's phone was already supported in previous version releases

3.4.2   Known Constraints in Version 3.4.2

Here are the constraints known to exist in Version 3.4.2

Table 3-7: Known Constraints in Version 3.4.2

Incident	Description
IPPUC-3185	A Federated Teams user (compatible) fails to join a Teams meeting when an Admit is needed but successfully joins on the second attempt.
IPPUC-3198	In a Teams-compatible environment, Teams meetings calls are disconnected after ~1 hour. To prevent this, set the following two parameters to 0: ▪ /voip/signalling/sip/session_timer ▪ /voip/signalling/sip/min_session_interval
-	In an existing conference call, adding a user with a Teams compatible phone and a PC client results in only the PC client ringing and being added to the call.
-	The Teams compatible phone cannot transfer (any Transfer type) an internal call to PSTN when using an SBC working with Direct Routing.
-	The 'Unmute All' feature does not function in a Teams meeting.
-	When escalating a P2P call to a conference with a Teams compatible phone, only the conference initiator's device displays the conference Roster.

Incident	Description
-	In the Teams-compatible phone, when a Discreet call is attempted, the 'caller' successfully establishes the 'call' but the auto answer feature on the other side isn't functioning and the user (typically, a member of the organization's security staff) must manually pick up the 'call'.
IPPUC-3395	[C450HD and 445HD Bluetooth] On rare occasions, the phone enters into an endless Connecting state (and as a result, fails to pair).
IPPUC-3050	[C450HD and 445HD Bluetooth] Voice Quality in Bluetooth: The remote party may hear clicks during a call.
IPPUC-2110	[445HD Bluetooth] In some scenarios (such as when pairing and then unpairing or when switching from Bluetooth headset to USB headset), the VoIP application may reload.
IPPUC-3171	[450HD, C450HD and RX50] The upper name in the Contacts list may be displayed cut off when searching for contacts using the virtual keypad.
IPPUC-3555	[445HD][Multicast Paging] The phone displays an incorrect paging title.
IPPUC-3361	On rare occasions, the wrong contact picture is displayed during a call and in the Call Log.
IPPUC-1395	[C450HD and 445HD] [Wi-Fi] The Wi-Fi MAC field is not recognized as an AudioCodes known MAC. As a result, the Device Manager counts such phones as 'non AudioCodes devices' thus causing a licensing issue with the Device Manager and some Device Manager features do not function (the logo, for example, is missing).
IPPSFB-9813	[EHS headset] The VoIP application may reload in rare scenarios in which two calls are received simultaneously.
-	[RX50] Languages currently supported on the device's Virtual Keypad are: ▪ English ▪ German ▪ French ▪ Hebrew
-	[RX50] QoE is currently not supported.
-	[RX50] MoH is currently not supported.
-	[RX50] Microsoft Device update is currently not supported.
-	[RX50] Only the default Call Progress Tones (USA standard) is currently supported.
-	[RX50] Only 20 milliseconds is currently supported for the Packetization time; do not change the default coder list.
-	[RX50] The debugging tools of TDM and network recording are currently not supported.
-	[RX50] It's advisable to restore all RX50 devices with versions earlier than 3.4.2.200 to their default settings as the layouts of some screens were subsequently modified.
IPPUC-2488	[RX50] The progress bar indicating the upgrading process is sometimes missing. Note that the upgrading process takes 18-20 minutes.
-	[RX50] [Phone Device Lock] When enabling the phone Device Lock feature, the only lock option is a complete lock; there's no option for a partial lock that allows outgoing calls, etc.
IPPUC-3011	[RX50] [Phone Device Lock] There's no **Lock** softkey to lock the phone manually.
IPPUC-3012	[RX50] [Phone Device Lock] The **Emergency** softkey should be displayed in the locked screen.
IPPUC-3187	[RX50] [Phone Device Lock] There's no **HotDesk** softkey.
-	[RX50] When changing volume while talking, audio at the far end is cut.
-	[RX50] During the start up procedure, a short click is heard on the speaker.

Incident	Description
IPPUC-3191	[RX50] After a user adds a contact to their Favorites, the option to 'un-favorite' that contact is missing.
IPPUC-2941	[RX50] After searching for a user in the Call Log lists, touching a search result creates a call to that user without there being an option to access that user's details for the purpose of (for example) calling their office or mobile phone. Accessing a user's details is possible from the Contacts list.
IPPUC-3177	[RX50] When directly calling a user's voicemail, the 'digits' softkey is missing (and this preventing some advanced options like 'Press the # for more options').
IPPUC-3027	[RX50] URL dialing is not supported from the 'new call' screen.
-	
IPPSFB-4052	[405HD] The Microsoft Device Update (via CAB file) is not supported in this version release.
IPPSFB-8053	Semi-Attended Transfer does not function flawlessly in this release.
IPPSFB-2080	[USB headset] Trying to disconnect / reconnect the USB headset several times may result in the phone becoming 'stuck' and may require a reboot.
IPPSFB-7169	[445HD Wi-Fi] Wi-Fi phone screens are currently available only in English.
IPPSFB-7135	[445HD Wi-Fi] When Wi-Fi is in use, BToE automatic pairing is not supported.
IPPSFB-6815	[445HD Wi-Fi] Switching between a wired and a Wi-Fi connection requires a phone reboot.
IPPSFB-8152	[C450HD, 445HD] [Wi-Fi] Provisioning using TFTP may fail due to timeout.
-	[450HD] Downgrading the phone's firmware to version 3.0.0.410.24 (released in 2016) may damage the phone. This firmware version may be the default in the Device Manager (IP Phone Manager) deployed in old CloudBond installations. If you see that this firmware version is the default, replace it with the current 450HD GA firmware version before adding 450HD phones.
IPPSFB-8477	[445HD/C450HD] QoE report modifications related to signal level are incorrect.
106161	[Boss-Admin] A Skype for Business user whose name starts with a small letter and who is configured as Admin, is displayed on the Boss' phone as a URI address rather than with the display name.
106517	[Multiple 440HD Boss-Admin] When there is a crossed delegation, i.e., when Admin 1 is Boss of Admin 2 and Admin 2 is Boss of Admin 1), the Boss doesn't see the call when Admin answers the call.
106254	[Multiple 440HD Boss-Admin] Retrieving a parked call 'On behalf' doesn't appear on the sidecar. If the call is not parked, there is no issue.
105852	[BToE] In the scenarios listed below, the phone performs as a PC playback device and not as a standalone phone. Some call management capabilities consequently go missing, e.g., hold, transfer, conference roster screen. In these scenarios, a regular call may start similarly to a video call, i.e., the phone is used as the PC playback device. Example scenarios: ▪ RGS/Delegate call made 'on behalf' from the PC client ▪ Call from IM (Instance Message) that was opened before the phone was paired. This is aligned with Microsoft's BToE implementation.
106432	[BToE with Delegation] When a video call comes in to the Boss, a paired Admin phone will not ring but can accept the call. This is aligned with Microsoft's BToE implementation of video calls.
104326	[Skype for Business 'Favorites'] The phone does not retrieve Outlook contacts from on-premises Microsoft Exchange servers.
103639	[Multi-Party Skype for Business Remote Conferencing] When a conference is locked, the phone cannot add a user (Skype for Business client or other certified phone) if not admitted within 15 seconds.

Incident	Description
103927	Sometimes, the user is unable to join a Skype for Business meeting whose configured 'End time' has passed.
-	[BToE] BToE does not function if PC users are switched without logging off first.
-	[BToE - PC application] Windows 10 users who have the BToE PC application already installed on their PCs must uninstall it before installing the new version of the application.
104040	[BToE] When a paired user answers an incoming team-call, the phone does not present the call as a team-call.
104039	[BToE] When a paired user answers a delegated call, the phone does not show that it's a delegated call.
103961	[BToE video] A paired user cannot answer a second incoming call via the Skype for Business client when having an active video call.
103827	[BToE video] On a PC with low CPU resources, interference in the voice of a video call might be experienced.
100827	[Boss Admin] Response Group: A call initiated by Admin on Boss' behalf to Response Group cannot be picked up by Boss.
103573	[Boss-Admin in a conference scenario] The Rosters screen does not indicate if a participant is 'On behalf'.
103572	[Boss-Admin in a conference scenario] Admin can't set up a meeting on behalf of Boss.
93495	The Web interface displays some screens that are inapplicable to Skype for Business.
-	Call Log information is saved to the phone file system once every six hours. Consequently, Call Log information such as missed, received and outgoing calls may not be saved after restarting. [Only relevant if Microsoft Exchange isn't used, i.e., if a user performs a PIN sign-in or if a user is without Microsoft Exchange].
-	Voicemail is supported for Microsoft Exchange Server 2013 and later.
-	[Multiple Boss-Admin with SHARED_LINE] The phone can present up to 12 incoming calls on the phone's sidecar. Calls over and above the 13th call will not be managed on the sidecar. They will not be displayed nor will they be capable of being picked up. Even if an index on the sidecar will free up, the call will not occupy the free index. A newly free index will be occupied by the next incoming call.
-	[Multiple Boss-Admin with SHARED_LINE] The phone is currently capable of simultaneously handling up to eight calls per line (configured with the 'number_of_calls_per_line' parameter). If eight calls are concurrently managed on the phone, attempting to pick up an additional call will fail. Other phones in the group can still pick up the call.
-	[Multiple Boss-Admin with SHARED_LINE] Simultaneous configuration of this feature (the 440HD phone's 'Delegated Line' feature) and the phone's BToE feature is not supported.
-	[Multiple Boss-Admin with SHARED_LINE] Accepting, rejecting and resuming calls must be performed using the softkeys or by picking up the handset. They cannot be performed from the audio device keys – speaker/headset.
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, switching between calls displayed in the phone's sidecar, i.e., picking up calls in succession, one after the other, may cause the phone to handle some pickups incorrectly; best practice is therefore to wait five seconds between each pickup to allow the previous action to finish.
-	[Multiple Boss-Admin with SHARED_LINE] On rare occasions, ending several calls too fast may cause unexpected behavior; best practice therefore is to have a 5-second delay between actions.

Incident	Description
-	[Multiple Boss-Admin with SHARED_LINE] If two phones simultaneously try to pick up two calls held by a certain phone, one of the pickups may fail. Re-attempting to pick up will be successful.
107516	[USB headset] [Plantronics C320] Using the 'Mute' key from the USB headset is not recommended since the headset may lose synchronization with the phone. It's preferable to use the phone's mute key instead.
107485	[USB headset] [Jabra HSC016] Using the volume keys on this headset is not recommended as they send an unexpected unmute command. It's advisable to use the phone's mute key and volume up/down keys instead.
-	[USB headset] [Jabra Evolve 65] The headset hook key cannot be used to accept an incoming call. Instead, the incoming call can be answered from the phone.
IPPSFB-4682	[USB headset] [Plantronics Savi W440-M] Calls can't be disconnected via the headset hook control.
-	[430HD/440HD/445HD] [Boss-Admin] Configuring a delegation deletes the speed dial from the phone screen (because it uses the same keys). Speed dial information is kept in the Device Manager Pro | Express (formerly known as the IP Phone Manager). The speed dial reappears in the phone screen when delegation is disabled.

3.4.3 Resolved Constraints in Version 3.4.2

Here are the constraints that were resolved in Version 3.4.2

Table 3-8: Resolved Constraints in Version 3.4.2

Incident	Description
IPPUC-2446	DHCP Option 160 does not read correctly if there is no forward slash (/) at the end of the sent path.
IPPSFB-2662	If a muted call is put on hold, the mute stops functioning. This behavior is not incorrect but it's different compared to the phone's behavior in version 3.0.1, hence indicated here.
IPPUC-2991	A call can't be established if an incoming call was forwarded by the Boss.
IPPUC-2963	[C445HD] The phone crashes when searching for an Outlook contact.
IPPUC-3133	On rare occasions, the HRS crashes when joining an online meeting.
IPPSFB-9303	Cisco Discovery Protocol (CDP) performance requires improvement.
IPPSFB-9786	Incorrect parsing of P-Asserted identity with special character ':' occurs.

3.5 Version 3.2.1.513

⚠️ **Note:** Version 3.2.1 includes firmware build **3.2.1.513** for the 405HD, 430HD, 440HD, 445HD, 445HD-R, 450HD, C450HD phone models, and the Huddle Room Solution (HRS).

3.5.1 Resolved Constraints in Version 3.2.1.513

Table 3-9: Resolved Constraints in Version 3.2.1.513

Incident	Description
IPPSFB-9748	[Teams Compatible] The phone fails to escalate a call to a conference involving a PSTN party.
IPPSFB-9767	[802.1x] The default EAP-TLS identity header format <ModelType>_<MAC Address> is not supported.
IPPSFB-9598	[450HD] In some environments, the phone only displays a calling number.
IPPSFB-9754 IPPSFB-9716	[450HD] Location information about the phone (chassis-id) is not displayed on the phone.
IPPSFB-9500	Location information about the phone is not displayed in the Device Manager.
IPPSFB-9739	E911 calls are missing location information if the location service isn't available.
IPPSFB-9729	[440HD] The phone is unable to save a number selected from a search in the Corporate Directory, as a speed dial Function Key (BLF).
IPPSFB-9626	Unanswered Response Group Service (RGS) calls are displayed in the Missed Calls list; they shouldn't be.
IPPSFB-9650	[C450HD] Music on Hold (MoH) is not played after putting a second call on hold and then answering another call.
IPPSFB-9586	[Web Sign-in] On rare occasions, the phone loses its registration due to network loss and cannot recover from this mode. As a result, the user is signed out.

Incident	Description
IPPSFB-9653	[440HD, 405HD] The phone fails to cancel a Web-sign-in from the screen if the user began performing the sign-in and then abandoned the sign-in.

3.5.2   Known Constraints in Version 3.2.1.513

Here are the constraints known to exist in Version 3.2.1.513

Table 3-10: Known Constraints in Version 3.2.1.513

Incident	Description
-	The 420HD phone model isn't supported in this version.
-	HRS does not support Boss-Admin, Better Together over Ethernet (BToE) and Multicast Paging. ▪ Exchange integration (Calendar) ▪ Visual Voice Mail ▪ Outlook contacts and Skype for Business 'Favorites' contacts
106161	[Boss-Admin] A Skype for Business user whose name starts with a small letter and who is configured as Admin, is displayed on the Boss' phone as a URI address rather than with the display name.
106517	[New 440HD Boss-Admin] When there is a crossed delegation, i.e., when Admin 1 is Boss of Admin 2 and Admin 2 is Boss of Admin 1), the Boss doesn't see the call when Admin answers the call.
106254	[New 440HD Boss-Admin] Retrieving a parked call 'On behalf' doesn't appear on the sidecar. If the call is not parked, there is no issue.
105852	[BToE] In the scenarios listed below, the phone performs as a PC playback device and not as a standalone phone. Some call management capabilities consequently go missing, e.g., hold, transfer, conference roster screen. In these scenarios, a regular call may start similarly to a video call, i.e., the phone is used as the PC playback device. Example scenarios: ▪ RGS/Delegate call made 'on behalf' from the PC client ▪ Call from IM (Instance Message) that was opened before the phone was paired. This is aligned with Microsoft's BToE implementation.
106432	[BToE with Delegation] When a video call comes in to the Boss, a paired Admin phone will not ring but can accept the call. This is aligned with Microsoft's BToE implementation of video calls.
104326	[Skype for Business 'Favorites'] The phone does not retrieve Outlook contacts from on-premises Microsoft Exchange servers.
103639	[Multi-Party Skype for Business Remote Conferencing] When a conference is locked, the phone cannot add a user (Skype for Business client or other certified phone) if not admitted within 15 seconds.
103927	Sometimes, the user is unable to join a Skype for Business meeting whose configured 'End time' has passed.
-	[BToE] BToE does not function if PC users are switched without logging off first.
-	[BToE - PC application] Windows 10 users who have the BToE PC application already installed on their PCs must uninstall it before installing the new version of the application.
104040	[BToE] When a paired user answers an incoming team-call, the phone does not present the call as a team-call.
104039	[BToE] When a paired user answers a delegated call, the phone does not show that it's a delegated call.
103961	[BToE video] A paired user cannot answer a second incoming call via the Skype for Business client when having an active video call.
103827	[BToE - video] On a PC with low CPU resources, interference in the voice of a video call might be experienced.

Incident	Description
100827	[Boss Admin] Response Group: A call initiated by Admin on Boss' behalf to Response Group cannot be picked up by Boss.
103573	[Boss-Admin in a conference scenario] The Rosters screen does not indicate if a participant is 'On behalf'.
103572	[Boss-Admin in a conference scenario] Admin can't set up a meeting on behalf of Boss.
101198	[405HD model phone] The Ringtones list in the phone's Web interface is incorrect.
103651	Provisioning by the Redirect Server doesn't function if the phone receives any provisioning of configuration URL via DHCP options.
93495	The Web interface displays some screens that are inapplicable to Skype for Business.
-	Call Log information is saved to the phone file system once every six hours. Consequently, Call Log information such as missed, received and outgoing calls may not be saved after restarting. [Only relevant if Microsoft Exchange isn't used, i.e., if a user performs a PIN sign-in or if a user is without Microsoft Exchange].
-	Voicemail is supported for Microsoft Exchange Server 2010 and later. A version supporting Voicemail for Microsoft Exchange Server 2007 will be provided if specifically requested.
96709	DHCP Option 160 does not read correctly if there is no forward slash (/) at the end of the sent path.
101269	The Chrome browser cannot be used to manually update the phone's firmware through the Web interface over HTTPS. Internet Explorer can be used instead.
-	[440HD Delegated Line Feature] The phone can present up to 12 incoming calls on the phone's sidecar. Calls over and above the 13th call will not be managed on the sidecar. They will not be displayed nor will they be capable of being picked up. Even if an index on the sidecar will free up, the call will not occupy the free index. A newly free index will be occupied by the next incoming call.
-	[440HD Delegated Line Feature] The phone is currently capable of simultaneously handling up to eight calls per line (configured with the 'number_of_calls_per_line' parameter). If eight calls are concurrently managed on the phone, attempting to pick up an additional call will fail. Other phones in the group can still pick up the call.
-	[440HD phone's 'Delegated Line' feature] Simultaneous configuration of this feature (the 440HD phone's 'Delegated Line' feature) and the phone's BToE feature is not supported.
-	[440HD Delegated Line Feature] Accepting, rejecting and resuming calls must be performed using the softkeys or by picking up the handset. They cannot be performed from the audio device keys – speaker/headset.
-	[440HD Delegated Line Feature] On rare occasions, switching between calls displayed in the phone's sidecar, i.e., picking up calls in succession, one after the other, may cause the phone to handle some pickups incorrectly; best practice is therefore to wait five seconds between each pickup to allow the previous action to finish.
-	[440HD Delegated Line Feature] On rare occasions, ending several calls too fast may cause unexpected behavior; best practice therefore is to have a 5-second delay between actions.
-	[440HD Delegated Line Feature] If two phones simultaneously try to pick up two calls held by a certain phone, one of the pickups may fail. Re-attempting to pick up will be successful.
105213	[Voicemail] If the user calls their voicemail and then gets an incoming call, the call with the voicemail is ended rather than put on hold.
107516	[USB headset] [Plantronics C320] Using the 'Mute' key from the USB headset is not recommended since the headset may lose synchronization with the phone. It's preferable to use the phone's mute key instead.

| Incident	Description
107485	[USB headset] [Jabra HSC016] Using the volume keys on this headset is not recommended as they send an unexpected unmute command. It's advisable to use the phone's mute key and volume up/down keys instead.
-	[USB headset] [Jabra Evolve 65] The headset hook key cannot be used to accept an incoming call. Instead, the incoming call can be answered from the phone.
IPPSFB-4682	[USB headset] [Plantronics Savi W440-M] Calls can't be disconnected via the headset hook control.
108485	[USB headset] Trying to disconnect/reconnect the USB headset several times may result in the phone becoming 'stuck and may require a reboot.
109220	If a muted call is put on hold, the mute stops functioning. This behavior is not incorrect but it's different compared to the phone's behavior in version 3.0.1, hence indicated here.
IPPSFB-3731	An online user without PSTN can be added as a Delegate.
-	[430HD/440HD/445HD] [Boss-Admin] Configuring a delegation deletes the speed dial from the phone screen (because it uses the same keys). Speed dial information is kept in the Device Manager Pro | Express (formerly known as the IP Phone Manager). The speed dial reappears in the phone screen when delegation is disabled.
IPPSFB-5692	[445HD Wi-Fi] Wi-Fi cannot be configured via the Web interface.
IPPSFB-6705	[445HD Wi-Fi] Wi-Fi Protected Setup (WPS) is not supported.
IPPSFB-7277	[445HD Wi-Fi] After adding a new Wi-Fi Access Point via 'Manage Wi-Fi networks', it isn't shown in the available Wi-Fi Access Points list.
IPPSFB-7169	[445HD Wi-Fi] Wi-Fi phone screens are currently available only in English.
IPPSFB-7135	[445HD Wi-Fi] BToE automatic pairing is not supported.
IPPSFB-6815	[445HD Wi-Fi] Switching between a wired and a Wi-Fi connection requires a phone reboot.
IPPSFB-4052	[405HD] Device update is not supported in this version release.
IPPSFB-8152	[C450HD, 445HD] [Wi-Fi] Provisioning using TFTP may fail due to timeout.
-	[450HD] Downgrading the phone's firmware to version 3.0.0.410.24 (released in 2016) may damage the phone. This firmware version may be the default in the Device Manager (IP Phone Manager) deployed in old CloudBond installations. If you see that this firmware version is the default, replace it with the current 450HD GA firmware version before adding 450HD phones.
IPPSFB-8053	Semi-Attended Transfer does not function flawlessly in this release as it should.
IPPSFB-8477	[445HD/C450HD] QoE report modifications related to signal level are incorrect.
-	In an existing conference call, adding a user with a Teams compatible phone and a PC client results in only the PC client ringing and being added to the call.
-	The Teams compatible phone cannot transfer (any Transfer type) an internal call to PSTN when using an SBC working with Direct Routing.
-	The 'Unmute All' feature does not function in a Teams meeting.
-	When escalating a P2P call to a conference with a Teams compatible phone, only the conference initiator's device displays the conference Roster.
-	When a Discreet call is attempted, the 'caller' successfully establishes the 'call' but the auto answer feature on the other side isn't functioning and the user (typically, a member of the organization's security staff) must manually pick up the 'call'.

3.6   Version 3.4.2.229

⚠️ **Note:** Version 3.4.2 includes firmware build **3.4.2.229** for the RX50 conference phone.

Version 3.4.2 is the first version to be released for the RX50 conference phone.

3.6.1   Known Constraints in Version 3.4.2

Here are the constraints known to exist in Version 3.4.2

Table 3-11: Known Constraints in Version 3.4.2

Incident	Description
-	Languages currently supported on the device's Virtual Keypad are: ▪ English ▪ German ▪ French ▪ Hebrew
-	QoE is currently not supported.
-	MoH is currently not supported.
-	Microsoft Device update is currently not supported.
-	Only the default Call Progress Tones (USA standard) is currently supported.
-	Only 20 milliseconds is currently supported for the Packetization time; do not change the default coder list.
-	The debugging tools of TDM and network recording are currently not supported.
-	It's advisable to restore all RX50 devices with versions earlier than 3.4.2.200 to their default settings as the layouts of some screens were subsequently modified.
IPPUC-3198	In a Teams-compatible environment, Teams meetings calls are disconnected after ~1 hour. To prevent this, set the following two parameters to 0: ▪ /voip/signalling/sip/session_timer ▪ /voip/signalling/sip/min_session_interval
IPPUC-2488	The progress bar indicating the upgrading process is sometimes missing. Note that the upgrading process takes 18-20 minutes.
-	[Phone Device Lock] When enabling the phone Device Lock feature, the only lock option is a complete lock; there's no option for a partial lock that allows outgoing calls, etc.
IPPUC-3011	[Phone Device Lock] There's no **Lock** softkey to lock the phone manually.
IPPUC-3012	[Phone Device Lock] The **Emergency** softkey should be displayed in the locked screen.
IPPUC-3187	[Phone Device Lock] There's no **HotDesk** softkey.
-	When changing volume while talking, audio at the far end is cut.
-	During the start up procedure, a short click is heard on the speaker.
IPPUC-3191	After a user adds a contact to their Favorites, the option to 'un-favorite' that contact is missing.

| Incident	Description
IPPUC-2941	After searching for a user in the Call Log lists, touching a search result creates a call to that user without there being an option to access that user's details for the purpose of (for example) calling their office or mobile phone. Accessing a user's details is possible from the Contacts list.
IPPUC-3177	When directly calling a user's voicemail, the 'digits' softkey is missing (and this preventing some advanced options like 'Press the # for more options').
IPPUC-3027	URL dialing is not supported from the 'new call' screen.
104326	[Skype for Business 'Favorites'] The phone does not retrieve Outlook contacts from on-premises Microsoft Exchange servers.
103639	[Multi-Party Skype for Business Remote Conferencing] When a conference is locked, the phone cannot add a user (Skype for Business client or other certified phone) if not admitted within 15 seconds.
103927	Sometimes, the user is unable to join a Skype for Business meeting whose configured 'End time' has passed.
103651	Provisioning by the Redirect Server doesn't function if the phone receives any provisioning of configuration URL via DHCP options.
93495	The Web interface displays some screens that are inapplicable to Skype for Business.
-	Call Log information is saved to the phone file system once every six hours. Consequently, Call Log information such as missed, received and outgoing calls may not be saved after restarting. [Only relevant if Microsoft Exchange isn't used, i.e., if a user performs a PIN sign-in or if a user is without Microsoft Exchange].
-	Voicemail is supported for Microsoft Exchange Server 2010 and later. A version supporting Voicemail for Microsoft Exchange Server 2007 will be provided if specifically requested.
96709	DHCP Option 160 does not read correctly if there is no forward slash (/) at the end of the sent path.
101269	The Chrome browser cannot be used to manually update the phone's firmware through the Web interface over HTTPS. Internet Explorer can be used instead.
105213	[Voicemail] If the user calls their voicemail and then gets an incoming call, the call with the voicemail is ended rather than put on hold.
IPPSFB-8053	Semi-Attended Transfer does not function flawlessly in this release as it should.
-	In an existing conference call, adding a user with a Teams compatible phone and a PC client results in only the PC client ringing and being added to the call.
-	The Teams compatible phone cannot transfer (any Transfer type) an internal call to PSTN when using an SBC working with Direct Routing.
-	The 'Unmute All' feature does not function in a Teams meeting.
-	When escalating a P2P call to a conference with a Teams compatible phone, only the conference initiator's device displays the conference Roster.
-	When a Discreet call is attempted, the 'caller' successfully establishes the 'call' but the auto answer feature on the other side isn't functioning and the user (typically, a member of the organization's security staff) must manually pick up the 'call'.

3.7   Version 3.2.1.488

⚠️ **Note:** Version 3.2.1 includes firmware build **3.2.1.488** for the 405HD, 430HD, 440HD, 445HD, 445HD-R, 450HD, C450HD phone models, and the Huddle Room Solution (HRS).

■ Support is now provided for configuring the 802.1x/EAP-TLS identity header in the phone's configuration file.

3.8   Version 3.21.474

When using Web (Office 365) Sign In, a new notification shown in the figure below was added to notify users to sign in to the phone again for the new client ID to be used for OAuth 2.0 modern authentication instead of the old one. The notification will be presented only if the phone is not using the new Client ID already. For more information about OAuth 2.0 modern authentication, see the first feature described under Section 3.11.
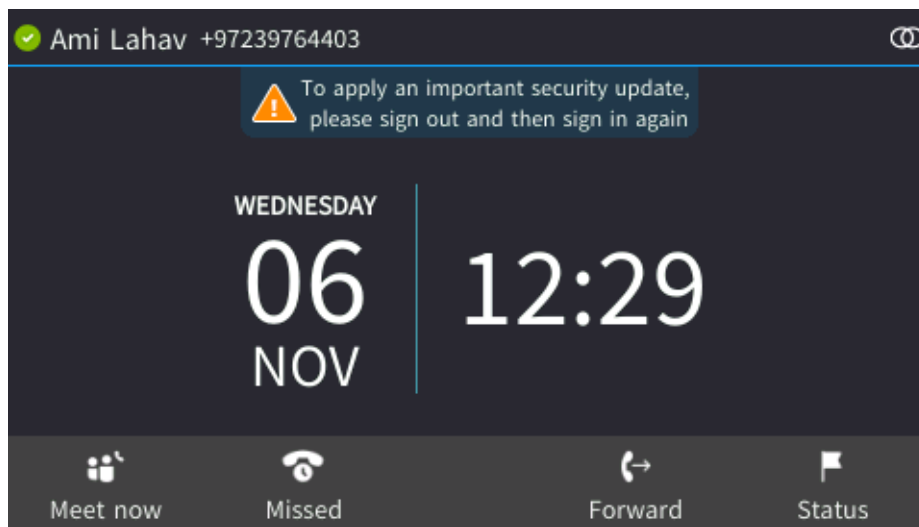
3.9   Version 3.2.1.438

> **Note:** Version 3.2.1 includes firmware build **3.2.1.438** for the 405HD, 430HD, 440HD, 445HD, 445HD-R, 450HD, C450HD phone models, and the Huddle Room Solution (HRS).

■   The phone supports the option to perform a **Switch to Native Teams action** using the AudioCodes Device Manager Pro / Express (implemented by the REST API). OVOC version 7.6.2000 fix will be required to allow this new action from the Device Manager.

■   When the calendar is updated, a **new icon** displayed in the figure below has replaced the 'Update Meetings...' pop-up message.
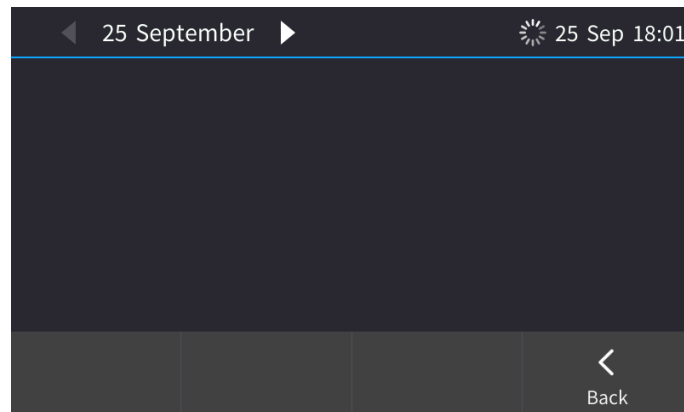
■   **Improved IP phone security**. Network administrators are given **more control over phone access**. Access to the phone's Web Server (Web interface and Device Manager), Telnet Server and SSH Server is allowed by default from any IP address. The default setting (**0**) of new 'whitelist' configuration file parameters that have been added to this version, allow this access:

security/whitelist/web_server/enabled=**0**

security/whitelist/telnet_server/enabled=**0**

security/whitelist/ssh_server/enabled=**0**

The configuration below allows access *only from the Device Manager* to the phone's Web Server (Web interface and Device Manager), Telnet Server and SSH Server:

security/whitelist/web_server/enabled=**1**

security/whitelist/telnet_server/enabled=**1**

security/whitelist/ssh_server/enabled=**1**

Another new 'whitlelist' configuration file parameter 'security/whitelist/ip' has been added to the version. It allows network administrators to define an IP address. Defining an IP address allows access to the phone's Web Server (Web interface and Device Manager), Telnet Server and SSH Server *from this IP address in addition to the Device Manager's IP address.*
[Applies to all phones except 405HD / 430HD / 440HD].

3.10   Version 3.2.1.391

> **Note:** Version 3.2.1 includes firmware build **3.2.1.391** for the 405HD, 430HD, 440HD, 445HD, 445HD-R, 450HD, C450HD phone models, and the Huddle Room Solution (HRS).

■ **Improved support for Microsoft Teams compatible (a.k.a. 3PIP devices) mode**.

Full support for some basic features that were functioning imperfectly in previous releases:

- Consultative Transfer
- Escalate P2P call to Teams Conference
- Direct Routing environment on audio issues
- Call queue

The following features were tested as fully functioning on Teams compatible devices:

- Contacts and Speed Dials
- Exchange functionality (VVM and Calendar)
- Audio pairing with the Teams client (Voice only; no control from the phone; controls will be added in the future)
- Multicast Paging
- Discreet Call
- Hot Desking
- Common Area Phone
- Voice dialing (limited languages supported)

Currently unsupported in Teams compatible mode:

- Boss-Admin
- Enabling Call Forward via the phone menu (can be enabled from the Teams client)
- Changing the phone presence is not synchronized with the Teams presence status
- Call Park

Note that transfer scenarios in a domain that has a mix of Teams and Skype for Business users is not supported by Microsoft.

Table 3-12: Known Teams-Compatible (a.k.a. 3PIP) Device Limitations in Teams Environments

Incident	Description
-	In an existing conference call, adding a user with a Teams compatible phone and a PC client results in only the PC client ringing and being added to the call.
-	The 'Unmute All' feature does not function in a Teams meeting.
-	When escalating a P2P call to a conference with a Teams compatible phone, only the conference initiator's device displays the conference Roster.
-	When a Discreet call is attempted, the 'caller' successfully establishes the 'call' but the auto answer feature on the other side isn't functioning and the user (typically, a member of the organization's security staff) must manually pick up the 'call'.

■ Support for the **Elliptic Curve Diffie Hellman (ECDH)** encryption key as part of the phone's ciphers list.

■ AudioCodes' new corporate logo is also displayed in the 405HD phone screen when booting up.

3.11   Version 3.2.1.236.59

> **Note:** Version 3.2.1 includes firmware build **3.2.1.236.59** for the 405HD, 430HD, 440HD, 445HD, 445HD-R, 450HD, C450HD phone models, and the Huddle Room Solution (HRS).

■ **New client ID for OAuth 2.0 modern authentication** in compliance with IETF RFC 6749. The new feature complies with Microsoft's request to register the phone application on the Azure cloud service portal and to apply permissions. The network administrator can enable the new client ID to be used after it's approved. See also https://online.audiocodes.com/oauth-2-0-appid.

The following new parameter in this release allows network administrators to configure a new client_id:

lync/sign_in/azure/Enable_new_client_id = **0** or **1** (default)

If set to **0**, the phone will use the previous client_id as part of the Oauth2.0 process.
If set to **1** (default), the phone will use a new client_id as part of the Oauth2.0 process.

■ **Support for enterprise HTTP/S proxy servers** enabling phones in an enterprise to send packets via the enterprise's proxy server instead of sending packets directly to the server. The new support enables customers to leverage their proxy as security when accessing cloud services. The following new configuration file parameters have been added to support the capability:

- http_client/fwd_proxy/ip
- http_client/fwd_proxy/port
- http_client/fwd_proxy/username
- http_client/fwd_proxy/password
- http_client/fwd_proxy/direct/ip
- http_client/max_host_connections

> **Important:**
>
> - If the proxy server's username and password are not configured, the phone will use the NTLM domain's username and password.
> - If 'username' is configured, then 'password' must also be configured as it will not be taken from the domain's data.
> - To disable network communications going through the proxy server, the proxy IP address can be configured to "0.0.0.0".

■ **The C450HD phone supports Wi-Fi**. The phone can connect to an Access Point via Wi-Fi. The Wi-Fi interface can be used when the phone is installed in an environment free of LAN/cables, to perform VoIP calls over Wi-Fi. Users can connect by pressing the **Networks** icon in the phone's main menu -or- navigating in the 'Settings' menu and then selecting the **Wi-Fi** option.

■ **445HD-R IP Phone without the Expansion Module (sidecar) and BLFs + 12 SDs**. The 445HD-R IP phone models UC445HDG-R and UC445HDEPSG-R (shown below) are identical to the 445HD IP phone but do not feature the Expansion Module (sidecar) nor the BLFs + 12 Speed Dials.

.

■ **C450HD IP phone screen saver**. A screen saver displaying a digital clock was added to the C450HD phone (in version 3.2.0 which was C450HD-specific). The feature will allow future customization of the phone. By default, the feature is enabled, but the network administrator can disable it on request with a new configuration file parameter: 'personal_settings/ScreenSaverEnabled'
The timeout is triggered after 300 seconds by default, but it can be configured to 0-600 seconds using the configuration file parameter 'personal_settings/ScreenSaverAwakeTimeout' that has also been added.
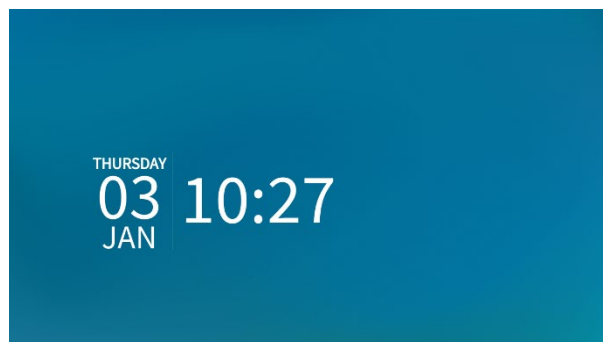
■ **Support for SSH (Secure Shell) protocol** for secure remote login to the 450HD, C450HD and 445HD phone models and the HRS. Network administrators can use a newly added configuration file parameter 'management/ssh/enabled' to enable the feature (by default, it is set to 0, i.e., disabled).

■ **A phone in BToE mode automatically performs Sign Out** if the BToE application detects that the Skype for Business client is signed in with a different account.

> **Note:**
>
> • Applies only if the phone and the Skype for Business client were automatically paired. If they were manually paired, the feature does not apply.
>
> • Supported only by BToE version 2.1.10 (not yet released but available on request).

■ Pressing the **X hard key on the phone provides 'Back' functionality.** The **X** hard key was used for both 'Back' and 'Cancel' actions in previous releases. Starting from this release, the key is used for 'Back' only. The difference between the current version and previous versions is that if a user now presses the key while a call is in process, the 'Back' functionality works without disconnecting the existing call. In previous versions, the call was disconnected. Applies to 445HD, 445HD-R, 450HD, C450HD, HRS.

3.12   Version 3.1.4

⚠️ **Note:** Version 3.1.4 includes firmware build **3.1.4.116** for the 405HD, 430HD, 440HD, 445HD and 450HD phone models, and the Huddle Room Solution (HRS).

■ **Wi-Fi capability on the 445HD**. The 445HD phone can connect to an Access Point via Wi-Fi. The Wi-Fi interface can be used when the phone is installed in an environment free of LAN/cables, to perform VoIP calls over Wi-Fi. Users can connect by pressing the **Networks** icon in the phone's main menu -or- navigating in the 'Settings' menu and then selecting the **Wi-Fi** option.

- If an Ethernet cable does not connect the 445HD phone to a LAN port, the phone displays a 'LAN Link Failure' message and a **Networks** softkey.
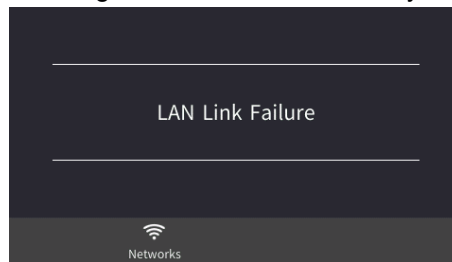
- Wi-Fi settings can also be accessed via the MENU hard key > Settings > Wi-Fi Settings:
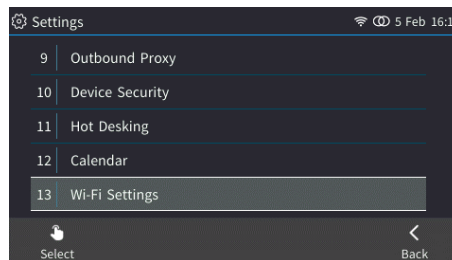
- Wi-Fi is disabled by default. Wi-Fi is enabled | disabled by pressing the right rim | left rim of the navigation button on the phone:
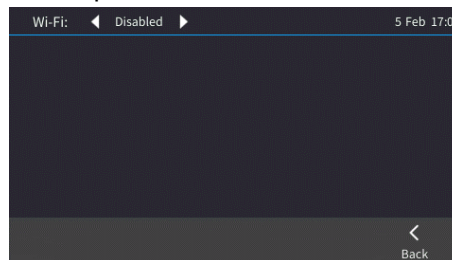
After enabling Wi-Fi, the screen indicates the phone is 'Searching for networks…'. The phone then displays the available Wi-Fi Access Points. If necessary, the user can press the **Refresh** softkey to display more options:

- After selecting a Wi-Fi Access Point, the user must configure Access Point parameters:
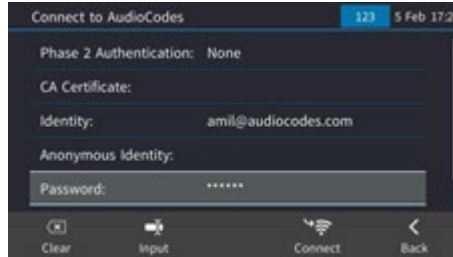
- After configuring the Wi-Fi parameters, the user presses the **Connect** softkey again and waits about 20-30 seconds for the phone to connect to Wi-Fi and receive an IP address; the Wi-Fi icon is then displayed in the uppermost right corner of the screen:
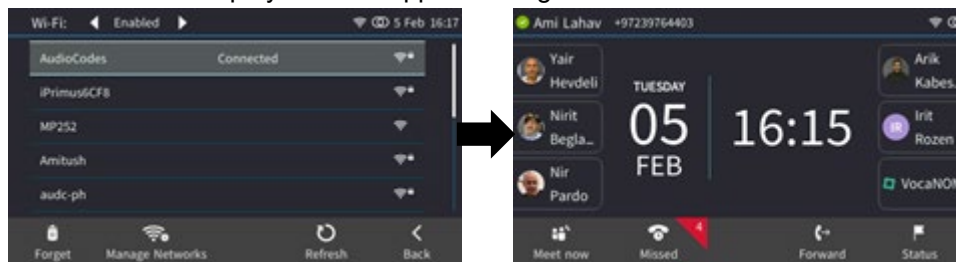
- The phone supports the following authentication methods:
  - Open, no password
  - Shared, encryption type WEP
  - WPA2 Personal, encryption type AES or TKIP
  - WPA Personal, encryption type AES or TKIP
  - WPA2 Enterprise, encryption type AES or TKIP
  - WPA Enterprise, encryption type AES or TKIP
  - 802.1x, encryption type WEP

- The phone allows users to determine Wi-Fi status (network name, authentication method and Wi-Fi signal strength) from the Wi-Fi Network Info screen (Device Status > Wi-Fi).
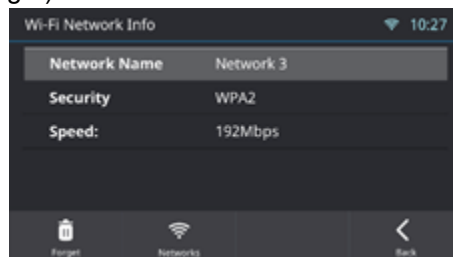
■ **Electronic Hook Switch (EHS) on the 445HD phone**. The 445HD phone supports the Electronic Hook Switch (EHS) DHSG feature. Calls can be answered and volume level can be changed with EHS-capable headsets. The feature was verified on Jabra® PRO 920, Jabra® PRO 9450 headsets, Plantronics® CS540™ and Plantronics SAVI® W745 and require a special EHS cable (purchased from AudioCodes).

The headset's base unit connects to the phone's headphone port. The Audio connector connects to the headphone's port. The management connector connects to the Auxiliary port using a DHSG cable which can be ordered from AudioCodes. The feature can be enabled using the Web interface or Configuration File through parameter 'Electronic Hook Switch' and parameter 'voip/services/electronic_hook_switch/enabled respectively'. The feature allows users to handle calls, i.e., answer calls and change volume level, with EHS-capable wireless headsets at a distance from the phone.

■ **Server Certificate validation for secured HTTPS communications over SSL** configured via the configuration file parameter 'security/SSLCertificateErrorsMode' decreases vulnerability to breaches of security. If validation fails after installing phone firmware, HTTPS communication with Skype for Business and EWS servers are impacted, including but not restricted to Skype for Business auto-discover, contacts search, EWS auto-discover, Outlook Calendar, Authorization, etc. The certificate is verified in two steps:

1. The Root CA is installed using DHCP option 43, LDAP or the Web interface.
2. The server's hostname is validated; for each certificate in the chain, the 'issuer' field in the certificate must match the 'subject' field of the issuer (uppermost in the chain) certificate.

Backward compatibility is supported. To implement backward compatibility, the configuration file parameter 'security/SSLCertificateErrorsMode' must be changed from the default to **Ignore**:

• SSLCertificateErrorsMode = **Disallow** (default); TLS connection will be rejected and the phone will not communicate with the server.
• SSLCertificateErrorsMode = Ignore (allows backward compatibility though vulnerability will increase); the phone will proceed without checking the received certificates and without any notifications.

■ **New 'Offline' user status on the phone**. This new feature is identical to the user offline status supported by Skype for Business client, namely, that a user's presence status can be defined as 'Offline'. The 'Offline' status must be configured in the Skype for Business server (using parameter 'EnableAppearOffline' which must be configured to **True**).

■ **The 'Discreet Call' feature can be disabled**. The network administrator can configure a new configuration file parameter 'personal_settings/discreet_call/enabled' to **0** to disable the Discreet Call feature.

■ **New notifications are displayed when the phone is in recovery mode** to facilitate a friendlier user | network administrator experience; all phone models display:

• 'Downloading Firmware Image' when downloading the recovery image
• 'Upgrading Firmware in Recovery Mode' when burning the recovery file
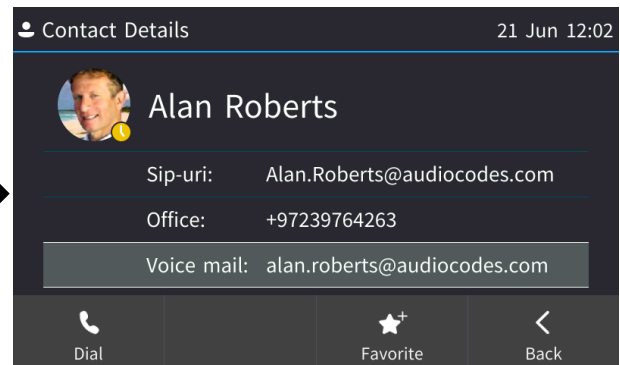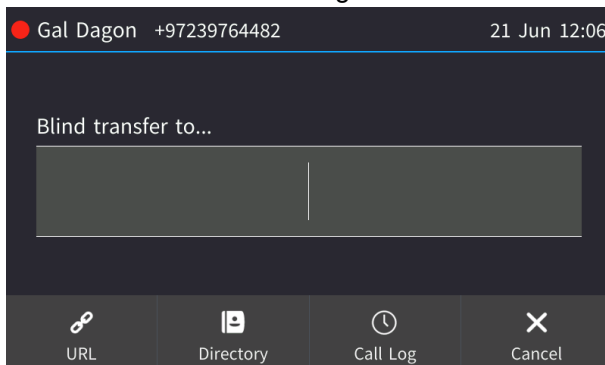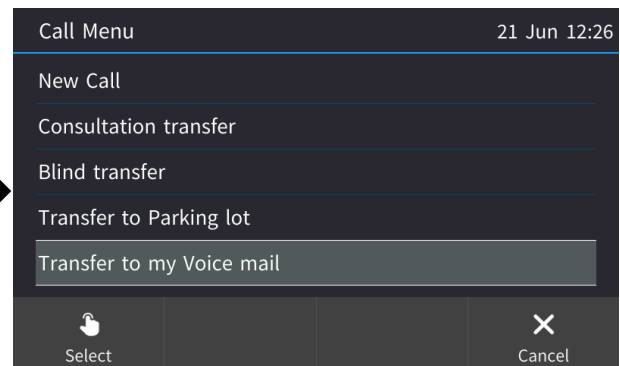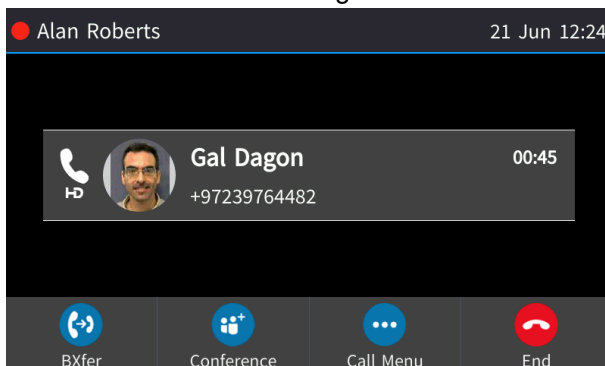
3.13   Version 3.1.3

> **Note:** Version 3.1.3 includes firmware build **3.1.3.144.15** for the 405HD, 430HD, 440HD, 445HD and 450HD phone models, and the Huddle Room Solution (HRS).

■ **A call can be made in discreet mode**. The feature answers a requirement for more security measures such as a silent mode call for public institutions. If a call is made in discreet mode, it's a one-way call to a remote phone. The caller's phone does not indicate audially that a call is in progress. The phone's screen remains in idle mode and the backlight is not activated. The only indication that a call is in progress is the presence status of the caller changes to red (busy). The caller cannot end the call. The call is activated by a new, user-configurable function key:

Functional Key	23 Oct 12:49
Functional key: 1	
◄ Discreet Call ►	
🖱 Select	‹ Back
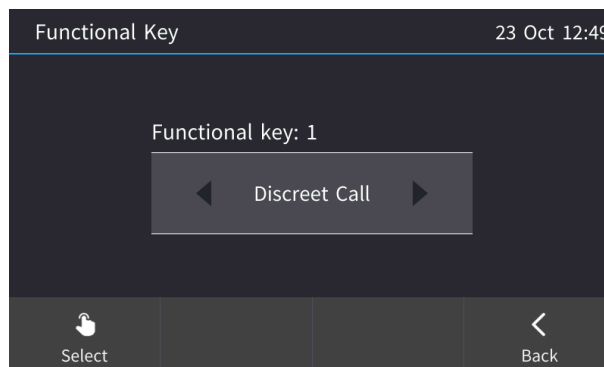
It's recommended that the called party's phone be a dedicated phone to avoid the scenario of being on another call when needed for the discreet call; the phone automatically answers the discreet call; there is no need to pick up the handset. The called party then 'listens' to what's happening at the caller's end. When the called party ends the call, the call ends on both sides.

The following new configuration file parameters have been added to support this feature:

- personal_settings/functional_key/[X]/key_label
- personal_settings/functional_key/[X]/speed_dial_extension
- personal_settings/functional_key/[X]/speed_dial_number
- personal_settings/functional_key/[X]/type

Network administrators must configure the last-mentioned configuration file parameter 'personal_settings/functional_key/[X]/type' to **DISCREETCALL**.

> **Note:**
> - Both caller and called party phones must be AudioCodes phones.
> - The feature is not supported on the 405HD phone.
> - Device Lock must be disabled on the called party's phone
> - The call runs via the Skype for Business server as a regular call when the phone tunes the behavior to match the required functionality.

■ **BToE support for Citrix XenDesktop virtual desktop infrastructure (VDI)**. BToE can connect a phone in a XenDesktop environment. To connect the phone to XenDesktop, the network administrator must set the configuration file parameter '/lync/BToE/pairing_mode' to the newly available value **VDI**. BToE version 2.1.8 must be installed.

BToE runs in the following XenDesktop modes:

- **Persistent Sessions**. In this mode, a dedicated VM is used per user; it's always active.

- **Non-Persistent Session**. In this mode, the user is connected to an available VM in the pool. After the user logs off, the machine can be used by another user. When the user is connected, their settings and data are restored.

After the user is connected to the XenDesktop environment and signs-in to Skype for Business, all BToE functions are available. BToE runs on Xen Desktop, paired manually to the phone. The user's pc running the XenDesktop client can be connected directly to the phone. The BToE application runs on XenDesktop and is paired via manual IP pairing. During a video call, audio is routed from the XenDesktop client to the phone.

> **Note:**
>
> - HDI optimization must be is disabled for BToE to function correctly with Citrix XenDesktop.
> - XenDesktop (for remote users) runs on Windows 10.
> - Thin client is not supported.

- ■ **The BToE application is more flexible in terms of the user name format**. The BToE application can now receive the username in NetBIOS format (**domain\user**, for example, **companyname\johnb**) in addition to the existing User Principal Name (UPN) format (**user@domain**, for example, **johnb@companyname.com**) to sign in via the Skype for Business client. BToE version 2.1.8 must be installed.

  A new configuration file parameter 'lync/BToE/use_UPN_str' has been added to support this feature. The network administrator must configure it to 1 (Default: 0).

- ■ **450HD phone users and HRS users can access speed dials when an established call is in progress**. A new softkey has been added to the 450HD phone and to the HRS to allow users to access configured speed dials during an active call. The access allows a user to transfer a call to a third party for whom a speed dial was configured, add a participant to whom a speed dial was configured to a conference, etc.
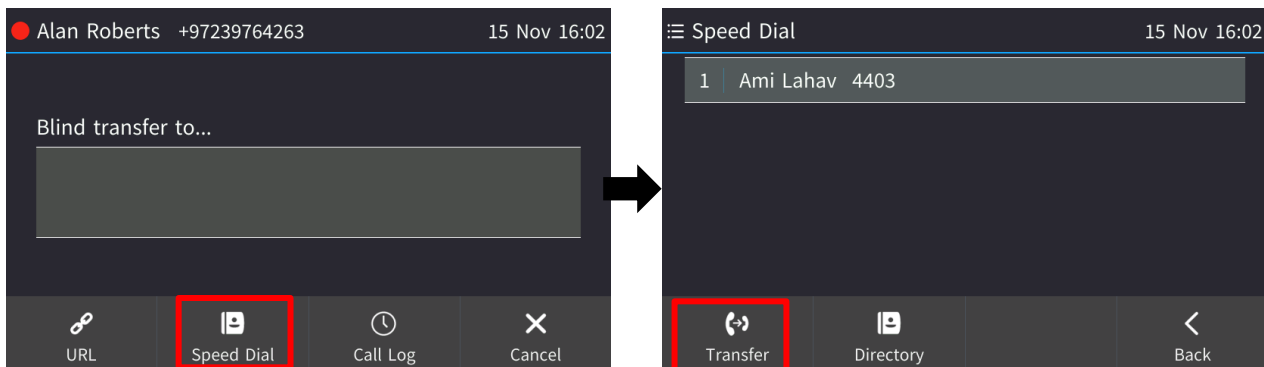
Users of the 450HD phone and HRS can also access the speed dials when the phone is idle, by pressing the CONTACTS hard key and then selecting Groups.
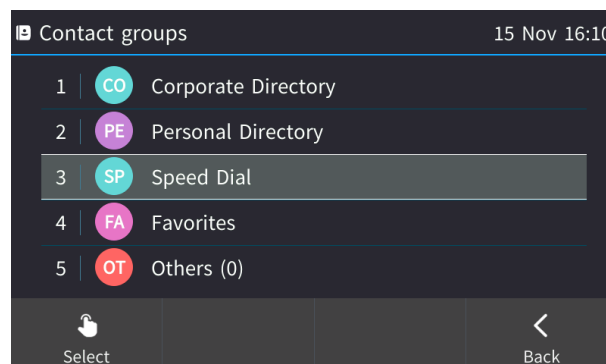
■ **A contact's initials [in color] are displayed instead of the contact's picture if the phone does not find the contact's picture**.
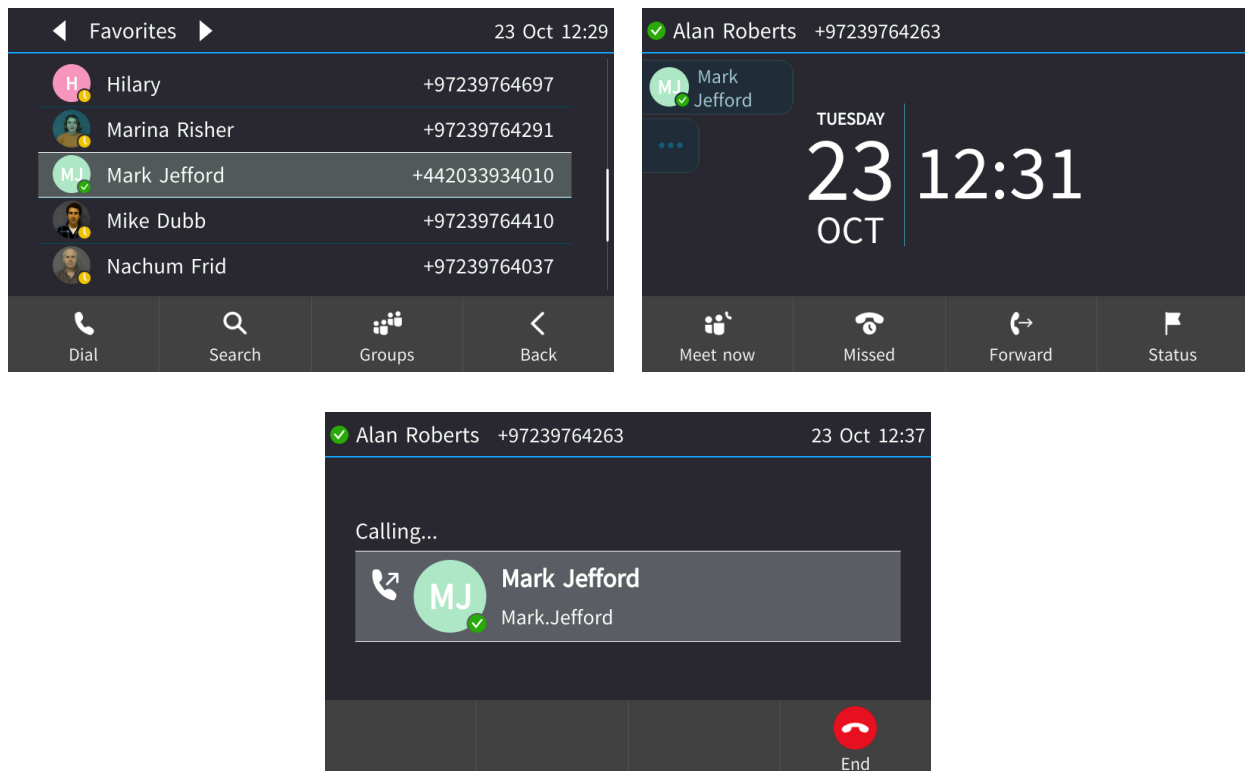
The figures show the Favorites screen [upper left] including a contact's initials instead of their picture, the idle screen [upper right] with a speed dial to a contact, and the Calling screen [lowermost].

Contacts' initials are also briefly displayed when opening (for example) the Calls Log before the phone finds and loads the contacts' pictures.

■ **Configuration of Programmable Keys in the HRS phone's screen is now allowed**. Users were previously restricted from configuring programmable keys in the HRS.

■ **Network administrators can allow / disallow management via the phone's Web interface without requiring a phone reboot**. A new configuration file parameter 'system/web/enabled' has been added to support the feature.

- **0** disallows management via the phone's Web interface
- **1** (default) allows management via the phone's Web interface

3.14   Version 3.1.2

> ⚠️ **Note:** Version 3.1.1 includes firmware build **3.1.2.89** for the 405HD, 430HD, 440HD, 445HD and 450HD phone models, and the Huddle Room Solution (HRS).

■ **Enhanced speed dialing [450HD phone]**. The user can now long-press a speed dial displayed in the 450HD phone's screen or in the 450HD phone Expansion Module, for a popup menu to pop up. The new long-press option replaces the previous option which was to configure a Function Key.
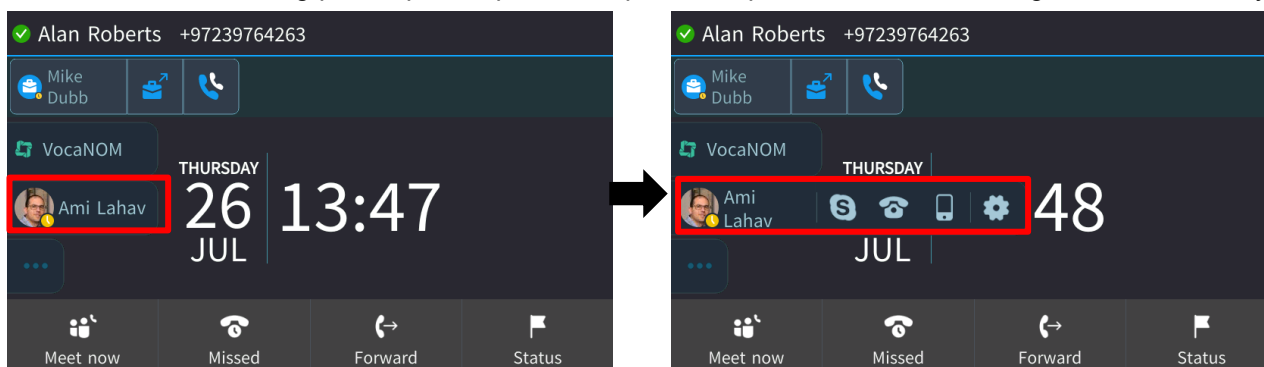
The user can then touch an item in the popup menu to directly activate its functionality.

Popup Menu Item	Functionality
S	Directly calls the Skype for Business phone of the contact to whom the speed dial is configured.
☎	Directly calls the office phone of the contact to whom the speed dial is configured.
📱	Directly calls the mobile phone of the contact to whom the speed dial is configured.
⚙	Opens the Function Key settings for quick access to the configuration of the speed dial to the contact.

> ⚠️ **Note:** *Touching* a speed dial still dials the default option, namely, a Skype for Business call.

■ The **Web login method** for signing in to the phone has been improved security-wise, whereby the IP Phone Manager now acts as a secure proxy between the user's browser and the phone. The aim of this enhancement is to allow the use of HTTPS with signed certificates between the user's PC browser and the IP Phone Manager. The IP Phone Manager Pro/Express server *intermediates* between the user's internet browser and the phone. This feature is supported by IP Phone Manager Pro/Express from Version 7.4.3093 and later. For earlier versions, the phone falls back to the previous Web login method and allows the user to sign-in by browsing directly to the phone.
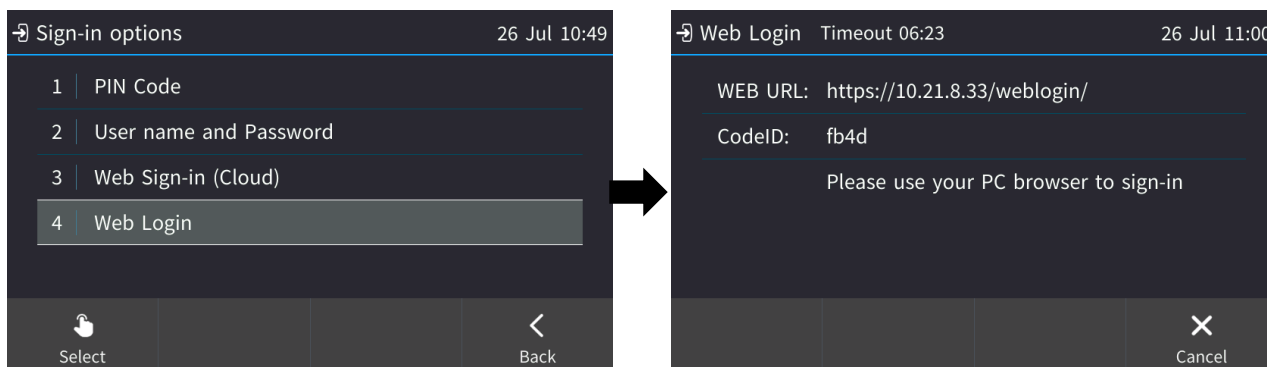
- The parameter 'Secure (HTTPS) communication' in AudioCodes' IP Phone Manager Pro/Express management interface must be enabled for the Web Login feature to function.
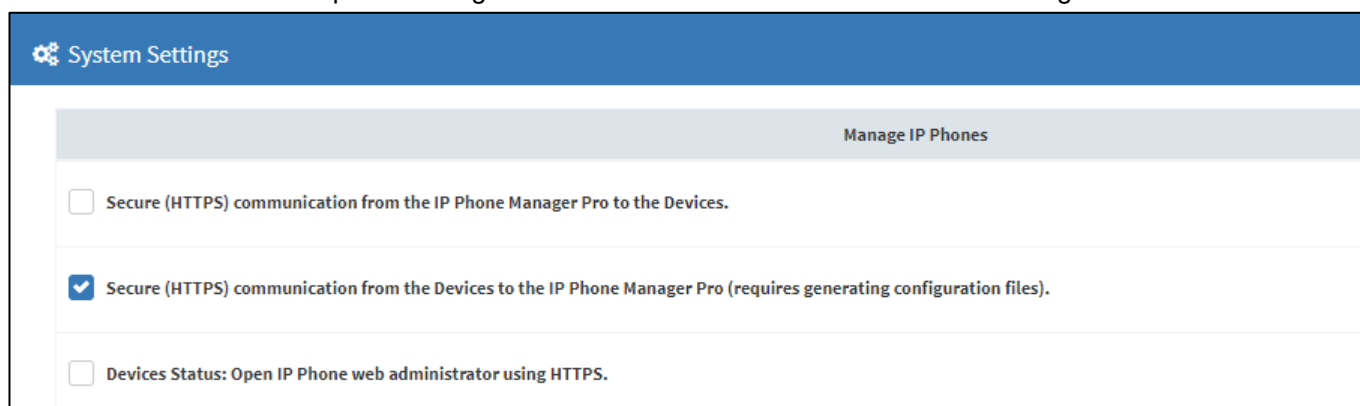
- In the internet browser, the user browses over HTTPS to the URL that is displayed on the phone's LCD. This URL resides on the IP Phone Manager Pro/Express server.
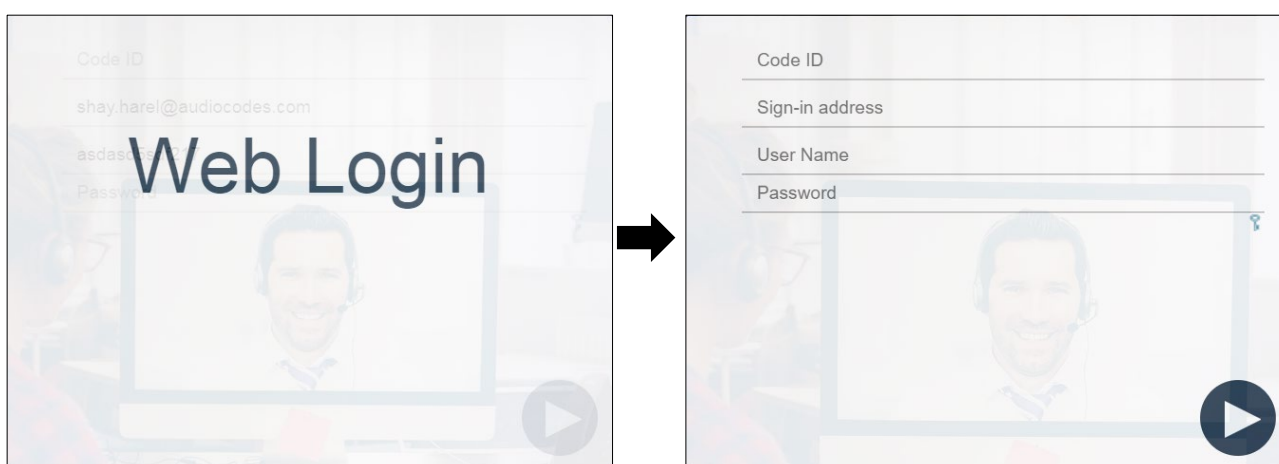
- The Code ID is a random 4-character string generated by the IP Phone Manager Pro/Express server. The user gets it from the phone screen prompt. It's valid for 10 minutes. The user uses the PC keyboard to enter the Code ID and the user credentials.
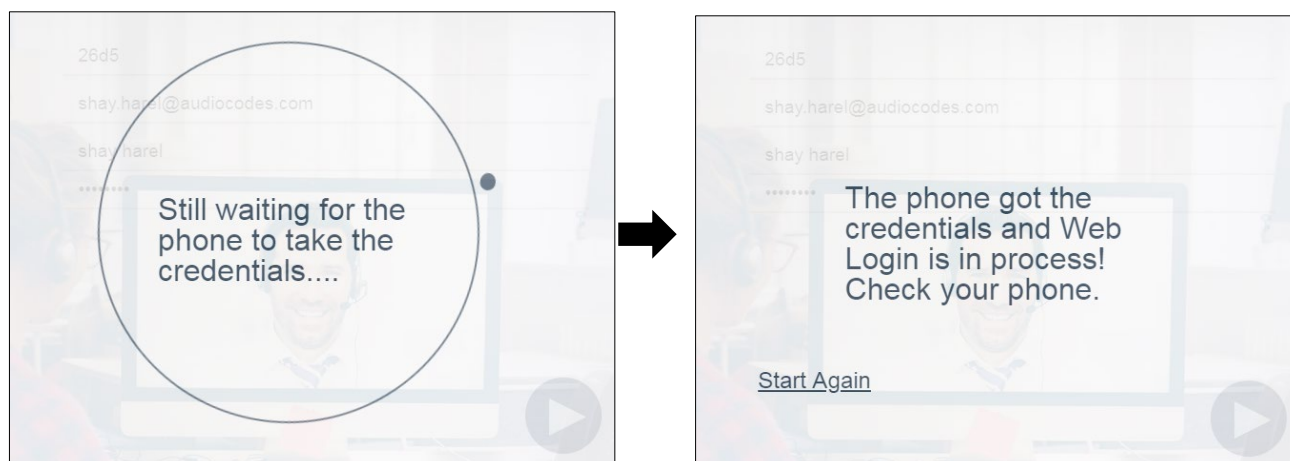
- The server then sends the credentials over HTTPS to the phone. If the phone screen indicates that the Web Login is unsuccessful, the user can 'Start Again' and enter their credentials.

Note: For old IE browsers, you may need to clear the **Display intranet sites in Compatibility View** check box (Tools > Compatibility View Settings).
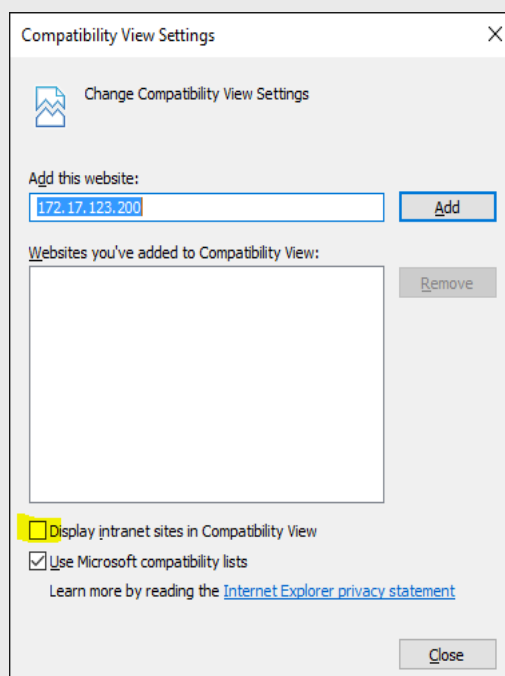
■ **The phone displays Calendar meetings configured as 'Private' in Microsoft Exchange, without identifying details such as subject**.
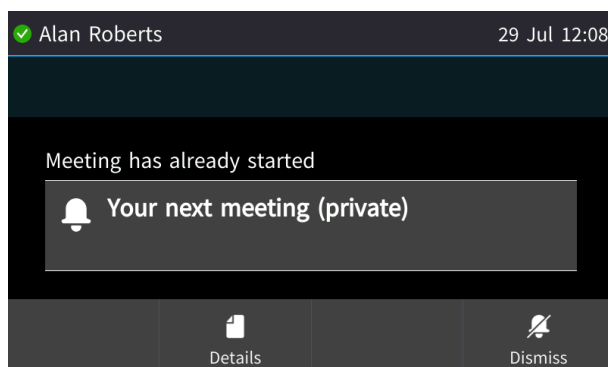
3.15   Version 3.1.1

> ⚠️ **Note:** Version 3.1.1 includes firmware build **3.1.1.43.1** for the 405HD, 430HD, 440HD, 445HD and 450HD phone models, and the Huddle Room Solution (HRS).

■ **New options to transfer to voicemail**:

- Users can *directly call a contact's voicemail* and leave their voice message in it
- Users can transfer an existing call to *My Voicemail*, that is, to their own voicemail
- Users can transfer an existing call with contact X *to the voicemail of contact Y*
- Transferring X to Y's voicemail:

● Gal Dagon +97239764482 21 Jun 12:06	≛ Contact Details 21 Jun 12:02
Blind transfer to…	**Alan Roberts** Sip-uri: Alan.Roberts@audiocodes.com Office: +97239764263 Voice mail: alan.roberts@audiocodes.com
URL Directory Call Log Cancel	Dial Favorite Back

- The Contact Details screen shown above is also used to directly call a contact's voicemail but the screen is accessed from the Directory.
- Transferring an established call to My Voicemail:

● Alan Roberts 21 Jun 12:24	Call Menu 21 Jun 12:26
Gal Dagon 00:45 +97239764482	New Call Consultation transfer Blind transfer Transfer to Parking lot Transfer to my Voice mail
BXfer Conference Call Menu End	Select Cancel

■ **Distinctive Ringing has been enhanced to allow control over the volume of Boss's ringtone**. Boss-Admin distinctive ringing was added in the previous version release to allow the Admin to configure a distinctive ring for each configured Boss. In this version release, the Admin can set a different volume for each Boss's ringtone.

■ **The 'Speed Dial' option** *includes* **'Speed Dial + BLF'**. From this version on, the 'Speed Dial + BLF' (Busy Lamp Field used to indicate user presence) option is *included* in the 'Speed Dial'. 'Speed Dial' detects and presents user presence as well as allowing quick dialing.

3.16   Version 3.1.0

> **Note:** Version 3.1.0 includes firmware build **3.1.0.610** for the 405HD, 430HD, 440HD, 445HD and 450HD phone models, and the Huddle Room Solution (HRS).

- **Contact Pictures** are now displayed in the screens of the 450HD phone, 450HD Expansion Module, 445HD phone and the HRS. Contact pictures are displayed for speed dials in the idle screen, Favorites, incoming calls, outgoing calls, conference calls, visual voice mail and call logs.
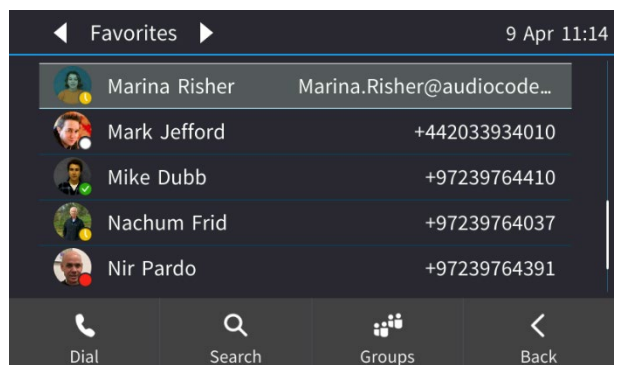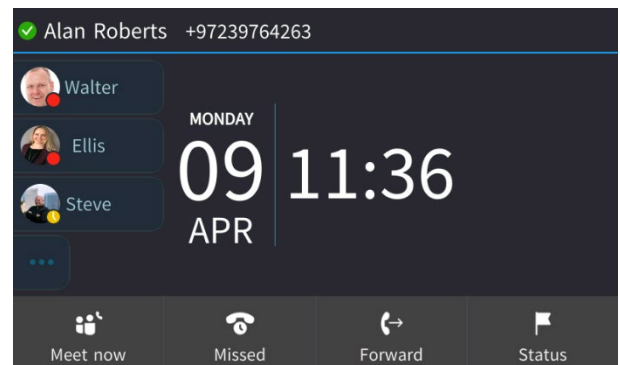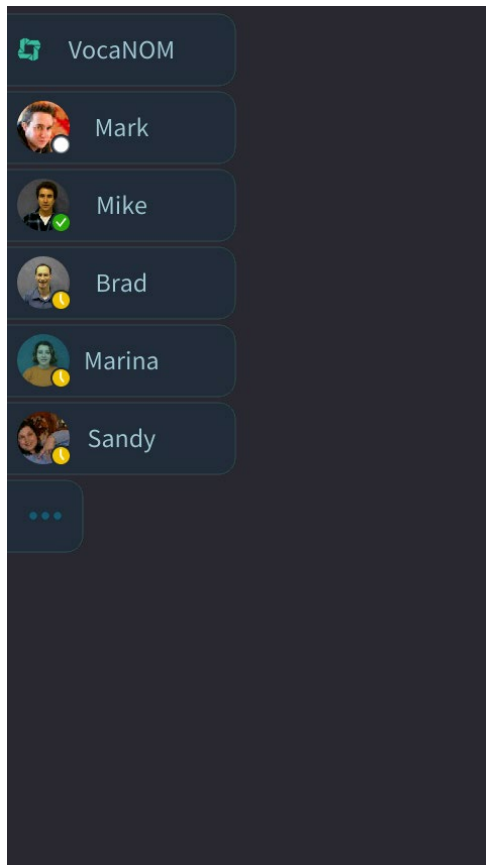
- **445HD phone now supports Boss-Admin (Delegated Line)**

    - Allows a relationship to be established between a boss' phone and an administrative secretary's phone, to streamline office workflow and enhance efficiency.
    - Each phone can support up to five Bosses or Admins. One Boss can have up to five Admins. One Admin can have up to five Bosses. A many-to-many configuration is also supported.
    - The phone's idle screen displays Bosses | Admins. The 'Calls' key allows viewing active calls.
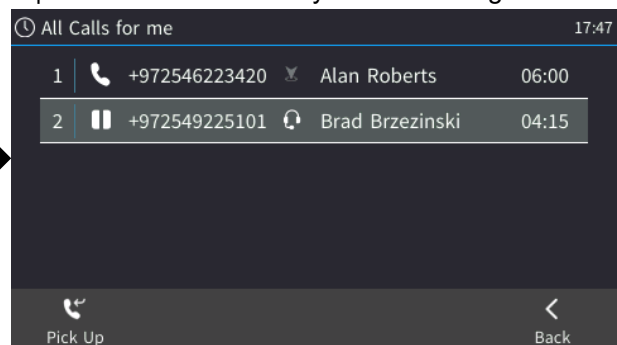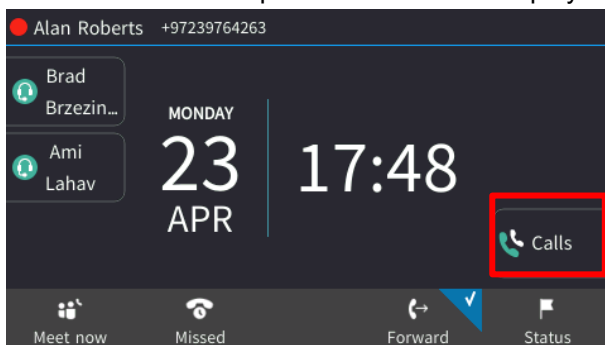
An Admin key allows viewing a Details call list.
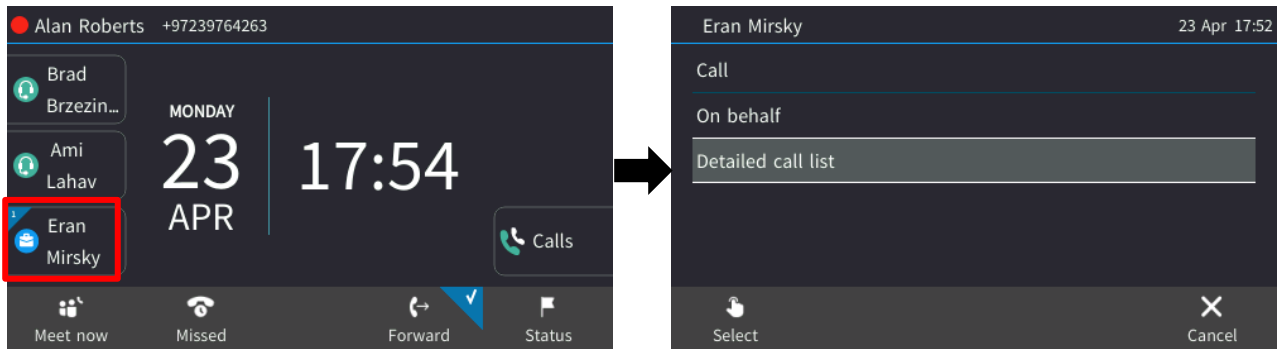
If an Admin puts a call on hold, the Boss can Pick Up the held call.
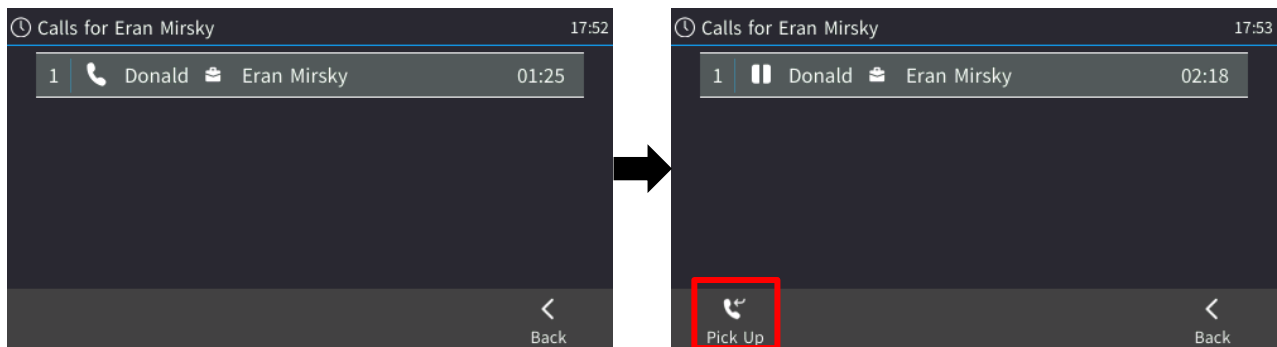
- **Call Forwarding has been enhanced** to allow users to set all options currently available on the Skype for Business client, such as 'Call Forward with Delegation', 'Simultaneous ring' and 'Forward unanswered calls'. Users can add Delegates directly from the phone and opt to configure the phones to ring simultaneously. Users can also easily enable calls forward to a mobile phone.
  - The **Team-call group** configuration option for the 'Simultaneously ring' parameter will be viewed in the phone screen after it is configured using Skype for Business client.
  - The 'Forward unanswered calls' parameter allows users to configure the phone to send unanswered calls to voicemail or to a phone number, and to define the unanswered timeout.
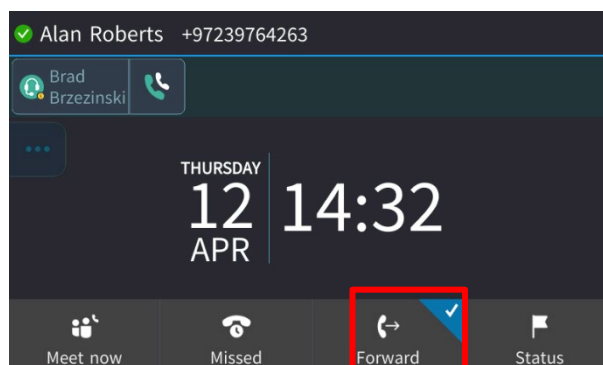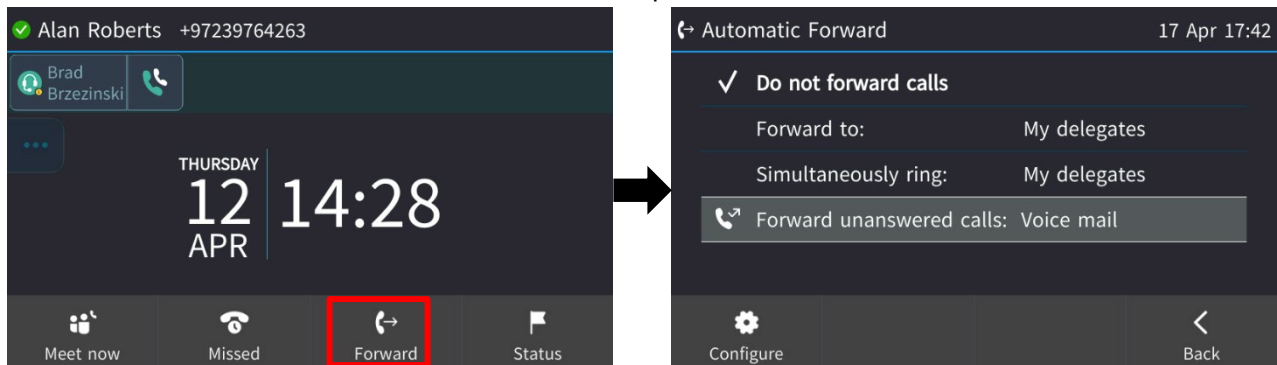
■ **Boss-Admin distinctive ringing**. Admin can configure on Admin's phone a distinctive ring for each configured Boss, allowing Admin to audially distinguish between incoming calls for Bosses, optimizing Admin's work efficiency.

Settings	17 Apr 18:03
1 Language	
2 Ring Tone <Ring01>	
3 Boss' Ring Tone	
4 Call Waiting <Enabled>	
5 Forward Settings	
Select	Back

Boss ID	17 Apr 18:05
1 Brad Brzezinski	
Select	Back

Ring Tone	17 Apr 18:06
✓ Ring01	
Ring02	
Ring03	
Ring04	
Ring05	
Select	Back
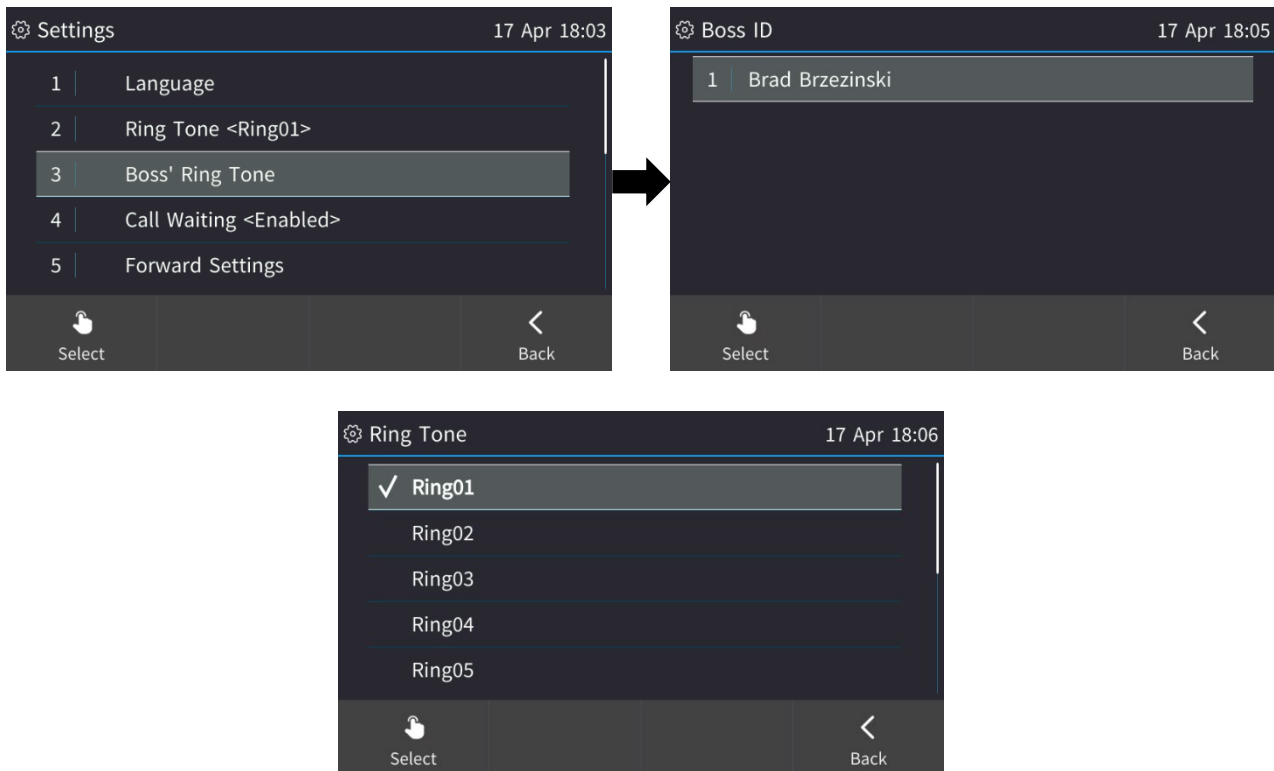
■ **Distribution Groups**. Allows viewing users who are part of Active Directory distribution groups (that were preconfigured as Favorites in the Skype for Business client) on the phone screen. With this feature, users from distribution groups can be called, invited to conference calls, etc.

■ **AudioCodes' new corporate logo** is now displayed on its phones and in management interfaces.

■ **Phone diagnostics enhancements**:
- The phone Web interface's Diagnostics page was modified to include better debugging options:
  - The 'Logging' Web page has been replaced with 'Syslog – Config'
  - The 'Tracing' Web page is no longer valid; two new pages have been added instead:
    - 'Syslog – Messages' - includes messages according to the predefined configuration of the 'Syslog – Config' Web interface page.
    - 'Syslog - Messages.alert' - includes system alerts and messages.
- A new phone screen 'Diagnostics' was added under Menu > Device Status. This screen provides important information about the phone's status in terms of networking interfaces, IP Phone Manager Pro and BToE. More information will be added in future releases.

■ **OVR IP phone Office 365 services can be configured via HTTP Proxy**. Network administrators can configure OVR IP phones to forward Office 365 services via an OVR embedded reverse proxy, to comply with enterprise security policy. The phone then forwards Office 365 HTTP services designated to port 80/443 (TLS), to AudioCodes' HTTP reverse proxy embedded within the OVR, instead of to the original destination (origin server), similarly to the way in which the phone directs SIP traffic to the OVR instead of directly to Office 365 SIP servers.

■ The 'Line' key that appeared by default for the phone's first programmable key, i.e., the programmable key located in the uppermost left corner of the phone screen, has been removed. Applies to all phones except 405HD and 420HD.

If you'd like to use this feature, please contact AudioCodes to discuss the correct SBC version to use.

■ Improved Hot Desking feature: If the phone is locked, a popup prompt is displayed after the HotDesk softkey is selected, prompting users to confirm their request for Hot Desking.
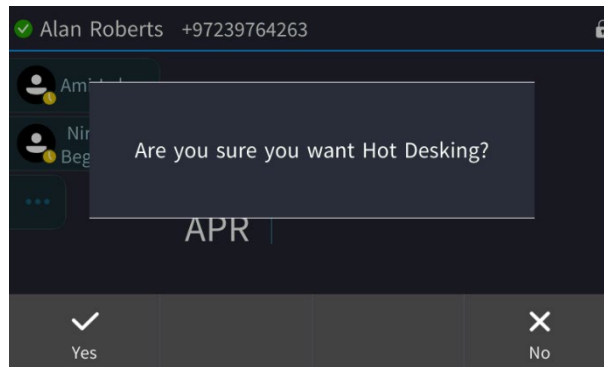
■ **AudioCodes' IP Phone Management Pro management interface features new displays** in the Devices Status page:

- Column 'USB Headset Type' displays a headset connected to a phone's USB port
- Column 'IPP Model' displays the USB icon

Phone Number	↓ Last Update Status	Mac Address	IP Address	IPP Model	Firmware	Tenant	Site	Template	Report Time	Location	BToE Version	USB Headset Type
+97239765501;ext=5501	25.04.2018 17:24:49	00908f98beda	172.17.123.3	445HD	UC_3.1.0.508	BeerSheva	AutoDetection	Audiocodes_445HD_LYNC	26.04.2018 10:31:45		unknown	
+97239769068;ext=9068	25.04.2018 10:37:34	00908f484706	172.17.131.4	440HD	UC_3.1.0.528	BeerSheva	AutoDetection	Audiocodes_440HD_LYNC	25.04.2018 14:04:00	16 H.Haor St., Israel, BS, IL, 7019900, IL	2.0.13.0	GN Netcom A/S Jabra EVOLVE 20 MS

- HRS type (457/458) and speaker firmware version

	↓ Last Update Status	Mac Address	IP Address	IPP Model	Firmware	Tenant	Site	Template	Report Time	Location	BToE Version	USB Headset Type	HRS Speaker Model	HRS Speaker FW
	26.04.2018 12:18:51	00908f61a032	172.17.131.2 / 10.38.2.9	UC-HRS-457	UC_3.1.0.478, 110	BeerSheva	AutoDetection	Audiocodes_HRS_LYNC	26.04.2018 12:19:20		2.0.13.0		HRS_457	110
=5501	25.04.2018 17:24:49	00908f98beda	172.17.123.3	445HD	UC_3.1.0.508	BeerSheva	AutoDetection	Audiocodes_445HD_LYNC	26.04.2018 10:31:45		unknown			

3.17   Version 3.0.4

> **Note:** Version 3.0.4 includes firmware build **3.0.4.1264** for the 405HD, 430HD, 440HD and 450HD phone models, and the Huddle Room Solution (HRS).

■ This version introduces a **new sidecar option** for the 450HD phone. With the sidecar, users can enjoy many more speed dials + BLFs. The 450HD can be ordered with or without the sidecar. Main features include:

- Full touch
- High-resolution color screen
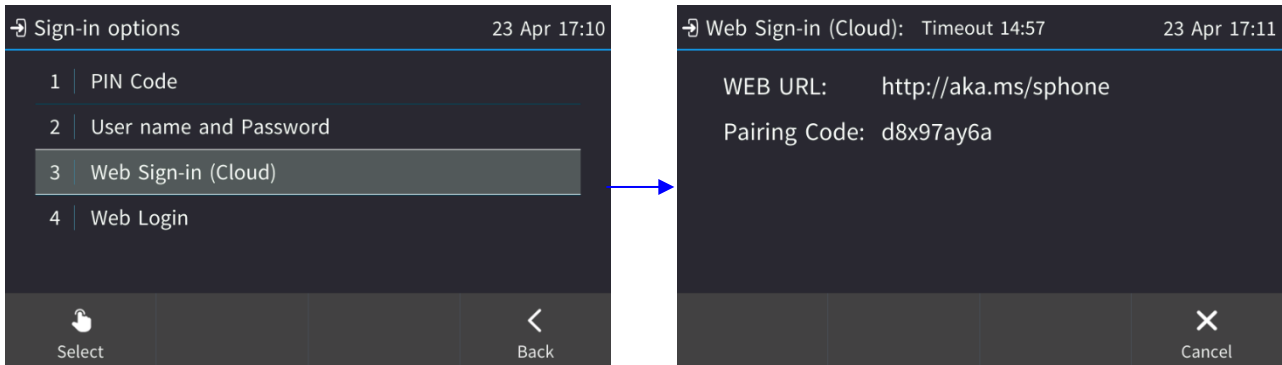- Up to 22 configurable speed dials + BLFs (on top of the eight supported in the phone screen)

■ **New voice dialing capabilities from the phone to any user in the corporate directory**. AudioCodes' 400HD Series of IP Phones is now directly integrated with AudioCodes' Voca services to allow voice dialing to any other user in same corporate directory. To enable the service, the user must add a VocaNOM key, and IT must configure the VocaNOM IP address service on the phone. The caller hears a voice prompt requesting the callee's first and last name. When the service identifies the callee, the phone dials the callee's number just as it does in a regular call. Later, the user can press the REDIAL hard key on the phone and view the call logged in the phone's 'Dialed Calls' just like with any other call. The service is currently available in English and German only.
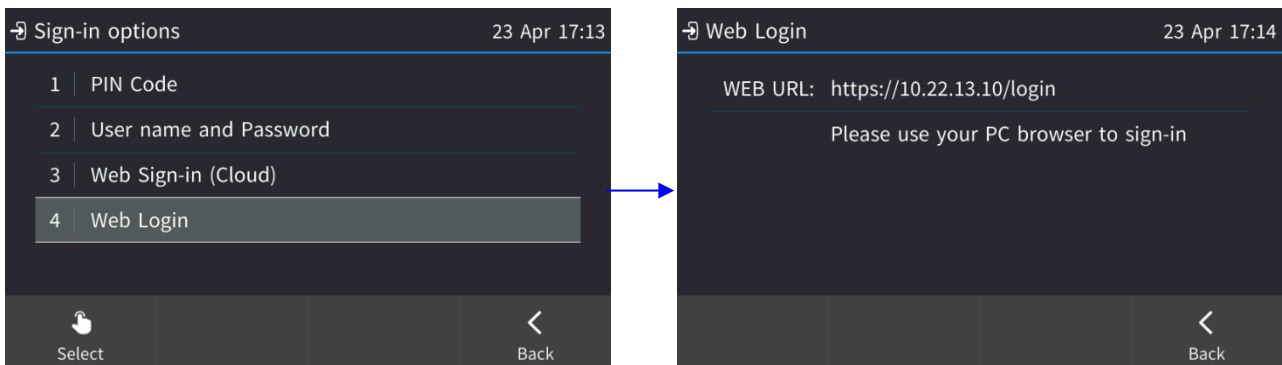
> **Note:** Version 3.0.4 includes firmware build **3.0.4.1192** for the 405HD, 430HD and 440HD phone models and firmware build **3.0.4.1192.3** for the 450HD phone model and the Huddle Room Solution (HRS).

■ **Signing in using the sign-in option 'Web Sign-in (Cloud)'**. Allows connectivity to Microsoft's Cloud PBX, Microsoft's cloud-hosted version of enterprise voice. Also known as Device Pairing, signing in with this option only applies to Microsoft Cloud PBX users.

↵ Sign-in options	23 Apr 17:10
1	PIN Code
2	User name and Password
3	Web Sign-in (Cloud)
4	Web Login
👆 Select	‹ Back

↵ Web Sign-in (Cloud): Timeout 14:57	23 Apr 17:11
WEB URL:	http://aka.ms/sphone
Pairing Code:	d8x97ay6a
	✕ Cancel

> ⚠ **Note:** The name of this sign-in option was previously **Web sign-in**. The option's name was changed to **Web Sign-in (Cloud)** in line with Microsoft's recommendations, and to avoid confusion.

■ **Signing in using a new sign-in option 'Web Login'**. Users can sign-in to their phone *from their browser using their PC keyboard to quickly enter sign-in credentials* rather than use the longer method on the phone's keypad which requires switching input from letters of the alphabet to numbers and vice versa. [Applies to Skype for Business online and on-premises].

↵ Sign-in options	23 Apr 17:13
1	PIN Code
2	User name and Password
3	Web Sign-in (Cloud)
4	Web Login
👆 Select	‹ Back

↵ Web Login	23 Apr 17:14
WEB URL: https://10.22.13.10/login	
Please use your PC browser to sign-in	
	‹ Back

In the browser's address field, the user enters the displayed Web URL **<phone IP address>/login** and then in the Web Login page that opens, they enter their username and password to sign in, as shown on the next page.

Web Login

Sign-in address	10.22.13.12
User name	admin
Password	••••

Sign in

> **Note:**
> - If CAP is enabled, the sign-in option **CAP Provisioning** replaces the sign-in option **Web Sign-in (Cloud)**.
> - If the BToE PC application is *automatically* paired with the phone (when the phone's PC port is directly connected to the PC), the sign-in option **BToE** replaces the sign-in option **Web Login**.
> - If the BToE PC application is *manually* paired with the phone, the **Web Login** sign-in option is presented rather than the **BToE** option.

■ **Enhanced Phone Lock**. New options have been added to allow new capabilities to users whose phones are in lock state, in compliance with Microsoft Skype for Business.

Network administrators can configure parameters to:

- *Allow users to make outgoing calls* even though the phone is locked
- Allow users to receive incoming calls even though the phone is locked
- Allow users to answer Delegate calls even though the phone is locked
- Allow users to use the phone's handset even though the phone is locked

  ♦ New inband provisioning parameter 'DisableHandsetOnLockedMachine'

  [**0**] Allows incoming and outgoing calls when the phone is in locked state

  [**1**] Allows only incoming calls when the phone is in locked state

  [**2**] Disallows incoming and outgoing calls when the phone is in locked state

  If the parameter is not provisioned, the phone functions as if the parameter is set to [**1**] [only incoming calls are allowed when the phone is in locked state].

  ♦ New local phone parameter 'AllowCallsInLockState'

  [**GET_FROM_INBAND**] Phone's capabilities when locked are set by inband provisioning parameter (default)

  [**ALLOW_BOTH**] Allows users to make and receive calls when the phone is in locked state

  [**ALLOW_INCOMING_ONLY**] Allows users only to receive incoming calls when the phone is in locked state

  [**DENY_BOTH**] Disallows users from making calls and receiving incoming calls when the phone is in locked state

  If set to **ALLOW_BOTH** or **ALLOW_INCOMING_ONLY** or **DENY_BOTH**, this parameter overrides the 'DisableHandsetOnLockedMachine' inband provisioning parameter.

  ♦ **New local parameter 'AnswerDelegateIncomingCalls'** has been added to allow users to answer second-hand (Share Line Appearance and Delegation) incoming calls in when the phone is in lock state. This parameter is applicable only if the phone is allowed to answer incoming calls when in locked state.

  [**0**] Users cannot answer incoming Delegate calls when the phone is in locked state

  [**1**] Users can answer incoming Delegate calls when the phone is in locked state (default)

■ **Media bypass for Cloud Deployment**. Allows a phone to send media directly to the SBC or PSTN gateway, eliminating when possible the Cloud Connector Edition (CCE) from the media path, thereby reducing latency, the possibility of packet loss and the number of points of potential failure, and thus improving voice quality. Only applicable to an online hybrid Skype for Business deployment.

3.17.1   450HD Phone

- **Boss-Admin (Delegated Line)**
  - Allows a relationship to be established between a boss' phone and an administrative secretary's phone, to streamline office workflow and enhance efficiency.
  - Each phone can support up to five Bosses or Admins. One Boss can have up to five Admins. One Admin can have up to five Bosses. A many-to-many configuration is also supported.
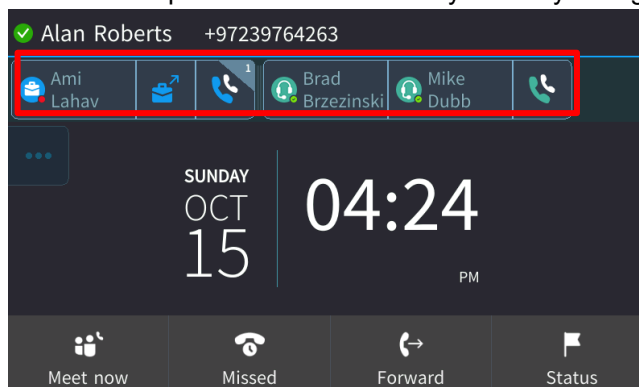

Boss-Admin Icons	Description
	Boss is [L-R] Online | Offline | Busy | Away | Do not Disturb
	Allows Admin to view Boss' calls.
	Admin is [L-R] Online | Offline | Busy | Away | Do not Disturb
	Allows Boss to view calls answered by Admins
	Allows Admin to call on behalf of Boss

- Delegation must be allowed for the user in the environment else configuration will not work. All users must be allowed to configure all users as delegates.
- Call Pick-up:
  - Boss can monitor Admin when Admin is in a call on Boss' behalf
  - Boss can pick up a call from Admin when Admin is in a call on Boss' behalf and has put the call on hold
  - Admin can pick up a call from Boss if Boss puts the call on hold
  - Admin 1 can pick up a call from Admin 2 (if Admin 2 is in the call on Boss' behalf and then puts the call on hold)
  - Admin can forward to Boss' voicemail without picking up Boss' line
- **New screen theme reflects Skype for Business 2016 client look & feel | New softkeys match the de facto Skype for Business standard.** This new feature ensures uniformity across all devices used by the same user, for Unified Communications.

  Here's the new-theme idle screen:
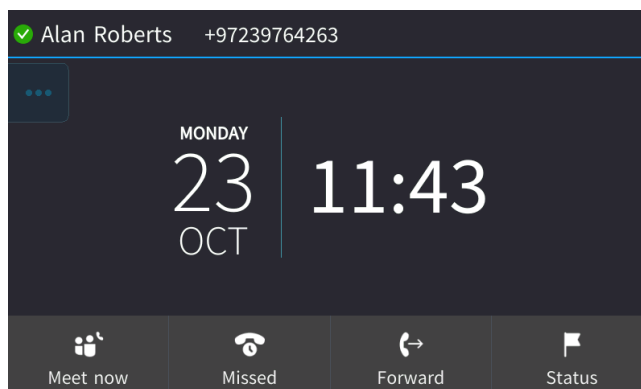
Here're the new-theme softkeys that are displayed in the phone's idle screen:

New Softkey	Name
	Meet Now
	Missed
	Forward
	Status

Network administrators can opt to switch from the default theme back to the legacy theme by changing the setting of the new configuration file parameter *personal_settings/ui_theme* from MSFT_THEME to AUDIOCODES_THEME.

■ **Power Saving mode**. When a phone enters Power Saving mode, the screen's brightness is reduced, lowering power consumption. The phone enters the mode after being inactive for a configured period (timeout). Any user activity returns the phone to regular Active mode.
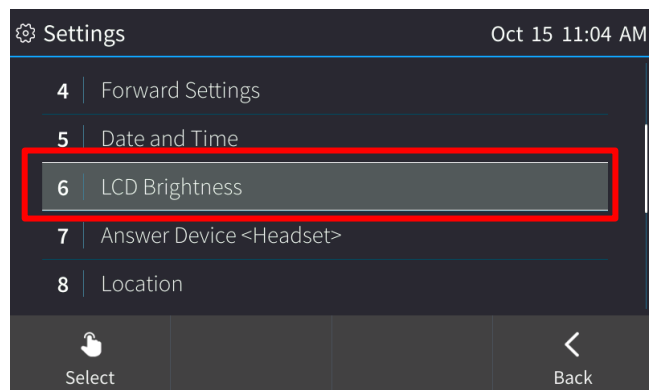
Users can configure a brightness level of High, Medium or Low for Active mode, Dimmer mode and Night mode. By default, the phone enters Dimmer mode after 15 minutes of inactivity; by default, the phone enters Night mode after *another* 60 minutes of inactivity. If the capability to determine working hours is configured, the phone only enters Night mode *during non-working hours*.

Dimmer mode is less bright than Active mode. Night mode is lowest. When a phone enters Dimmer mode, *LCD_Dimmer_mode_timeout* starts. When it expires, the phone switches to Night mode (which is allowed only during non-working hours if working hours are available). Any phone operation such as an incoming call or touching the screen causes the phone to exit Power Saving mode and revert to the regular screen brightness level.

In Skype for Business online, three new inband configuration parameters control Power Saving mode:
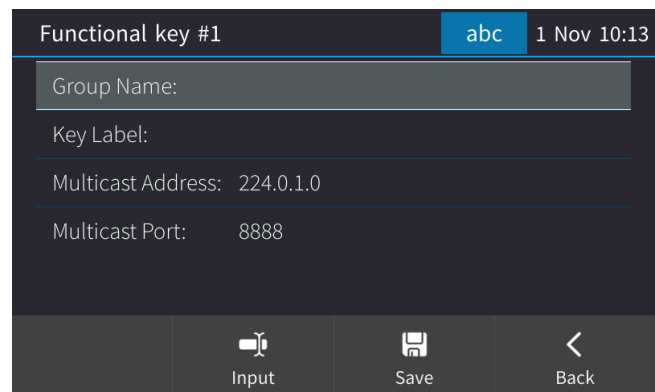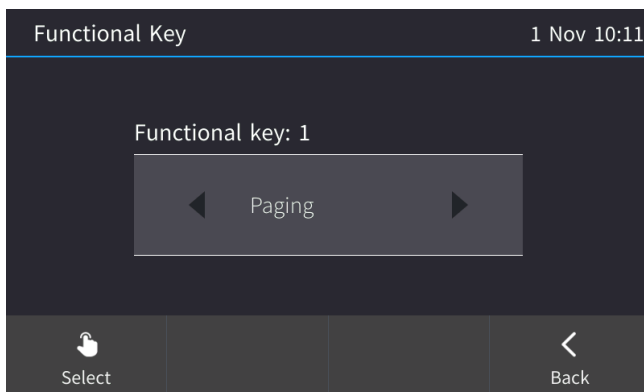
- EnablePowerSaveMode [True]
- PowerSaveDuringOfficeHoursTimeoutMS [15 minutes]
- PowerSavePostOfficeHoursTimeoutMS [5 minutes]

> ⚠️ **Note:** These parameters do not apply to Skype for Business on premises.

■ **Multicast Paging, including Barge-in**. Allows live announcements to be made (paged) from a phone to a group of phones, to notify a team (for example) that a meeting is about to commence at a certain venue. The paged announcement is multicast via a designated group IP address, in real time, on all idle phones in the group, without requiring listeners to pick up their receivers. The name of the group is displayed on phone screens when the paging call comes in. The feature must first be enabled by the network administrator in the phone's Web interface before users can configure a Functional Key for paging on the phone.

Functional Key	1 Nov 10:11
Functional key: 1	
◀ Paging ▶	
Select	Back

Functional key #1	abc 1 Nov 10:13
Group Name:	
Key Label:	
Multicast Address: 224.0.1.0	
Multicast Port: 8888	
Input Save Back	

- **Barge-in**. Allows paging calls to interrupt (barge in on) phone conversations that are in progress, without prompting recipients with an option to accept or reject the paging call. When disabled (default), those who are in regular calls when a paging call comes in are prompted in their phones' screens to choose whether or not to accept or reject the paging call. If it's accepted, the regular call is put on hold and the paging call is heard. The feature must first be enabled by the network administrator in the phone's Web interface before users can use it.

3.17.2 All Phones

■ **HotDesk feature for enterprises that operate according to the 'touch-down desk' concept**. Employees in these enterprises typically travel frequently to remote branches, or work in shifts. They can now sign in to a phone that is already signed in by another (CAP or regular) user without signing out the original user to whom the phone was assigned for primary use.
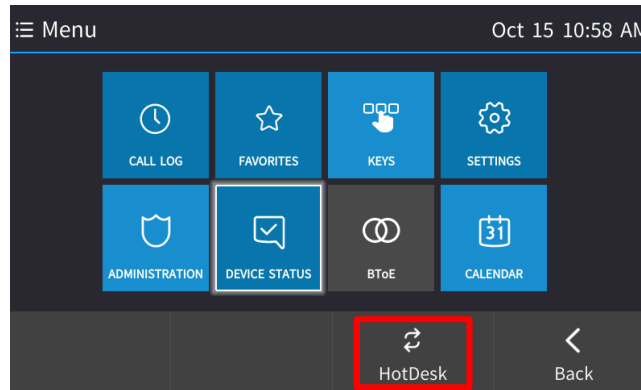
The feature must be enabled on the server by setting parameter *EnableHotDesking* to 'True'. When the HotDesk user signs out or if the phone stays in idle state longer than the HotDesk timeout defined on the server, the phone automatically returns to its original user and state; its configuration and data are preserved as they were before the phone was leased for HotDesk use. HotDesk users cannot perform all operations that the original (CAP or regular) user could perform, for example, change Language.

■ **Support for Lync AutoDiscover Web Service Protocol [MS-OCDISCWS]**. This feature improves discovery of the phone's SIP home server after signing in. Using the AutoDiscover procedure the phone is capable of finding its home server URL for a specific Skype for Business account, based on user credentials. It is specially efficient for Skype for Business online and hybrid environments, when phones must sign in to a different Skype for Business server according to the user's account. Previously, the home server was found using DNS SRV records based only on a SIP account domain [MS-CONMGMT]. If AutoDiscover is unsuccessful, the phone falls back to SRV DNS.

■ **The phone's Call Log is synchronized with Microsoft's Exchange server**. All devices that a user signs into are fully synchronized with the server. Each device reports every call from | to that user to the server. Each device then pulls the last 20 reported calls and performs synchronization. All lists in each device's Call Log except the Missed Calls list are synchronized.

   • **To disable the Call Log synchronization -** Network administrators can now disable the Call Log synchronization feature by setting new configuration file parameter *lync/callLog/sync/enabled* to 0. Call Log synchronization is by default enabled (1).

■ **Power Saving mode**. Three new inband configuration parameters control the 'Backlight Timeout' feature from the Skype for Business online server (applies to all phones except 450HD but only if the phone is configured on the server):

   • EnablePowerSaveMode [True]
   • PowerSaveDuringOfficeHoursTimeoutMS [15 minutes]
   • PowerSavePostOfficeHoursTimeoutMS [5 minutes]

> **Note:** These parameters do not apply to Skype for Business *on premises*.

   • During office hours, phones enter power saving mode after 15 minutes of inactivity by default.
   • After office hours, phones enter power saving mode after 5 minutes of inactivity by default.
   • After entering power saving mode, screen brightness is reduced, lowering power consumption. Any user activity returns the phone to regular active mode.

■ **Dial Plan Normalization**. Network administrators can enable and configure dial plans on the

Microsoft Skype for Business server. Normalization rules can be downloaded from the server via in-band provisioning. The feature was fully certified and tested with Microsoft in this version. It was supported in previous versions, but without Microsoft certification.

■ **Multiple Emergency Numbers**. A caller can select an emergency number from a list of emergency destinations. A dedicated number for the police, ambulance service, fire fighting service, etc., can be selected from a list of options, for example:
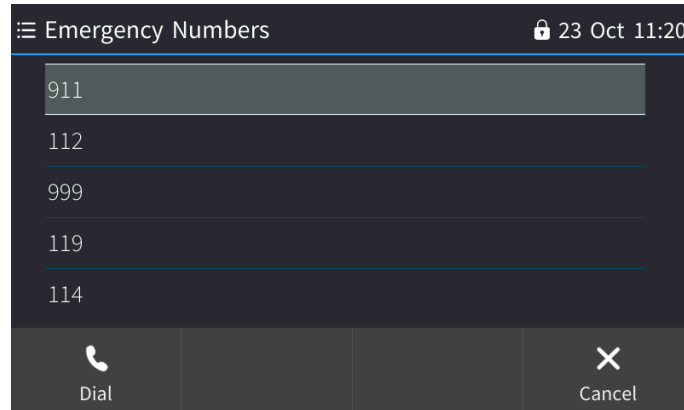
If the phone locks, emergency numbers will still be available and dialable via a new **Emergency** softkey that is displayed after the lock takes effect.
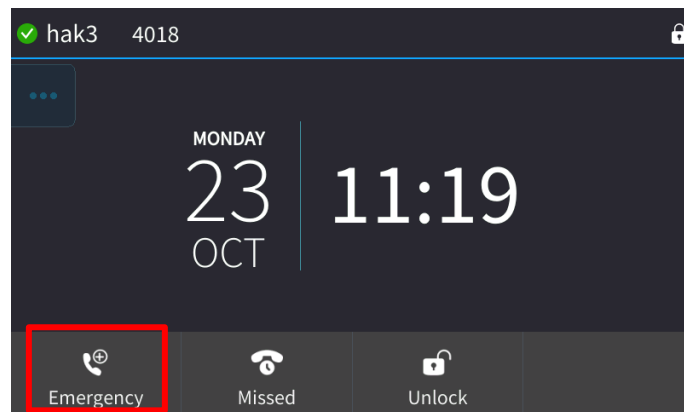
■ **Save/restore personal settings via IP Phone Manager Pro version 7.4** [Phase 1]. The phone automatically saves personal configuration performed by the user, on the IP Phone Manager Pro. In this release [Phase 1], only settings performed on the Function Keys, such as Speed Dials, or any other function defined by the user, such as Calendar, Voca, etc., are saved. These keys are now always available to the user who defined them, even if the user signs out and then signs in on another phone (of the same model). The keys are therefore saved *per user* rather than *per phone*. This enhancement is useful for Hot Desking mode where users sign-in to different phones according to desk availability, or for when phones are replaced due to a hardware issue.

■ **Malicious call tracing**. Users can report a malicious call. If a user gets a call and wants to report it as malicious, the phone allows them to send a report to the Skype for Business server. To allow malicious call reporting by the phone, the feature must be enabled by the network administrator on the Skype for Business server (the option 'Enable malicious call tracing' must be selected).

■ **Sign-in can be cancelled during the signing in procedure**. Users can cancel signing in after starting the sign-in process.

■ **Voice Quality Check**. A new option to check IP phone voice quality has been added to the phone's Device Status menu.
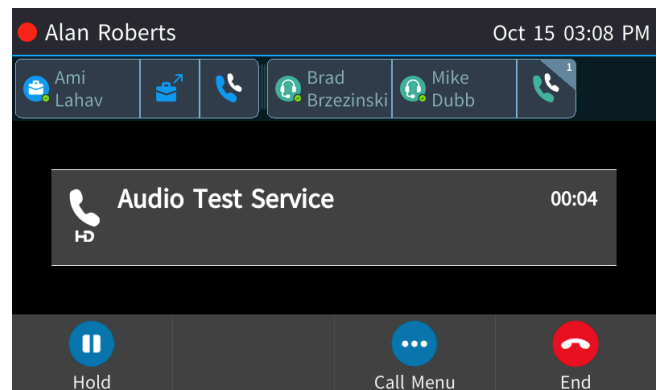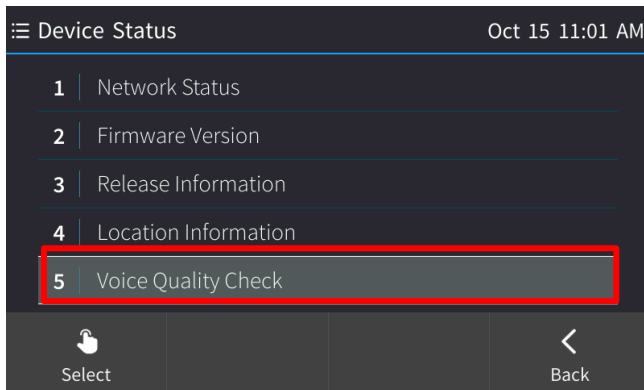
If selected, the user is invited to "Record a short message after the tone then wait to hear how you sound".

To enable the feature, the network administrator must enter the following command on the Skype for Business server:

```
set-CsAudioTestServiceApplication -Enabled $True
```

Additionally, the 'Identity' parameter must be configured with the the SIP address of the audio test service contact to be modified. For example:
**<sip:RtcApplication-bc516080-3233-42f2-a732-826dd6f99702@audio-codes.info>**

■ **'Off Work' user presence status**. A new user presence status 'Off Work' was added to the list of possible user presence statuses. Users can select it before (for example) going on vacation.
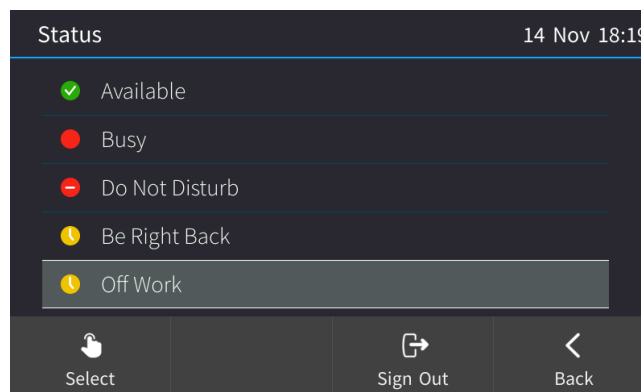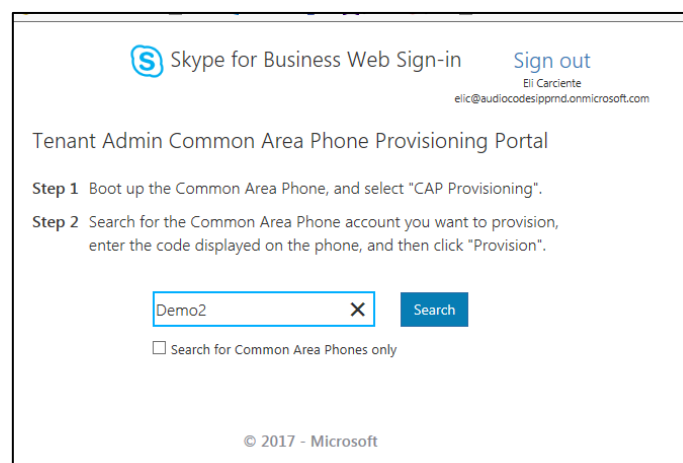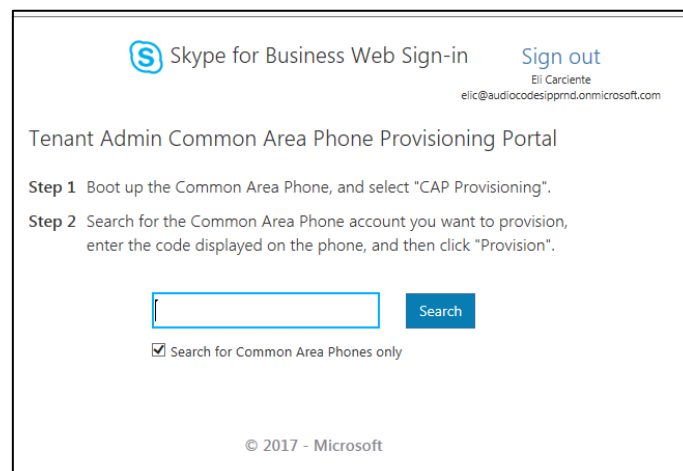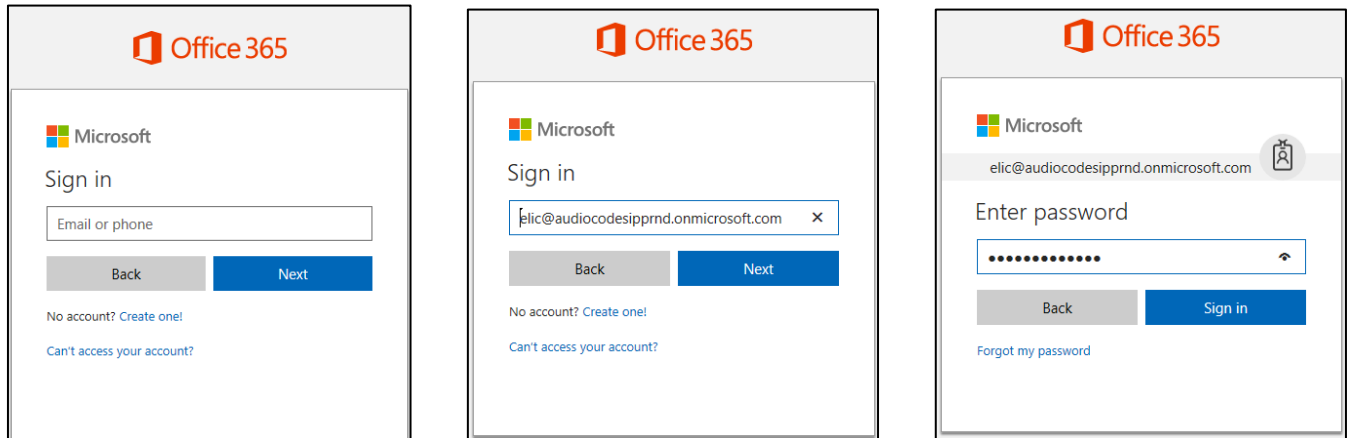

■ Blind Transfer places the remote party on hold while the transfer is performed.
■ **Common Area Phone (CAP) online support**. Phones can now be defined as CAPs when using a cloud PBX. Defined *per physical phone* rather than *per user*, a CAP requires a special sign-in method called 'CAP provisioning', exclusive to cloud PBX. Before signing in, users must enable the phone as a CAP and then sign in using this special 'CAP provisioning' method. CAPs in server mode are unchanged. The change applies only to cloud PBX.
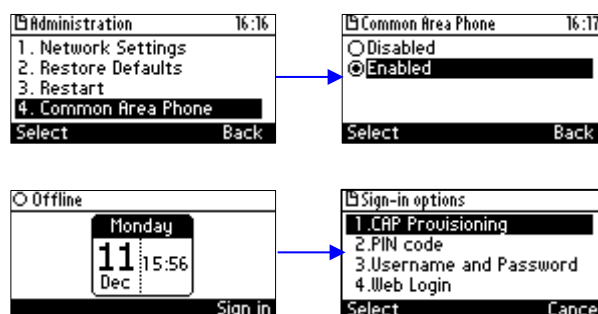
A URL and Pairing Code are displayed:
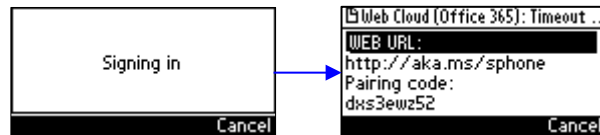
The administrator points the browser to the URL, signs in to Office 365 and locates the phone.

The administrator enters the Pairing Code in the Microsoft web page and clicks **Provision**.

Sign-in to Microsoft's Cloud PBX is performed.
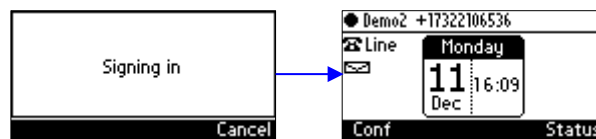
- ■ **Viewing presence status when making an outgoing call**. Allows participants to view the called party's presence status when making an outgoing call. In the screen below, for example, the caller can see that the presence status of the called party (Donald) is 'Be right back'.
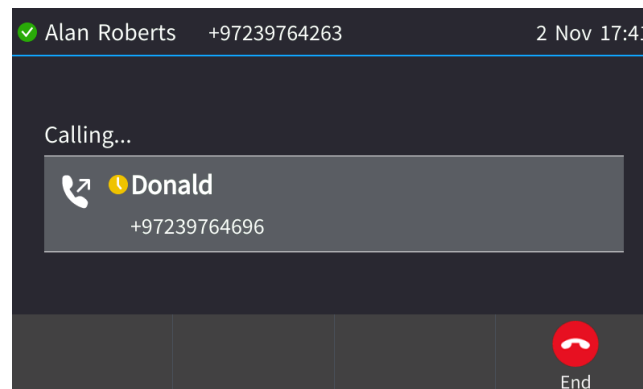
- ■ **AudioCodes Huddle Room Solution (HRS)** turns virtually any space into a meeting room. Designed to audio-enable huddle rooms and small group meeting spaces with advanced capabilities in a powerful, yet simple and cost-effective package. Centralized management helps lower operational costs. Scalability: Six to up to 15 users. Fully integrated with Microsoft Skype for Business.

  - • Two available product flavors:
    - ♦ UC-HRS-**457**: AC-HRS main control unit with one 457 HRS speaker designed for smaller-sized huddle rooms seating up to six participants (2m/6ft distance from each participant to the 457 speaker). USB audio connectivity.
    - ♦ UC-HRS-**458**: AC-HRS main control with one 458 HRS speaker designed for larger-sized huddle rooms seating up to 15 participants (5m/16ft distance from each participant to the 458 speaker). USB audio connectivity.

  The HRS's default audio device is the external speaker/s connected to the phone. The phone unit's speaker hard key is disabled. The phone's integral speaker is consequently disabled. Only the external speaker and the handset provide audio capability in the HRS.

  - • Large, full-color touch screen for meeting control

♦ Idle screen specially designed for conference rooms facilitates the simple addition of remote participants in a familiar Skype for Business meeting management experience.

Meet Now softkey

Calendar softkey
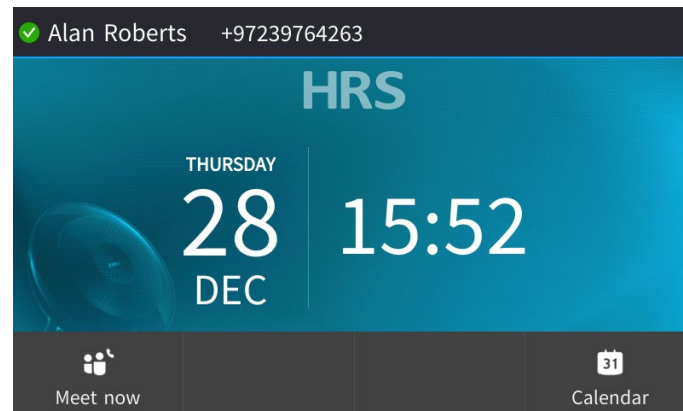
The solution provides full management control over the speaker

Prompts in the phone screen alert to a disconnected speaker cable (for example)

Comprehensive **HRS software upgrade** can be performed via the Web interface or EMS

- Feature-rich conferencing management:
  ♦ Initiate a conference and add a participant to a meeting through the Meet Now softkey in the idle screen.
  ♦ Mute all participants | Mute a single participant | Unmute a participant
  ♦ **Change a participant's privileges**: Attendee can add participants | Host can do everything
  ♦ Lock a conference
  ♦ View conference info
  ♦ Join a meeting through the integrated Exchange 'Calendar Reminder'
  ♦ **Operate the speaker from the phone** which features the speaker's functionalities (volume down, volume up, mute, answer call, end call, etc.). Every operation performed on the phone unit is automatically synced with the external speaker and vice versa. Participants can optionally operate the speaker locally.

- **Full HRS management capability through AudioCodes' management utilities** (**Web interface**, **IP Phone Manager**) which enable network administrators to deploy and monitor the HRS, identify problems and fix them rapidly and efficiently. When the speaker is disconnected:
  ♦ An alert is displayed on the phone screen to notify conference participants in the huddle room
  ♦ An alarm is sent to the IP Phone Manager informing the remote network administrator that an issue related to speaker connectivity has occurred. (Calls can only be made using the handset; the phone's integral speaker is disabled).

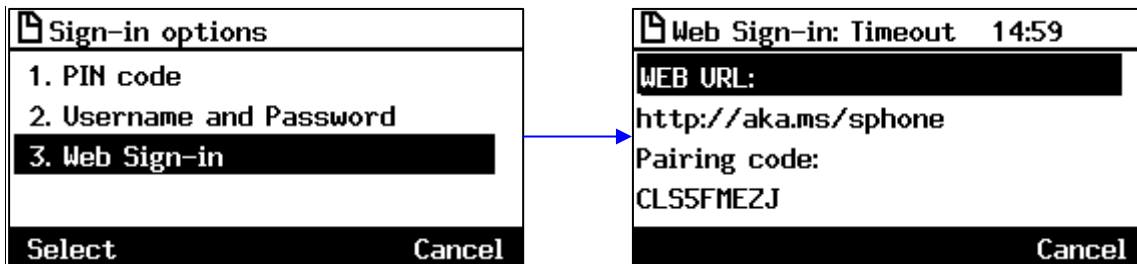- **Power Saving mode**. Identical to the Power Saving mode on the 450HD phone. See here for detailed information.

3.18   Version 3.0.1

> ⚠️ **Note:** Version 3.0.1 includes the following firmware builds:
> - **3.0.1.322** (all 400HD Series IP Phones except the 450HD phone)
> - **3.0.1.89.392** (only the 450HD phone)

■ **Cloud PBX Web Sign-in, a.k.a. Device Pairing - connectivity to Microsoft's Cloud PBX**, Microsoft's cloud-hosted version of enterprise voice. AudioCodes' IP phone features a sign-in option allowing users to connect to Microsoft's Cloud PBX: **Web Sign-in**.

```
┌────────────────────────────────┐      ┌────────────────────────────────┐
│ 🗎 Sign-in options             │      │ 🗎 Web Sign-in: Timeout  14:59 │
│ 1. PIN code                    │      │ WEB URL:                       │
│ 2. Username and Password       │  →   │ http://aka.ms/sphone           │
│ 3. Web Sign-in                 │      │ Pairing code:                  │
│                                │      │ CLS5FMEZJ                      │
│ Select               Cancel   │      │                       Cancel   │
└────────────────────────────────┘      └────────────────────────────────┘
```

> ⚠️ **Note:** This sign-in option applies only to Microsoft Cloud PBX users

The option exempts users from having to laboriously key in their user name and password using the phone keypad in order to sign in. If the option is selected, a URL and a Pairing Code are displayed, as shown in the figure above. Users must then point their browser to the URL and enter the Pairing Code in the Microsoft web page. Sign-in to Microsoft's Cloud PBX is then performed.

■ **Capability to add and delete contacts to/from Skype for Business 'Favorites'**. Users can add a person to the Favorites group after (for example) a call with the person is logged. A maximum of 1,000 people can be added. Users can delete the added person if necessary.

■ **Join Meeting Enhancement**. With this version, users can enjoy a 'join' option for online meetings even if the TNEF option is disabled on Exchange; Exchange enables sharing information between federated parties; by default, the sharing option is disabled (TNEF = disabled); the phone relies on the Join Skype Meeting link in the calendar meeting request. The join link is usually found in the body of a meeting request. However, the phone depends on this link to be present in the MAPI properties of the message. When this meeting request is sent to remote organizations (Skype for Business federated partners), the remote organization's phone by default will not show the meeting join link in the calendar because Outlook and Microsoft Exchange do not use Transport Neutral Encapsulation Format (TNEF) to package information for sending messages across the Internet. TNEF, which encapsulates MAPI message properties, is by default disabled for messages sent externally from an Exchange organization.

■ **Secured connection to IP Phone Manager**. The connection between the phone and the IP Phone Manager can now be fully secured using HTTPS.

> **Note:** To increase the security level, it's advisable to block any HTTP connection using the configuration file parameter *security/web/https_only*.

■ **New Boss-Admin experience exclusive to 440HD**. Boss and Admin can utilize the 440HD sidecar to present active and held calls in the queue.

- Admin can see each Boss queue on the sidecar
- Boss can see all Boss calls in the queue on the sidecar
- A mix of Admin and Boss can be also used in this mode
- Users can still use the sidecar for Speed Dial/BLF. The upper sidecar key allows users to switch between BLF and Boss/Admin queues.

■ **Boss Privacy mode**. Conceals a remote caller's ID from the Admin's (delegate's) phone in order to protect their Boss's privacy. The feature is disabled by default; the network administrator can enable it. The feature applies to the phone's sidecar and to the Call List in the phone's screen.

■ **BToE default pairing mode** is now automatic. As of this version, the default BToE pairing mode is *automatic*. Using the *manual* pairing option requires changing the phone's configuration. The new default pairing mode allows users to derive maximum benefit from the BToE feature.

> **Note:** As a result of this change (BToE default pairing mode now Automatic), the **BToE** softkey is no longer displayed after pressing the MENU hard key.

■ 450HD phone's idle screen now displays both Function Keys (i.e., Speed Dial/BLF) and Delegates (i.e., delegated users):
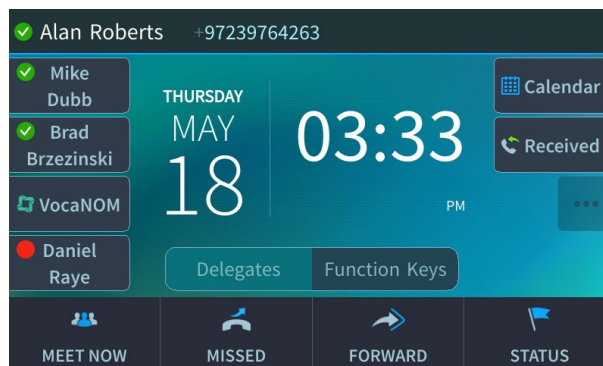
■ **Pause dialing**[1]. Pause dialing can be configured for a Speed Dial in order to create a time break, typically needed when configuring a Speed Dial to dial a destination extension number that is behind an Interactive Voice Response (IVR) system.

■ **Enhanced Visual Voicemail (VVM)**. The phone updates the MWI LED and the number of messages even if the configuration between Exchange and Skype Online has not been performed correctly. This is relevant to users whose Skype or Exchange is online.

■ **Users can make new calls during incoming calls**[1]. This feature is now supported on all phone models.

■ **Headset ringer activated on incoming calls**[1]. The headset plays a ringer when calls come in, in addition to the phone's ring.

■ **New language support**. Korean is now supported on the 405HD phone.

■ **Improved debugging**[1]. DSP Packet Recording can be enabled on the fly, without requiring the network administrator to reset the phone.

■ **Ability to change the DTMF level**. Network administrators can now change the DTMF level with a

new configuration file parameter *voip/audio/gain/dtmf_tone_signal_level*.

■ **Improved Common Area phone**. The DND (Do not Disturb) key and the Call Forward key were removed from the Common Area phone's menus to prevent Common Area phone users from making the phone 'unavailable'.
For **backward compatibility**, a new 'voip/common_area/enhanced_mode' parameter can be set to **0** to allow Common Area phone users to be able to view the Call Forward key if necessary.

■ **Improvement to the 'Locking / unlocking a paired phone' feature**. Starting from this release, **a paired phone is automatically locked 10 seconds after the PC with which it is paired, is locked**. If the user continues using the phone within 10 seconds after the PC is locked, the phone is locked 10 seconds after being in idle state. In version 3.0, when the user locked the paired PC, the phone was locked after a timeout preconfigured in the Skype for Business server lapsed.
If the user's phone was automatically paired (by connecting its PC port to the PC/laptop 'behind' it) and if the PC/laptop was active (not locked), the phone could not be manually locked. The user could manually lock it only after locking the PC/laptop.

■ The phone in a Response Group plays a beep shortly after the agent answers, indicating that the call has been connected, that the agent can start talking and that the other side will hear the agent. Until the beep is played, a fleeting delay may occur during which the other side won't hear the agent.

■ The Calendar can now be enabled or disabled from the phone's screen via Menu > Settings > Calendar.

This page is intentionally left blank.

International Headquarters

1 Hayarden Street,

Airport City

Lod 7019900, Israel

Tel: +972-3-976-4000

Fax: +972-3-976-4040

AudioCodes Inc.

200 Cottontail Lane,

Suite A101E

Somerset, NJ 08873

Tel: +1-732-469-0880

Fax: +1-732-469-2298

Contact us: https://www.audiocodes.com/corporate/offices-worldwide

Website: https://www.audiocodes.com/

Document #: LTRT-08492