broadsoft



COMMUNICATOR

Communicator for Android

User Guide

Release 22.2.1

Document Version 1

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BroadSoft® Guide

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1 Summary of Changes

This section describes the changes to this document for each release and document version.

1.1 Changes for Release 22.2.1, Document Version 1

This version of the document includes the following change:

- Updated section *3.2 Sign In* to indicate support for Single Sign-On (SSO).

1.2 Changes for Release 22.1.1, Document Version 1

This version of the document includes the following changes:

- Updated *Appendix A: Third-Party Software.*
- Added section *8.20 Seamless Call Handover for VoIP Calls.*
- Added section *10.2.8 BroadWorks Mobility Persona Management.*

1.3 Changes for Release 22.0.1, Document Version 1

This version of the document includes the following changes:

- Updated images.
- Added description for *About* screen.
- Updated Availability information.

1.4 Changes for Release 21.5.1, Document Version 1

This version of the document includes the following changes:

- Added description for sort and display order.
- Added section *5.1 Contact Card*.
- Updated section *8.13 Call Pull*.

1.5 Changes for Release 21.4.1, Document Version 1

This version of the document includes the following changes:

- Added section *8.1.1 VoIP Calling Mode*.
- Added information about dial in to contact's My Room audio bridge.
- Added information about default selector for soft phone.
- Added information about Clear History.
- Added note to sign in automatically.
- Added information to change the Avatar in section *10.1 My Status*.
- Added section *13 Push Notifications for Calls*.

1.6 Changes for Release 21.3.1, Document Version 1

This version of the document includes the following changes:

- Added section *15.8 Emergency Call Address Change Service*.
- Added section *10.3.22 Device ID* for Lock Device feature.

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- Added information about multiple vibrations in silent mode.
- Added section *8.19 Swipe between Chat and Audio/Video Communication Views*.
- Added more participants to Video call or N-Way video.

1.7 Changes for Release 21.2.1, Document Version 2

This version of the document includes the following change:

- Updated section *5 Contacts*.

1.8 Changes for Release 21.2.1, Document Version 1

This version of the document includes the following changes:

- Added new functionality mid-Call controls for business circuit-switched calls.
- Added new functionality for Presence Rules.
- Added new functionality for Personal Assistant.
- Added new functionality to the directory search.
- Updated screenshots.

1.9 Changes for Release 21.1.1, Document Version 1

This version of the document includes the following changes:

- Added new Guest Client feature to section *11 My Room*.
- Updated section *6 Availability*.
- Updated section *8.7 Business Line Call Back and Call Through*.

1.10 Changes for Release 21.0.1, Document Version 1

This version of the document includes the following changes:

- Added My Room tab.
- Added side navigation.
- Added *Appendix A: Third-Party Software*.
- Updated Contacts information.
- Updated document images.

1.11 Changes for Release 20.1.2, Document Version 1

This version of the document includes the following change:

- Added section *10.2.7 BroadWorks Mobility*.

1.12 Changes for Release 20.1.0, Document Version 1

This version of the document includes the following changes:

- Added information about the **Forgot Password** link in section *3.2 Sign In*.
- Added description for adding a local contact in section *5.2 Add Contacts*.
- Updated section *8 Audio and Video Calls*.
- Added Test Call description in section *10.5 Test Call*.

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1.13 Changes for Release 20.0.1, Document Version 1

This version of the document includes the following change:

- Updated document for Release 20.0.1.

1.14 Changes for Release 20.0.0, Document Version 1

This document was created for Release 20.0.0.

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2 About Communicator for Android

Communicator for Android provides the following communication features:

- Instant Messaging and Presence (IM&P)
- Voice Calling (VoIP)
- Voice Calling (Circuit Switched)
- Video Calling
- BroadWorks Call Settings

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3 Get Started

This section contains the essential information for getting started with Communicator.

3.1 Installation

Android clients can be downloaded from Google Play.

3.2 Sign In

When you first launch the application, you are prompted to sign in.

1) If displayed, enter the device configuration address (Uniform Resource Identifier [URI]) provided by your service provider.
2) Enter your BroadWorks user name and password.
3) Select whether you would like Communicator to remember your password.
4) Select whether you would like Communicator to sign you in automatically on subsequent launches.
5) Tap **Sign In**.

NOTE: If you choose automatic sign in, you are automatically signed in and taken to the *Contacts* list upon subsequent Communicator launches. Otherwise, you are presented with the *Sign In* screen.

A pop-up dialog about emergency calls and an option to update your emergency location may appear on the *Sign In* screen. Depending on your service provider settings, the client may provide basic or advanced sign-in for updating the physical location.

With basic sign-in, there are three options on the emergency call pop-up:

- Update location – Opens a web browser where the user can set the location. When the location is set, the user can return to the client to sign in.
- Ok – Sign-in completes and the user can use the client.
- Cancel – Sign-in is canceled and the user is returned in the *Sign In* screen.

With advanced sign-in, there are two options:

- Update location – Opens a web browser where the user can set the location. When the location is set, the user returns to the client manually. If the location is updated successfully, sign-in completes and the user can use the client.
- Cancel – Sign-in is canceled and the user is returned to the *Sign In* screen.

Depending on your service provider settings, the client may have a link for *Forgot Password* on the login dialog box allowing retrieval of forgotten password. The functionality for retrieving the password is provided by the service provider.

Starting with Communicator Android Release 22.2.1 and iOS Release 22.3.1, the solution supports Single Sign-On (SSO) using an external identity provider (IdP) if supported by the service provider. This initial release supports OKTA SAML 2.0 as an identity provider. When using an external IdP, users are redirected to the corresponding authentication page in an external browser. After successful authentication, users are returned to Communicator and signed in.

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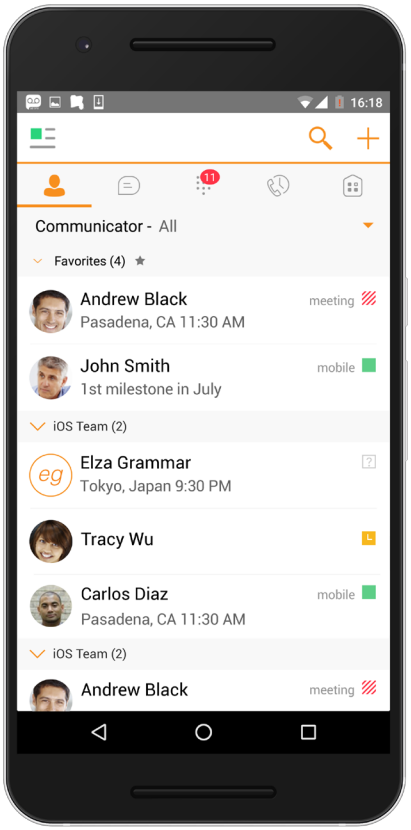
4 Main Tabs

When you start Communicator for the first time, your *Contacts* list is empty. You use the *search* field to find people and add them to your *Contacts* list. Contacts can also be added manually by tapping the **Add** button.



Icon	Description
	Contacts – View your contacts from a *Buddies* list, or a local or company directory.
	Chat – View Chat History.
	Dial Pad – Make calls.
	History – View incoming, outgoing, and missed calls.
	My Room – Join your personal room.

Figure 1 Main Tabs View

The main view contains a number of tabs that present information about the contacts and communications options located on the top bar:

- *Contacts*
- *Chat*
- *Call*
- *History*
- *My Room*

The Communicator default tab is the *Contacts* tab and in the soft phone view, the default tab is the *Directory* tab.

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5 Contacts

The *Contacts* list in the *Contacts* tab can contain different types of contacts as follows:

- Presence-enabled contacts
- Non-presence-enabled contacts

Any contact can be marked as a favorite, when then appears at the top of the *Contacts* list in the *Favorites* section.

Presence-enabled contacts are users with an Extensible Messaging and Presence Protocol (XMPP) address. These can be other Communicator users or users from federated systems such as Google Talk. Non-presence-enabled contacts can be phone or conference numbers. These are also stored on the server and available on all client instances of the user.

The Android Mobile client shows contact groups created from the desktop. Contact groups cannot be created or edited from the Mobile client.

The *Contacts* tab contains the following:

- UC-One Contacts
  - All
  - Online
- Contact Directories
  - Local Address Book
  - Directory

Local Address Book provides contacts from the local contacts. Directory provides contacts from the company directory.

5.1 Contact Card

The contact card displays information about a contact based on the contact type. This includes Communicator contacts, Local Address Book contacts, and contacts from directory search results.

The user can initiate a call or chat session directly from the contact card. This includes joining other contact's My Room or dialing a My Room audio bridge from a directory contact search result.

If the contact has an associated email address, then the application supports sending an email to the contact by launching the native email client on the mobile device.

5.2 Add Contacts

When you sign in for the first time, there are no contacts on your *Contacts* list. Add a new presence-enable contact at any time by selecting the option *Add Contact* from the plus icon in the left bottom bar. Another way to add new contacts is to use the directory search option from the *Contacts* tab.

In the *Add Contact* screen, enter the contact's information and then select **OK**. By default, your presence information is always shared with a new contact if an XMPP address is provided.

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If you receive a buddy request, you can decline or accept it. If you decline the buddy request, you can always share your presence information later by selecting *Subscribe* from the buddy contact card. Note that the contact must accept your subscription request for you to establish the presence relationship successfully.

Add a conference number by selecting the option *Add Conference* from the plus icon in the left bottom bar. In the *Add Conference* screen, enter the conference information and then select **OK** A conference contact is a special contact used for conference bridges to avoid having to remember a PIN code and a conference number, for example, for a recurring conference.

Add a local contact by selecting the *Add Local Contact* option using the plus icon in the left bottom bar. The *Add Local Contact* option opens the native Address Book for adding a new contact in the local phone book.

5.3 Edit

Tap a contact from the *Contacts* list to open a contact card. This is the same for presence-enable and non-presence-enabled contacts.

- Select *Edit* from action overflow button to open the *Contact Information* dialog box where you can edit information. This works for both presence-enabled and non-presence-enabled contacts.
- Select *Unsubscribe* from action overflow button to remove the presence relationship between you and that contact. This means you do not see the contact's presence information and your contact does not see yours. Select *Subscribe* to re-establish a presence relationship. An unsubscribed contact remains on the *Contacts* list and is always shown as "offline".
- Select *Remove* from action overflow button to remove the contact from your *Contacts* list.

5.4 Filters

There are four contact filters available from the *Contacts* tab:

- *All* – Shows all presence-enabled and non-presence-enabled contacts.
- *Online* – Shows only the presence-enabled contacts that are currently online.
- *Local Address Book* – Shows the contacts from your local phone book.
- *Directory* – Shows the contacts from a company directory (requires a search).

5.5 Sort and Display Order

The following options in *Preferences* control how contacts are displayed:

- *Display by* – display First name or Last name first.
- *Sort by* – sort by First name or Last name.
- *Short name format* – format of the name to be used in chat lists.

NOTE: Asian names – Chinese, Japanese, and Korean (CJK)

On Android, Asian names (CJK) are not dependent on the preceding settings. Asian names are always sorted by Last name and displayed with the Last name first. For Asian names, the short name format is always the full name.

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6 Availability

For each contact to which you have subscribed, you can see their presence. Similarly, your contacts can see your presence on their *Contacts* list.

NOTE: *Availability* can also be referred to as *presence status*, which was the term used in previous releases of Communicator.

Availability means that your friends are able to see if you are available, for example, "I'm available" or "I'm busy".

Icon	What it means
 available	The green availability icon indicates that the user is online and is ready for communication.
 mobile	The green availability icon indicates that the user is online on the Communicator Mobile client and is ready for communication. The icon is accompanied by the text "mobile".
 away	The yellow availability icon indicates that the user is online on their Communicator client but has been idle or away from their computer for more than 10 minutes.
 mobile	The yellow availability icon indicates that the user is online on their Communicator Mobile client but has been idle or away from their computer for more than 10 minutes.
 offline	The grey availability icon indicates that the user is offline in a call and the only available contact method is calling or leaving a chat message.
 call	The grey availability icon indicates that the user is offline and the only available contact method is calling or leaving a chat message.
 pending	The question mark indicates that a subscription is pending and the contact has not yet approved sharing their availability.
 busy	The red availability icon indicates that the user is busy and does not want to be disturbed.
 call	This icon indicates that the contact is busy due to a call. This is an automated availability status.
 meeting	This icon indicates that the contact is busy due to a meeting. This is an automated availability status. The Busy – In Call status overrides the Busy – In Meeting status so this icon is only seen when there is a meeting but no call.

You can manually set your own availability by tapping on the availability icon from the status bar in all tabs view. Tapping the availability icon opens the *My status* screen where you can change your avatar, personal message, and availability status.

Your avatar is the picture that represents you in your friends' *Contacts* list and in chat screens. Tapping on an avatar opens a dialog with options to select an existing image, to take a new one with your phone camera, or to clear your avatar.

You can enter a status message in the area next to the avatar. This status text is shown in your friends' *Contacts* list.

If you see the error message, "Chat Unavailable", under any tab, it means that the XMPP connectivity has been lost for chat and availability; however, you can still make calls. In this case, you should contact your service provider.

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The availability update is only triggered by appointments and meetings that are either accepted by the user or made by them. Note that all-day meetings do not trigger an availability change to *Busy – In Meeting*.

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7 Instant Messaging

7.1 Chat Tab

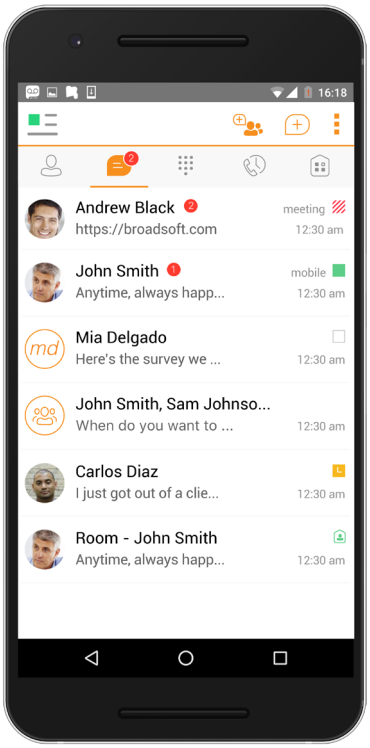

Figure 2 Chat Tab

The *Chat* shows the list of recent chats since the last login. If User A chats with User B multiple times, their discussions appear as one item in the list.

Tapping the name from the *Chat* list opens the *Chat* view (IM view) in the right pane where new messages can be typed. Old messages are also shown.

New incoming messages are indicated with a notification badge to the right of the name. The icon remains next to the name until the message is read.

Chats are listed so that the newest one is always at the top. Chats are not in alphabetical order and are always listed with the most recent first.

Tapping the menu button in the navigation bar displays the Start Group Chat and Mark all read options. The second one removes all notification badges from the *Chat History* list.

7.2 Chat

Start a chat using one of the following methods:

- Tap a contact from the *Contacts* list to open a contact card. From the contact card, choose the chat icon to start a chat.
- From the options provided after a long press on a contact.
- In the *Chat History* list, tap a contact entry to start a chat.
- From search results, tap a contact to open the contact card and then choose the chat icon.

When you initiate a chat, the *Chat* screen opens. Chatting with a contact is possible only when you are both online. If your contact initiates a chat, you see a notification badge on the *Chat* tab and the entry appears at the top of the *Chat History* list.

Once a chat opens, the name of the recipient is on the top bar and there is a presence icon flag before the name. The recipient's messages are presented in the orange background and the user is presented in the white background.

Smiles can be added to messages by typing the corresponding character codes and by selecting from the smiley icons, (the smiley is displayed graphically in the message area).

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7.3 Group Chat (Ad Hoc Rooms)

Start a group chat using one of the following methods:

- In single chat session, tap the add participant icon  to escalate from a single to a group chat.
- In the *Chat History* list, tap a group communication entry to start a group chat.

When you initiate a group chat, the *Chat* screen opens. More participants can be added later to the chat using the add participant icon. Anyone in the group chat can add participants. However, removing participants is currently not supported.

A group chat works the same way as a one-on-one chat. All messages from anyone are sent to everyone else. All contacts need to be online to be able to participate in a group chat. You cannot invite an offline contact.

A group Chat History is saved and is available to view later from the *Chat tab*.

A user can leave a group chat by selecting the *Leave chat* option. The chat is marked as "offline" and the user no longer receives messages from the chat. When tapping on the "offline" chat, the user re-joins the room and starts receiving messages. However, the user does not receive the messages that were sent in the chat while the user was outside of the room.

The *Clear History* menu item behaves the same way as the corresponding option in the one-on-one chat and removes the local history.

The **View Participants** button opens a dialog that shows the list of participants in the group chat.

Note that deleting a chat room is not supported.

7.4 Chat Recording

The Communicator client can provide a chat recording indication to users of all chat sessions depending on the server's configuration. A chat recording state is applied to all users registered in a single domain. This setting is not specific to any one user; therefore, the recording state cannot be modified by the user.

7.5 Chat Security Classification

The Communicator client provides the ability to specify a security classification of a chat session. The security classification is configured on the server side and cannot be changed by the user. The security classification level for instant messaging is assigned to the entire domain and all users have same classification level. It is visible in all chat sessions (single and group).

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8 Audio and Video Calls

8.1 Dial Pad Tab

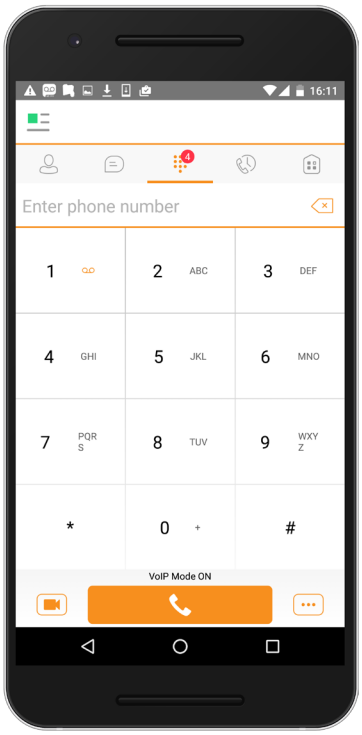

Figure 3 Dial Pad Tab

The *Dial Pad* tab displays a dial pad and a text field used to enter numbers. The dial pad is one of the options used to make audio or video calls. There are three buttons below the dial pad: Call, Video call, and Dial pad menu that are configurable by the service provider. The top text field also has a delete button that, when pressed, deletes one character at a time.

A badge notification appears on the *Dial Pad* tab when there are messages in the voice mail box. The voice mail icon under digit one becomes orange when there are voice mail messages. A long press on digit one connects you with your voice mail box. When there are no voice mail messages in your voice mail box, the icon is grey.

The *Dial Pad* menu can contain three options: VoIP Mode, Pull Call, and Retrieve Call.

8.1.1 VoIP Calling Mode

Communicator Mobile supports an option that allows a user to switch easily between VoIP and Mobile calling modes.

- VoIP calls use WiFi or the carrier data network.
- Mobile calls use the carrier circuit-switched network. Mobile calls leverage BroadWorks Anywhere or BroadWorks Mobility to present the business identity of the user (for more information, see section *8.7 Business Line Call Back and Call Through*).

Users can switch between VoIP and Mobile through the *Dial Pad* menu. An indication of the currently selected mode is displayed on the dial pad.

- VoIP Mode On:
  - Outgoing and incoming calls use VoIP over WiFi or data network.
  - BroadWorks Anywhere or Mobility location for the device is disabled.
- VoIP Mode Off:
  - Outgoing and incoming calls use the mobile circuit-switched network.
  - BroadWorks Anywhere or BroadWorks Mobility location for the device is enabled. Outgoing calls are performed with Call Through or Call Back. Incoming calls are delivered via the BroadWorks Anywhere or BroadWorks Mobility location.

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VoIP calls over the carrier data network are dependent on the quality of the network and may incur additional charges. As such, there are options for an operator or end user to disable VoIP calls over the carrier data network (3G, 4G, or Long Term Evolution [LTE]), if needed. Users can control this behavior in *Call Settings* → *VoIP Calls*. There are two options:

- WiFi only: VoIP calls are allowed only on WiFi.
- All Networks: VoIP calls are allowed only on any data network.

8.2 Make Audio or Video Calls

You can make an audio or video call using one of the following methods:

- Tap a contact from the *Contacts* list to open a contact card. From the contact card, choose the headset icon to make an audio call or the video icon to make a video call.
- From the options provided, after long press on a contact.
- From the search results, tap a contact to open a contact card and choose the audio or video icon or by using the long press options.
- Open the dial pad, enter a phone number, and tap the Call or Video button.
- On the *Call History* list, tap a call entry.
- On the *Chat* screen, tap the headset icon to make an audio call or the video icon to make a video call.

8.3 Answer Call

An incoming call is indicated with a ringtone. There are two options on the *Incoming Call* screen: *Accept* and *Decline*. If you decline the call, it causes the line to sound busy at the caller's end and they know that you rejected the call.

If a user is in the middle of a VoIP call and receives an incoming cellular call, the VoIP call continues while the phone is alerting. Once the cellular call is answered, the VoIP call is put on hold.

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8.4 In Call Actions

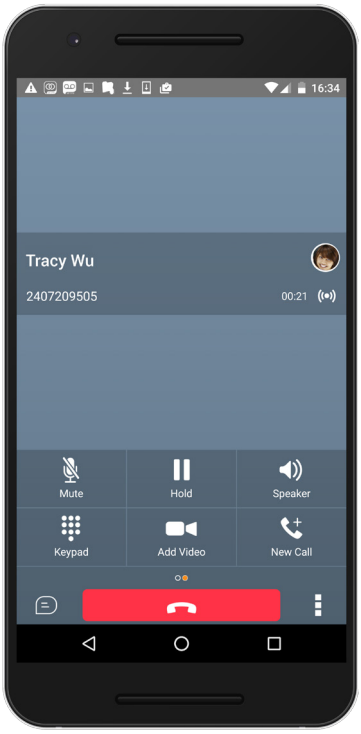

Figure 4 In Call Screen

From the *In Call* screen, you can perform the following actions:

- End a call
- Mute the microphone
- Place a call on hold
- Adjust the volume
- Escalate from audio to video call and downgrade from video to audio call
- Open the dial pad
- Make a new call
- Transfer a call – Attended
- Transfer a call – Unattended
- Make a conference
- Park a call
- Transfer a call to circuit-switched call
- Add more participants (in conference call only)
- Merge two separate calls
- Swap two separate calls
- View participants (on a conference call)

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In addition, the user can use the Android back button to leave the *In Call* screen and navigate through the other application screens. Returning to the *In Call* screen is possible through the active call toolbar in Communicator or the active call notification entry in the Android notification center.

8.5 Missed Calls and New Messages

When you miss a call, the notification bar on the Android device shows a note. By tapping the missed call, you go to the *History* screen. Notifications, for example, missed calls or new messages, are also shown as badges on the tab icons.

8.6 Message Waiting Indicator and Voice Mail Access

If you have pending voice mail messages, then the notification bar on the Android device displays an icon and the message, "You have *XX* pending voice mail messages". By tapping the voice mail notification, the application dials the voice mail access number directly and you can listen to the voice mail messages.

Voice mail is also accessible with a long press of the dial pad "1" key (similar to how it is on a regular mobile dial pad). If voice mail messages are available, then the "1" key changes color. In addition, a voice mail notification is displayed as a badge on the *Call* tab icon.

The number for new voice mails changes depending on how many are open or are new. The voice mail icon in the notification area has an associated badge that shows the number of new messages.

8.7 Business Line Call Back and Call Through

Communicator allows you to originate a circuit-switched call using your business line identity. This is done using the basic Call Back functionality on BroadWorks or the Call Through functionality available with BroadWorks Mobility.

Call Back is available if you have the BroadWorks Mobility, BroadWorks Anywhere, or Remote Office assigned. The application checks to see whether one of these services is provisioned with a phone number that matches the mobile number. If it is provisioned this way, it provides the option to make calls using the Call Back feature.

Call Through functionality is available if the BroadWorks Mobility or BroadWorks Anywhere service is assigned to the user and configured with at least one location. Call Through provides a more natural dialing experience. When a call is placed in this mode, the client communicates transparently with BroadWorks to obtain a temporary IP Multimedia Routing Number (IMRN). The client then calls the IMRN and connects the user directly to the destination identifying the call with their business line identity.

Note that Call Through requires "My Phone number" on iOS or "Own phone number" on Android local setting to be set to the phone number of the mobile device. This number must be set and must also match the number configured in BroadWorks Mobility or BroadWorks Anywhere in order for Call Through to work.

Starting with Communicator Release 21.2.x, the application provides Mid-Call Control services for business circuit-switched calls. For more information, see section *8.18 Mid-Call Controls for Circuit-switched Business Calls*.

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8.8 Contact Name Lookup for Incoming Calls and Call Logs

When receiving a call, Communicator searches for the name in the following sources and in the following order: XMPP contact name, Enterprise Directories, Local Contact List, *P-Identifier* header (SIP), and *From* header (SIP). If the number matches one of the contacts, the name is shown on the *Incoming Call* screen.

8.9 N-Way Calling (Conference)

Communicator Mobile supports network SIP-based conference calls. While on a two-way audio or video call, you can add more participants by using the **Conference** button. It opens the Address Book on the device to search for and select the new participant. Once the conference is established, the participants are shown on the *Device* screen.

The other way to create conference call or to add participants in an existing conference is to make a *new* second call and select the *merge* option.

8.10 Call Waiting

You can have one active call at any one time if you receive a new incoming call and accept it. The existing call is put on hold and you can change between these two calls by using the **Hold** and **Unhold** buttons.

8.11 New Call

The client supports starting a new call while in an ongoing call. The steps are as follows:

1) Establish call with remote party.
2) Initiate second call using the new call button.
3) Select a contact then choose a number. After the new call is established, the first call is put on hold. You can swap the two calls or to merge it in conference.

8.12 Call Transfer

The client supports transferring VoIP calls to another party. Two modes of transfer are supported:

- Attended Transfer – Establish a call with remote party. Select a contact then choose a number. Select the *call first* option. If the call is successfully established, you can talk with the third party privately before completing the transfer by pressing the **Complete** button.
- Unattended Transfer – Establish a call with remote party. Select a contact then choose a number. Select the *Transfer* option and the transfer is completed.

8.13 Call Pull

Call Pull can be used in scenarios where a user has two endpoints, for example, a VoIP desk phone and a mobile phone with Communicator. If the user has an active call on the desk phone, this call can transferred seamlessly to the mobile phone via the Call Pull button. Depending on the application, dialing settings, and service configuration, the call can be pulled as a VoIP or circuit-switched call to the mobile phone. There is no interruption to the voice call.

Call Pull button pulls audio only. Users can pull video calls directly by dialing the feature access code *11 and then selecting the video call button.

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8.14 Call Park

The Call Park service allows a “parking” user to park a call against a “parked against” extension. The “parked” user is placed on hold until a user retrieves the parked call. If the call is not retrieved within the provisioned recall time, then the parked call is reverted and presented to the “recall” user.

8.15 Call Recording

The Communicator client provides the ability for users to start, stop, pause, and resume call recordings. Call recording controls depend on user’s call recording mode configured on the server. The client supports the option to record a call before it begins or during the call itself.

Recorded calls are accessed outside of Communicator; you cannot view them using the client. Depending on your service provider settings, call recording behavior is one of the following (this cannot be controlled in the client but in the self-provisioning portal):

- Always – recording indication (icon) in the *In Call* screen.
- Always with pause/resume – recording indication (icon) in the *In Call* screen. Only pause/resume menus are available in this mode.
- On demand – recording indication (icon) in the *In Call* screen. No stop menu is available, only start and pause/resume. After a call is established, call recording starts on the server. If the user presses the **Start Recording** button during the call, the call recording is stored and the server keeps the recording of the whole call regardless of when the recording was started (except for pauses). Otherwise, if no start recording is initiated from the user, the call recording is deleted from the server.
- On demand with user-initiated start – recording indication (icon) in the *In Call* screen. Menu options available for start, stop, and pause. Call recording can be initiated at any time and several times during a call. There are separate call recordings for each call recording startup.
- Never – no indicators or menu options present. Pause/resume audio indication depends on your service provider settings. It is recommended to re-login after changing the call recording mode in the self-provisioning portal.

8.16 Security Classification

The Communicator Mobile client provides the ability to specify the security classification of a call. The security classification of a call party is determined by the security classification set at the BroadWorks enterprise level; all users within the organization inherit that security classification. Security levels are configurable on the server side, but there is always at least one security level, that is, *Unclassified*.

In addition, each user can change the security classification for the duration of the call via their handset. The user can change the security classification to a level less than or equal to their configured security classification.

For calls, the security classification can be changed during a call by a user and it works with supplementary services such as Call Transfer and Conference.

For chat, the security classification is displayed but cannot be changed.

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8.17 Bluetooth Support

You can control incoming and ongoing calls from a compatible Bluetooth headset.

The *System Requirements* section in the *Communicator for Desktop and Mobile Product Guide* lists the headsets that have been tested, although other Bluetooth devices should also work.

Communicator Mobile Android supports mute and volume control from the Bluetooth headset; however, answer and hang up are supported only from the application.

8.18 Mid-Call Controls for Circuit-switched Business Calls

Communicator Mobile provides Mid-Call Control services for business circuit-switched calls that are anchored at BroadWorks. This functionality is available for:

- Call Through and Call Back circuit-switched calls initiated from the Communicator client via the native phone dialer.
- Incoming circuit-switch calls delivered to the mobile phone via BroadWorks Anywhere, BroadWorks Mobility, or Remote Office location.

Supported Mid-Call Control services are:

- Hold / Resume (for more than one call, this functionality requires BroadWorks Call Control to be turned ON for the location)
- Transfer
- Conference (limited to five participants)
- Swap (requires BroadWorks Call Control to be turned ON for the location)
- End Call

After initiating a Call Through or Call Back call or after receiving a business circuit-switched call, the user can return to the main screen and launch Communicator to the foreground. At this point, the application brings a *Mid-Call Control* screen which can be used to manage the call.

8.19 Swipe Between Chat and Audio/Video Communication Views

Communicator provides the ability to switch between Chat and Audio/Video communications sessions for own My Room, other users' My Room, and two-way chat. The ability to switch between sessions is indicated by the presence of dots at the bottom of the screen. The user can perform a swipe to switch between the sessions.

8.20 Seamless Call Handover for VoIP Calls

Starting with Release 22.1, Communicator for Android Mobile and Tablet clients support seamless call handover for VoIP calls between WiFi and cellular data networks.

If the data connection drops during an ongoing VoIP call, then the application tries to use anther data connection, if available, or waits for a configurable period of time, (for example, one minute) for the data connection to be re-established. At that point, the call is retried on the new or re-established connection.

During the transition, there is a beeping sound played to the user and an indication in the user interface that the application is trying to reconnect the call.

Note that if a user has multiple ongoing calls, only the active calls are retrieved after restoring the data connection and the other calls are terminated. In which case, the user is notified about the terminated calls.

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A typical use case is when a call is started on a WiFi network in the office and the user leaves the office while on the call. In this case, the call is transferred to the 4G/LTE data network, if one is available.

Another use case is when the device loses data coverage for a brief period of time while the user is on a VoIP call (for example, the user enters an elevator). In this case, the call is recovered when the data connection is re-established, provided it is within the configurable period of time, which is typically one minute.

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9 Call History

Call history can be accessed from the *History* tab. Communicator saves a call history for all and missed calls.

On the list of calls, there are icons indicating whether a call was incoming, outgoing, or missed.

The list of the call items consists of an icon showing what kind of call it was (a green arrow means incoming, a blue arrow means outgoing, and a red arrow means missed). It also shows the name, number, *Unavailable* status for the caller, and below the name, it shows the number, if available. To the right, is the date of the call and the time the call was initiated.

Call history makes it easy for you to redial and call back when you miss a call or when you want to dial a contact with whom you have recently spoken.

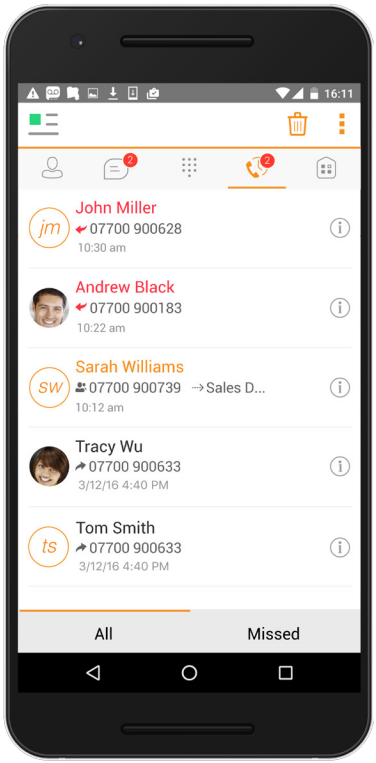

Figure 5 History Tab

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10 Side Navigation

The side navigation contains the following items:

- My status
- Call settings
- Preferences
- Update 911 Location
- Queues
- Test Call
- About
- Help
- Sign Out

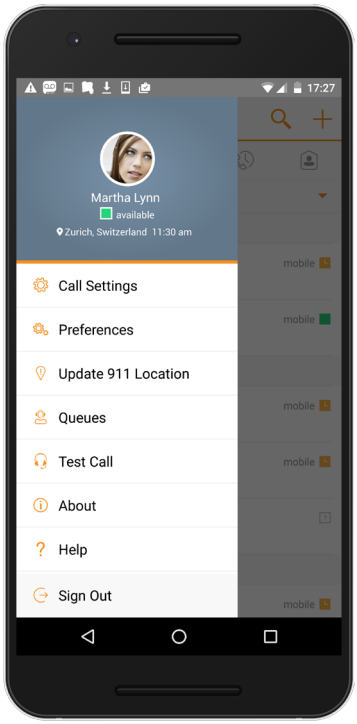

Figure 6 Side Navigation

10.1 My Status

You can set your own availability by tapping on your personal status from the side navigation. It opens the *My status* screen where you can change your avatar, personal message, and presence status.

NOTE: *Availability* can also be referred to as *presence status*, which was the term used in previous releases of Communicator.

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Your avatar is the picture that represents you in your friends' *Contacts* lists and in chat screens. Tapping on an avatar opens a dialog with options to select an existing image, to take a new one with your device's camera, or to clear your avatar.

> **NOTE**: In order to set an avatar when Communicator is working inside an Android for Work profile, a camera application inside the Work profile should be installed on the device. The system administrator should provision such an application for the given Work profile and the user should install it prior to initiating an avatar change action.

You can enter a status message into the area next to the avatar. This status text is shown in your friends' *Contacts* lists.

If you see the error message "Chat Unavailable" under any tab, it means that XMPP connectivity has been lost for chat and presence; however, you can still make calls. In this case, you should contact your service provider.

10.1.1 Availability Rules

Availability Rules allows a user to configure calling rules associated with each of the presence states. When the state is triggered, the associated rule is applied.

Each availability rule can be configured with one of the following options:

- No Rules
- Forward to Number
- Silent Alerting

10.2 Call Settings

The client supports the following BroadWorks service management features, allowing BroadWorks supplementary services to be turned on or off using the native client *Preferences* window:

- Do Not Disturb
- Personal Assistant
- Always forward
- Forward when busy
- Forward when no answer
- Forward when not reachable
- Remote Office
- Call From
- My Caller ID
- BroadWorks Anywhere
- BroadWorks Mobility
- Dialing Service
- VoIP Calls
- Simultaneous Ring
- Call Waiting

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- This phone number

10.2.1 Do Not Disturb

When you activate this service, all calls are typically blocked by the server and sent to voice mail.

10.2.2 Personal Assistant

Personal Assistant allows configuring an announcement to be played to callers when the called party is not available. The announcement notifies the caller of the reason the called party is not available, optionally providing information on when the called party will return and whether there is an attendant to attend the call. Based on that information, the caller can make a better decision on calling back, transferring to an attendant, or leaving a voice message.

Personal Assistant options can be configured in *Call Settings*. The following options are available:

- Presence different than None
- Until
- Transfer number
- Ring Splash

Select “None” for Presence to disable Personal Assistant.

10.2.3 Call Forwarding

By tapping on a different *Call Forward* option, you can enter a number to forward your calls as follows: Call Forward Always, Busy, or When Unreachable.

10.2.4 Remote Office

This service allows the use of any phone as the office phone from a charging and numbering perspective. For instance, a hotel room phone can be used as the office phone.

Enable Remote Office and specify a phone number to be used as the Remote Office number.

10.2.5 Block My Caller ID

You can hide or display your number when calling or communicating with other parties or contacts. To hide your number, set to “Enable”. To show your number, set to “Disable”.

10.2.6 BroadWorks Anywhere

BroadWorks Anywhere allows service providers to offer fixed-mobile convergence (FMC) services without additional equipment.

BroadWorks Anywhere simplifies communications for on-the-go users and remote users by extending the features of a desk phone to any other fixed or mobile device, regardless of the network or handset manufacturer. Callers dial one number and can reach you on any phone the user chooses. A desk phone, cell phone, and/or a soft phone can ring simultaneously.

Voice call continuity is possible with the ability to move live calls from one device to another without hanging up.

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Add locations (numbers) that can be used in the service using the **Add New Location** button. Use the *Alert all locations* to activate parallel ringing.

Select *Diversion inhibitor* to prevent a call from ending up as a voice mail, which can be problematic, for example, in conference call situations.

Select *Answer Confirmation* to receive a separate audio prompt when answering a call from that number (location). It may be useful in cases where, for example, mobile numbers are being used to prevent incoming calls going to mobile voice mail since the call will be ended without going to voice mail if the *Answer Confirmation* is not provided.

Select *Call Control* to enable the server platform to provide mid-call services such as Call Transfer and Conferencing for that number (location).

10.2.7 BroadWorks Mobility

BroadWorks Mobility is a flexible solution that extends the BroadWorks Centrex features transparently to the mobile network. This service provides a set of mobile capabilities that help meet the key requirements of mobile operators for deployment of business services to the mobile handsets.

The user can set the following attributes:

- Active – Flag to enable or disable the BroadWorks Mobility service for the user.
- Mobile Number – This is the subscriber's mobile number in E.164 format.
- Phones To Ring – The default is "Fixed". The options are as follows:
  - Fixed – If set, then only the user's desk phone is alerted.
  - Mobile – If set, then only the user's mobile phone is alerted.
  - Both – If set, then both the mobile phone as well as desk phone of the user are alerted.

The following attributes apply when the alerting mobile is set:

- Alert Click To Dial – If checked, Click To Dial calls alert the mobile phone.
- Alert Group Paging – If checked, group paging calls alert the mobile phone.
- Prevent Diverting – This attribute determines whether the Application Server enables a diversion inhibitor when extending a call leg to the mobile phone.
- Answer Confirmation – This attribute determines whether the Application Server prompts for an *Answer Confirmation* when the user answers the mobile call leg.
- Call Control – This attribute determines whether Call Control is to be performed by the mobile device (off) or by BroadWorks (on). This must be turned on to provide mid-call service features to the mobile originated or terminated calls.

10.2.8 BroadWorks Mobility Persona Management

Communicator Mobile supports changing the Calling Line ID (CLID) of the BroadWorks Mobility Identity on a mobile device. The user can configure the outgoing CLID in *Call Settings/Call From*. The options are *Mobile Identity, Profile Identity*, or *Hide Caller ID*. There is also the *Always Ask* option, which when selected, the user is prompted to choose the CLID when initiating a call from the dialer.

When the feature is enabled and available to the user, the Call Settings include a *Call From* entry, which is available for the user to choose whether the BroadWorks Mobility device uses its own identity versus the *Profile Identity* or the primary *Mobile Identity*.

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10.3 Preferences

The client supports the following Preferences:

- Language Support
- Sign in automatically
- Troubleshooting

10.3.1 Language Support

The client is prepared for localization and can be delivered in any language. Currently, the client is available in:

- U.S. English
- French
- French (Canadian)
- German
- Italian
- Netherlands
- Spanish (European)
- Spanish (Latin America)
- Korean
- Japanese
- Chinese

Additional languages are available upon request as part of a customization project.

10.3.2 Device ID

Communicator has the ability to lock the user to a single desktop or mobile device so that the software cannot be used on other hardware. The Android user can copy the Device ID from *Preferences* before signing into the application and provide it to the company administrator. The administrator locks Communicator to the reported device and the user can sign in only from this device.

10.3.3 Troubleshooting

The troubleshooting function can be used if there are issues encountered with the application. It collects and sends diagnostic information to a predefined support email address that is configurable via the branding process. This helps support personnel to identify the issues. The information sent consists of the application and media engine diagnostic logs.

Troubleshooting is managed by a menu entry in *Settings*. It can be accessed from two places in the client:

- From the Settings button on the *Sign In* screen – This opens the screen that contains the help and troubleshooting-related entries. This can be used before the user has signed in, which is most often for cases when a user has issues with signing in or with connectivity.
- From the *Preferences* screen, accessible from the side navigation. These are available while the user is logged in.

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10.3.4 Automatic Sign In

The user can choose to sign in automatically with Communicator Mobile with a default account when the client is started. Together with the functionality to start Communicator automatically at system startup, this makes it easier for users to remember to sign in and be available for communication.

10.4 Call Center Agent (Queues)

Communicator allows a user to join and leave Call Center queues and set their Automatic Call Distribution (ACD) status. This functionality is available based on the configuration and services assigned to the user.

To view the currently assigned queues, join and leave queues and change state, use the *Queues* entry in the side navigation menu.

10.5 Test Call

The client provides the ability to make an Audio or Video test call to an echo number. Note that the echo service is provided and enabled by the service provider.

A common example of using an echo service is:

- Press **Test Call** to initiate a call to the echo service, then follow the operator's instructions until you hear back your recorded message.

10.6 About

The *About* screen includes three sub views:

- Info – The Info view contains short information text, version, copyright, website URL, app ID, and build version.
- License – The License view contains the End User License Agreement.
- Legal Notices – The Legal Notices view contains third parties used by the application.

10.7 Help Page

The client provides web-based help that can be launched from the *Settings* view.

10.8 Sign Out

You can sign out at the bottom of the left-side navigation drawer.

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11 My Room

My Room is an always available and a permanent room that you can use to chat with anyone that joins.

My Room is accessible using the My Room icon  in the Tab bar.

You can add more participants using the add participants icon or they can join your room from your contact card. Once participants join the chat room, they can tap on the **Call** button of that screen to automatically join the conference.

My Room uses your permanent chat room, permanent collaboration room, and a conference bridge (audio or video). All *My Room* sessions start as chats but a call can be added to the session while in progress.

Others join your room by clicking your name on their *Contacts* list and selecting *Join Room* from the contact card.

You can dial into other contact's My Room audio bridge from the directory contact card.

11.1 Guest Client

This Guest Client feature is specifically intended for users outside of the company. Communicator users can invite Guest Client users to their My Room by selecting "*Copy Guest Join Link*" from the My Room menu button on the top right corner. The copied link delivery is outside the scope of UC-One (that is, email).

Guest users can join a session with audio in the web browser by requesting a Call Back using the provided dial-in number and conference PIN. They can also use group chat and sharing inside the web browser. However, guest clients do not have the private chat possibility and they can see the Chat History of messages that occurred after they joined the session.

The My Room owner is prompted to *accept* or *reject* Guest Client users joining My Room sessions.

A Guest Client user invitation can be revoked by selecting the "Reset Guest Link" from the My Room menu button.

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12 Search

Communicator supports search in Communicator Contacts and Contact Directories. The search is performed in a separate input field in the *Contacts* tab. Depending on the selected filter (All, Online, Local Address Book, or Directories), search results display contacts only from the current selected category.

In addition to results from the Enterprise Directory, the search is also performed in several more search sources:

- User's Personal Phone List
- Group's Common Phone List
- Enterprise's Common Phone List

The enhanced search is applied for both contacts searching initiated by the user and when receiving an incoming call, at which point the application performs a search for a display name corresponding to caller's number.

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13 Push Notifications for Calls

Communicator supports Push Notifications for Incoming Calls.

The feature leverages support on the BroadWorks Application Server to send Push Notifications to mobile applications over Google Cloud Messaging services.

Mobile client applications use Push Notifications to be alerted about incoming calls and accept the call as VoIP.

When there is new call, BroadWorks sends a push notification to the client, which is presented to the user as either OS-specific visual notification or in the user interface of the client application.

From a user experience standpoint, accepting a call works in the same way for both push-enabled clients and non-push-enabled clients. On Android, the call is presented to the user with an application-specific *Incoming Call* screen with Answer and Decline buttons.

Outgoing VoIP calls are performed with SIP registration on demand, which is transparent to the user. The SIP registration is done only when the user initiates the VoIP call.

In addition to Push Notifications for new calls, the solution also supports Push Notifications for new voice mail.

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14 Multi-Device Support

Communicator provides support for users with multiple devices. This includes several features:

- Chat invitations are sent to all devices. Before the session is accepted, messages are sent to all devices, and once answered, the chat messages go to the device that has sent a reply message.
- Retrieving one's own presence notifications, when another client updates the user's presence. The client updates its own status based on the information it receives from the server.
- Accepting a shared presence invitation in one client is also recognized by another client, and both clients start receiving presence updates.
- A new presence subscription made in one client is recognized in another. If the contact blocks the invitation, there are presence notifications from the server to all of the user's clients indicating that the subscription was terminated, and this information is shown to the user. If the client receives two presence authorization requests from two or more devices for the same user, it only shows one request to the user.
- Removing a contact from a *Contacts* list in one device is recognized in another client, and the *Contacts* list is updated (that is, the contact is removed) in the other client as well.

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15 Other Features

15.1 Deployment Configurations for IM&P, Audio, and Video

The mobile client can be deployed in several different configurations, based on configuration file parameters as follows:

- Primarily as an IM&P client only (no audio or video support)
- Primarily as a soft client with audio only (no IM&P or video)
- Primarily as a soft client with audio and video (no IM&P)
- Primarily as a Unified Communications (UC) client with audio only (that is, IM&P and audio but no video)
- Primarily as a UC client with audio, video, and IM&P
- Click To Dial (Call Back and Call Through with the native dialer)

For more information regarding which functionalities are available in your version of the client, contact your service provider.

15.2 Version Control

Version control is supported using the Android market mechanisms. When a new release is available, the old version is removed from the market and users of the previous version are notified about the update possibility.

15.3 Privacy Management

Communicator supports authentication with a user name and password for different services and servers requiring authentication. For convenience, the end user can save a user name and password for different realms.

When the end user adds contacts to the *Contacts* list, these contacts receive a *New Subscriber* dialog asking whether they allow the end user to see their presence. This information is stored in this contact's presence policies.

At any time, the user can edit the presence policies, (which are stored on the server). The user can see all contacts that are allowed to view the user's presence (white list) and users that are not allowed to view the user's presence (blacklist). This feature requires a compatible presence server.

15.4 Firewalls and Network Address Translations

The client supports *rport* (*RFC 3581*) for Network Address Translation (NAT) traversal and using the client behind a firewall. However, it is assumed that the client is mainly used with a session border controller (SBC), which also provides support for NAT traversal for several key features, such as calling (that is, currently unlikely to work without an SBC).

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15.5 Failover and Failback

The client supports failover and failback mechanisms for all of the used protocols: Xsi, XMPP, and SIP. This feature adds:

- Detect multiple connection endpoints (per protocol)
- Order connection points by priority
- Connect to the highest priority connection point
- Reconnect to the next connection point by priority one (if there is a problem with the primary connection point)
- Provide a failback mechanism to switch back to the primary, (which is the highest priority connection point)

15.6 Secure VoIP Communication

The client supports secure VoIP communication, using encrypted call negotiation and media streams. Mandatory, preferred, and optional secure modes are supported.

15.7 VoIP Quality of Service

The client has the ability to mark audio and video streams with Differentiated Services Code Point (DSCP) or Type of Service (ToS) flags using the Quality of Service (QoS) capabilities of the network equipment.

15.8 Emergency Call Address Change Service

Depending on service provider settings, a special dialog can be shown at login asking if the physical address should be updated. If not, login proceeds normally. If the user replies “yes”, a web browser opens with the possibility to update the physical address for emergency calls. Once the address update is complete, the user can return to the client and continue with the login process.

Depending on service provider settings, a separate Emergency Call Address Change Service (ECACS) menu item may also be visible in the application. This menu item allows the ECACS service to be invoked at any time after login.

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16 Acronyms and Abbreviations

This section lists the acronyms and abbreviations found in this document. The acronyms and abbreviations are listed in alphabetical order along with their meanings.

APN	Access Point Name
ACD	Automatic Call Distribution
CC	Country Code
CJK	Chinese, Japanese, and Korean
CLID	Calling Line ID
CS	Circuit Switched
DSCP	Differentiated Services Code Point
ECACS	Emergency Call Address Change Service
FMC	Fixed-Mobile Convergence
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure Sockets
IdP	Identity Provider
IM	Instant Message
IM&P	Instant Messaging and Presence
IMRN	IP Multimedia Routing Number
IP	Internet Protocol
NAT	Network Address Translation
PBX	Private Branch Exchange
PIN	Personal Identification Number
QoS	Quality of Service
RCS	Rich Communication Suite
RTCP	Real-Time Control Protocol
SAML	Security Assertion Markup Language
SBC	Session Border Controller
SIP	Session Initiation Protocol
SSL	Secure Sockets Layer
SSO	Single Sign-On
TN	Telephone Number
ToS	Type of Service

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UC	Unified Communications
UI	User Interface
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
WebRTC	Web Real-Time Communication
VM	Voice Mail
VoIP	Voice Over IP
VPN	Virtual Private Network
XMPP	Extensible Messaging and Presence Protocol
XR	Extended Report
Xsi	Xtended Services Interface

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17 Appendix A: Third-Party Software

This software uses Smack (http://www.igniterealtime.org/projects/smack/), license: http://www.igniterealtime.org/projects/smack/

This software uses DNSJava (http://www.dnsjava.org/), license: http://www.dnsjava.org/dnsjava-current/README

This software uses libphonenumber (https://code.google.com/p/libphonenumber/), license: https://code.google.com/p/libphonenumber/

This software uses OpenSSL (http://www.openssl.org/), license: http://www.openssl.org/source/license.html

This software uses libjpeg (http://sourceforge.net/projects/libjpeg-turbo/files/1.4.0/), license: https://github.com/libjpeg-turbo/libjpeg-turbo/blob/master/LICENSE.md

This software uses libpng (http://sourceforge.net/projects/libpng/files/libpng16/1.6.17/), license: http://www.libpng.org/pub/png/src/libpng-LICENSE.txt

This software uses libwebp (https://developers.google.com/speed/webp/downloa/), license: https://github.com/webmproject/libwebp/blob/master/PATENTS

This software uses libwebsockets (http://git.libwebsockets.org/cgi-bin/cgit/libwebsockets/), license: http://git.libwebsockets.org/cgi-bin/cgit/libwebsockets/tree/LICENSE

This software uses libjson (http://sourceforge.net/projects/libjson/), license: https://github.com/GerHobbelt/libjson/blob/master/License.txt

This software uses WebRTC (http://www.webrtc.org/), license: http://www.webrtc.org/license-rights/license

This software uses OpenH264 (https://github.com/cisco/openh264), license: https://github.com/cisco/openh264/blob/master/LICENSE

This software uses SQLCipher (https://www.zetetic.net/sqlcipher/), license: https://www.zetetic.net/sqlcipher/license/

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