

Ava Administrator's Guide

v4.2.2

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Introduction

The Ava Administrator's Guide contains information relevant to the initial implementation of an Ava, and also to its ongoing operation.

In general the Ava requires two supporting roles:

- The **Ava Caretaker** is someone located at the same site as Ava, who can perform basic maintenance and cleaning functions.
- The **Ava IT Administrator** is someone who understands the infrastructure supporting the Ava, who can provide an initial level of support in case of problems, and who will manage all Avas deployed at the customer's location(s) and creation of user accounts.

Information in the Ava Administrator's Guide includes:

- **Ava Overview:** High level description of the Ava, how it interacts with your IT infrastructure, and how people use it.
- **System Configuration:** How the various components of an Ava system work together and details on the configuration of specific components. .
- **Using the Ava Administrator Console:** A user guide to the Ava Administrator Console web application.
- **Troubleshooting:** Guidance on solving simple problems and advice on when to contact Technical Support.

References

The following documents are related to this document:

- **Ava Installation and Configuration Guide:** Instructions on overall system configuration (including remote application information, managing users, etc.)
- **Ava Caretaker Poster:** Can be provided to local Caretakers as orientation on the Ava's features.
- **Ava Security and Privacy:** Documents Ava's data security design and privacy policies.

Conventions

Throughout the manual the following conventions are used:

	This is a warning. If the person using the information ignores or violates this instruction, serious damage could result to the product or injury to the person.
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This is an alert. If the person using the information ignores or violates these instructions, some minor negative consequences could occur.



This calls out supplemental information or information of particular note.

Comments and Suggestions

The Ava team welcomes your comments and suggestions for changes or additions to improve this manual. Please provide them to support@avarobotics.com.

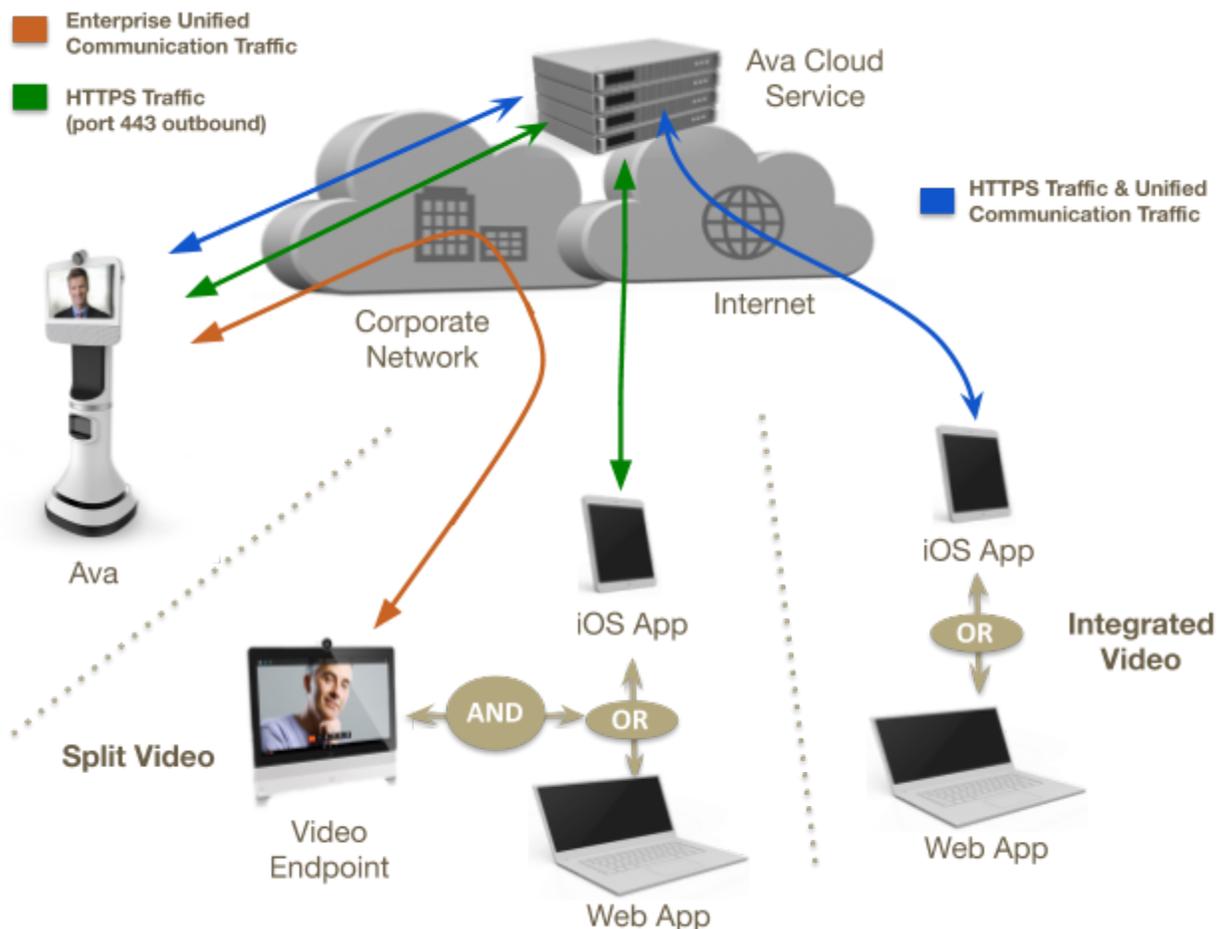
Ava Overview

Ava Video Collaboration enables remote users to collaborate with anyone, anywhere in your facility. By giving the remote user complete freedom of movement, Ava delivers an unparalleled immersive collaboration experience.

Ava pairs an autonomous and safe mobile robotics platform with a video conferencing endpoint for an unmatched video and audio experience. All you do is choose the remote location you would like to visit and Ava will navigate there by itself and start a video conferencing connection. There are two video conferencing modes that may be used, depending on the video conferencing options available to you:

- Integrated video: both video conferencing and control are provided in the Ava app.
- Split video: video conferencing is handled by the customer infrastructure, while control is provided via the Ava app.

These video solution topologies are shown in the following image.



Components and Terminology



If the LEDs are...	It means Ava is...
Solid white	Travelling, waiting, or in session
Fading white, alternating sides	Connected to its charging station
Solid red	Motionless with stop button engaged - will not move in this condition
Flashing red	Experiencing a system problem - will not move in this condition

Configuration & Maintenance

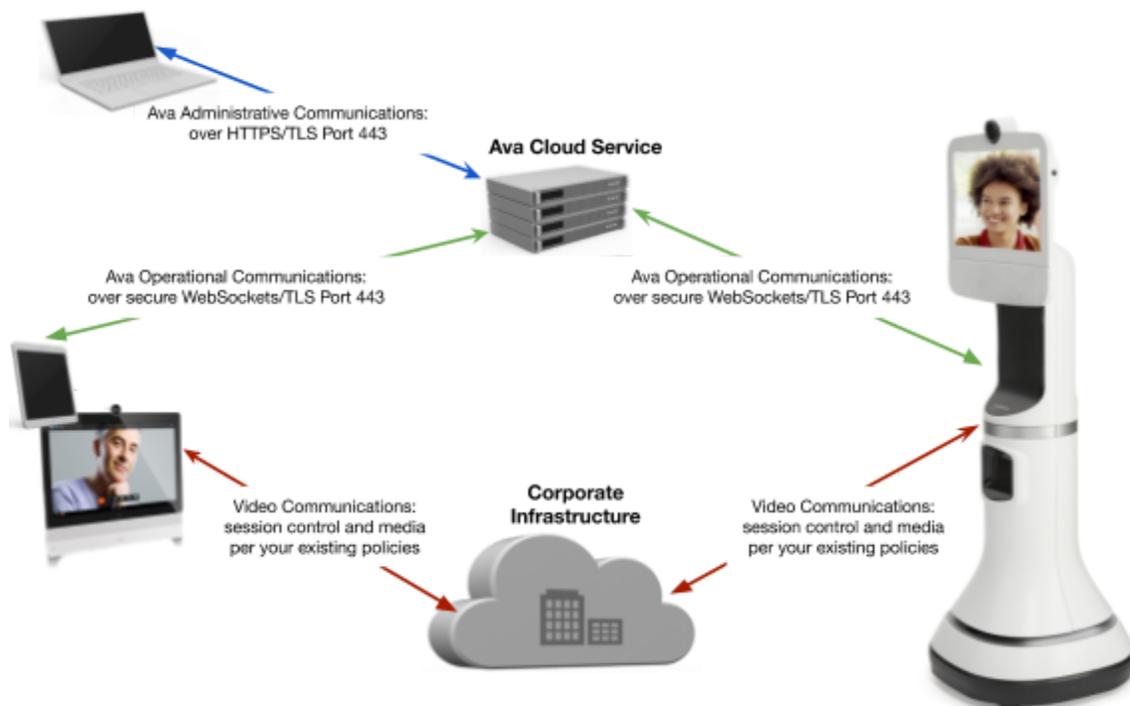
This section describes Ava data communications paths, discusses WLAN network configuration considerations, details the supported wireless authentication and encryption protocols, and reviews proxy support. This information is broken down into the following sections:

- **Data Communications and Security:** Discusses how the various components of an Ava System communicate along with details on wireless communications and security.
- **System Configuration:** Describes how information links the various components of an Ava system, and discusses component configuration and management.
- **Software Upgrades:** An overview of how software upgrades are managed.
- **Site Changes After Installation:** Relays how to handle site changes after installation.

Data Communications and Security

Ava Robotics is committed to ensuring data security and protecting the privacy of your information. The Ava solution is built with industry-standard security practices and employs strict policies to protect your data.

At the highest level, Ava Communications can be divided into three major categories: robot operational communications, video communications, and administrative communications.



Robot Operational Communications: The Ava Control Application (Ava App) transmits operational commands from the remote user to the Ava Cloud Service, which in turn communicates with the Ava robot.

All communications between the Ava App and the Ava Cloud Service, and between the Ava Cloud Service and the Ava, are sent over a secure WebSocket connection through port 443, using a Transport Layer Security (TLS) protocol for encryption and authentication. The Ava Cloud Service is the termination point for all Ava App and robot communications. No information or data passes directly between the Ava App and the Ava.

Video Communications: The Ava solution is designed to integrate easily into your existing video infrastructure environment. The video conferencing endpoint that is part of the Ava robot is completely configurable through its own user interface to match your specific environmental requirements for video call control and media.

There are two options for video communication deployment:

- Option 1: Integrated Video – the video communications are integrated into the Ava app. In this deployment mode, the video codec is registered to a cloud video infrastructure, managed under the umbrella of the Ava Cloud Service.
- Option 2: Split Video – the video communication experience is provided in a dedicated video endpoint or video communications software. In this deployment mode, all video communications between the Ava robot and the endpoints that you supply for your remote users are managed by the infrastructure policies you have in place. No video call control or media traffic is routed through the Ava Cloud Service.

Administrative Communications: Administrative access to the Ava Cloud Service is through the Ava Cloud Service Administrator Console web application using HTTPS over port 443.

System Configuration

A number of configuration steps are required during installation. Many configuration steps take place on the robot and in the Ava Configuration Interface. WiFi, Ava Cloud Server, and video configuration are examples of items that are configured in this interface. For more information on these specific configurations, please see the *Ava Installation and Configuration Guide*.

Additional configuration in the Ava App is also necessary to use the Ava System. In order to teleport using Ava from your iPhone or iPad, you will need an iPad or iPhone running iOS version 12 or newer. To download and configure the Ava Teleport App:

1. In the App Store, search for 'Ava Teleport App'.
2. Tap the Ava Teleport App and install it.

3. After the app is installed, tap “Open”.
4. Enter the Ava Cloud Service Hostname, username, and password. The Cloud Service is only entered once on the initial login.

If you are connecting to a network that uses proxy authentication, enter an additional username/password provided by your network administrator. Depending upon device WiFi settings, HTTP proxy authentication will be configured as either manual or automatic. If proxy configuration is manual, only the proxy password is required. If proxy configuration is automatic, both the proxy username and password are required. Once login is complete, the App is configured to store the proxy login and will automatically log in in the future.

If company policy permits calendars to be replicated to remote devices, the iOS App scheduling function can be configured to read the iOS device's calendar. Meetings scheduled in the iOS device's calendar then appear in the App, where an Ava can be reserved by clicking on the calendar entry. Additionally, if the Ava software detects that the meeting location matches a known destination that the user has the ability to visit via Ava, a + icon appears that allows an Ava reservation with no further information needed. To configure the Ava Teleport App to directly display external calendar meetings:

1. Link the external calendar to the device calendar using standard company procedures.
2. Go to Device Settings > Ava Teleport and set calendar access to be on.



Ava sessions are not replicated up to the external calendar, nor is Ava configurable as a resource in the external calendar.

In order to teleport using the Web App, a PC or Mac with a supported browser (for a list of supported browsers, see Web App User's Guide). Next, open the Ava Web App from the web link provided. If you are asked to allow notifications, agree. You will then be directed to the login page where you need to enter the username, and password.

Software Upgrades

Ava Robot, Cloud Service and Web App

Ava Robot, Ava Cloud Service, and Ava Web App upgrades are managed by Ava Robotics. Upgrades to Ava's software are remotely pushed to the robot. During the upgrade process, Ava will be unavailable for use and may need to be rebooted. Upgrades are coordinated between the customer and Ava Support to ensure that interruptions are minimized.

If the Ava Cloud Service and Web App software needs to be upgraded, the outage times will be communicated to the customer. Outages will be kept to a minimum and occur off-hours as

much as possible.

Ava Teleport App for iOS

Ava Teleport App for iOS is managed via the Apple App Store, and updates made available by Ava Robotics are managed per user's settings on their devices.

Video Codec Software

There are interactions between Ava Robot software and Video Codec which require careful consideration of compatibility between both components' software versions. Do not update the Video Codec software without consulting Ava Support.

Site Changes After Installation

During installation, the installer guides Ava around the site so that it can create an internal map of the location. This internal map is then paired to the user visible map graphic that is used as part of the Ava App interface. Finally, destinations and preset locations within spaces are created. Ava can then follow user commands to autonomously drive to the defined preset destinations and return to its charging station.

Changes to the site after initial deployment is complete may require changes to the map in order to maintain full functionality. For all changes, contact support@avarobotics.com.

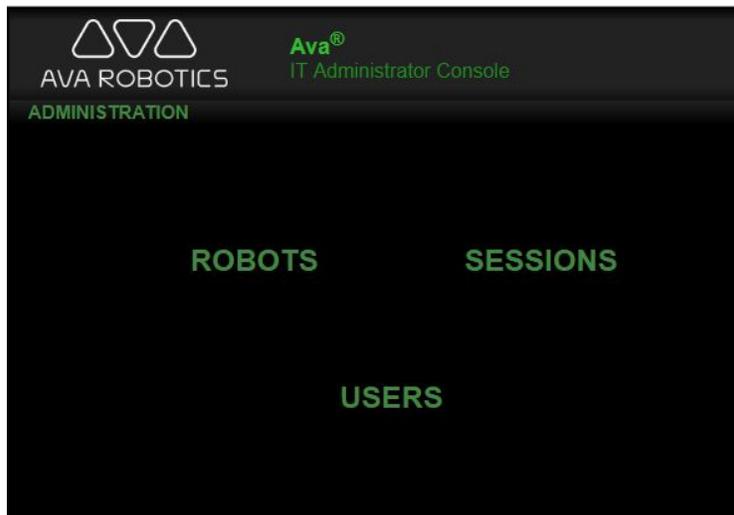
Moving to a New Location

Ava Robotics can help with a project of moving Ava to a different location. This includes shipping materials, reconfiguration of Ava, and mapping of new locations. Please contact Ava Support.

Ava IT Administrator Console

The Ava IT Administrator Console is a web-based application that allows you to check on Ava's status, manage users, and monitor reservations. To open the browser to the following web address: <https://CloudServiceAddress/cust_admin> where CloudServiceAddress is the string provided to you by Ava Robotics.

A username and password are required to access the application. Once you've logged in, you will see the following console.



This main console screen is split into three sections:

1. **Robots:** contains information about the robots installed at the customer site.
2. **Sessions:** displays a list of scheduled and current sessions.
3. **Users:** lists all Ava users and allows the IT Administrator to modify user information.

Robot Management

The main Robot screen, shown below, displays information for all of the robots within the Cloud Service. This information includes:

- **Name:** Ava robot serial number.
- **Robot Status:** a single health status is displayed in this box. See the *Robot Health Status Details* section for more information on the different statuses.
- **Session Status:** displays if a robot is in session and which user.
- **Software:** reports the core software version running in the Ava.
- **Site:** the name of the operating area of the robot.
- **Battery:** displays the overall battery charge percentage.

The screenshot shows the 'ROBOTS' section of the Ava Robotics IT Administrator Console. It features a search bar and a table with columns for Name, Robot Status, Session Status, Software, Site, and Battery. Three robots are listed: SA00103 (Docked, 100% battery), SA00109 (Docked, 97.1% battery), and SA00110 (Disconnected).

Name	Robot Status	Session Status	Software	Site	Battery
SA00103	Docked		avaBCR15.u1404-x86.Ava_4.2.0.8.tgz	Ava Robotics, Cambridge (Up to date)	100%
SA00109	Docked		avaBCR15.u1404-x86.Ava_4.2.0.8.tgz	GBFB (Up to date)	97.1%
SA00110	Disconnected				

Clicking on the robot name will display a Robot Details page. This page shows all device health status, software and firmware versions, and map database information. If multiple maps exist for your site, you are able to change Ava’s map.

The screenshot shows the 'ROBOTS' tab selected in the top navigation. Below it are tabs for 'SESSIONS' and 'USERS'. A 'Configure' button and 'Codec Web Interface' link are visible. The main content is a detailed view for robot SA00103, showing various status and configuration parameters.

Robot Name	SA00103
Status	Docked
Alerts	Disabled
Maintenance Mode	<input type="checkbox"/> Disabled
Overall Health	OK
Device issues	All OK
Software Updater	Ava_3.5.8
Application	Ava_4.2.0.8
Megaboard Firmware	1.3.0
BIOS	22.0.9 07/21/2014
Codec Firmware	ce9.9.3.950ff1628bb
Position	View robot in map
Active Map DB	AvaRobotics_052919
Provisioned Map DB	AvaRobotics_052919
Provisioned Map DB Version	5/7/2020, 8:16:05 PM Central Daylight Time
Current Map DB version	5/7/2020, 8:16:05 PM Central Daylight Time
Map DB status	Up to date
Battery SOC	100%
Power Source	Charging Station
Stop Button	Released (normal operation)

At the bottom right of the table, there is a dropdown menu showing 'AvaRobotics_052919 [current]' and a 'Download and Install' button.

The **Configure** button will take you to the Ava Configuration Interface (ACI) for that robot. For more information on the ACI, please see the *Ava Installation and Configuration Guide*. The **Codec Web Interface** button will take you to the video codec admin page.

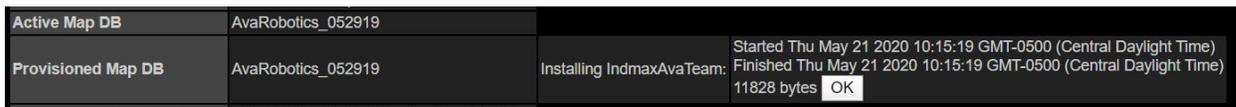
Changing Ava's Map

When changing maps, it is important to ensure that the dock is in the same location every time. If the dock has been moved since Ava was last on the floor, localization will be incorrect. Should you be unsure of Ava's dock location or need it to be updated within the map, email support@avarobotics.com for assistance. Include the floor layout with a marking indicating where Ava's dock is located so that the support team is able to properly update the map.

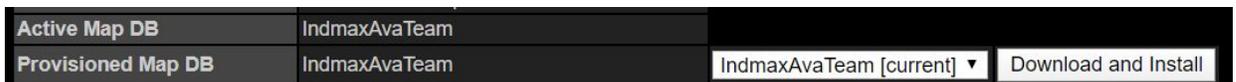
1. Put Ava in Maintenance Mode, so that no users start a session while you are moving it.
2. Move Ava to the charging station location for the map you will be moving Ava to.
3. Log in to the admin console and select the robot whose map you would like to change.
4. Select the new map from the dropdown menu and click 'Download and Install'.



5. You will see a message that the installation has started.



6. Once the map has been installed, both the 'Active Map DB' and 'Provisioned Map DB' rows should display the name of the map you selected. If both are not updated, you may need to refresh the page.



7. Remove Ava from Maintenance Mode.

Robot Health Status Details

Icon	Status Message	Notes
	Docked	Ava is engaged with the charging station.
	In use	A session is in progress.
	Idle	Away from the charging station, but not in session (for example, returning to the charging station).
	Docked, low battery	Ava is engaged with the charging station and the batteries are less than 15% charged.
	Low battery	Ava is not engaged with the charging station and the batteries are less than 15% charged.
	Hardware issue: <component>	One or more of Ava's internal components is reporting a warning. All warnings can be seen in Robot Details.
	Stop button engaged	Someone has pushed the stop button, Ava cannot be used until the stop button is released.
	Disconnected	The Ava Cloud Service is no longer in contact with the robot. Clears on Ava re-establishes connection.
	Hardware fault: <component>	One or more of Ava's internal components is reporting a failure that prevents the robot from operating. All Faults can be seen in the Robot Details Page.
	Not localized on map	Ava is connected to the Cloud Service, but does not know its location within the map.
	Maintenance Mode	If a robot requires maintenance, it can be put in this mode. Ava will be unavailable for use while in this mode.

Session Management

The Sessions Management screen is shown below.

The screenshot shows the 'SESSIONS' tab in the administration interface. It features a search bar, a 'Show 100 entries' dropdown, and a table with the following data:

Date/Time	Duration	Username	Session Info	Site	Status	Delete?
11/10/2017 3:54 PM	01:05	sienna	Current Location	KBZ_DTown	In session	Delete
11/11/2017 10:00 AM	01:00	banuap	E62 Entrance	MIT Sloan Exec Ed Suite 20161214_expanded	Reserved	Delete
11/13/2017 3:00 PM	01:00	dennis	Classroom 1	MIT Sloan Exec Ed Suite 20161214_expanded	Reserved	Delete
11/14/2017 9:00 AM	01:00	banuap	Classroom 2	MIT Sloan Exec Ed Suite 20161214_expanded	Reserved	Delete
11/16/2017 9:00 AM	01:00	dennis	Classroom 2	MIT Sloan Exec Ed Suite 20161214_expanded	Reserved	Delete
11/21/2017 9:00 AM	01:00	banuap	Classroom 2	MIT Sloan Exec Ed Suite 20161214_expanded	Reserved	Delete
11/24/2017 1:00 PM	01:00	banuap	Classroom 2	MIT Sloan Exec Ed Suite 20161214_expanded	Reserved	Delete

Showing 1 to 7 of 7 entries

Current and future sessions are shown with scheduled duration, user information, session location, the site, and the status. Possible sessions statuses include:

- **Reserved:** Ava Cloud Service is managing a reservation for a future scheduled session.
- **Dispatched:** Ava Cloud Service has dispatched a robot to the reservation destination.
- **Arrived:** Ava has arrived at the reservation destination and is waiting for the user to login.
- **In Session:** user has checked in and is in session with the robot.
- **Unclaimed:** user has failed to check in for a scheduled session within 15 minutes, the robot is released for other users.

If a session needs to be terminated, click the **Delete** button. This action is immediate and cannot be reversed.

User Management

The main page for user management is shown below. This screen provides a comprehensive list of all users, if they are enabled to login to the Cloud Instance, and any video endpoints setup with their account.

Enabled	Username	First Name	Last Name	Video Endpoint	Email
<input checked="" type="checkbox"/>	amit852001	Amit			
<input checked="" type="checkbox"/>	AnujMIT	Anuj			
<input checked="" type="checkbox"/>	banuap	Banu			
<input checked="" type="checkbox"/>	dennis	dennis			
<input checked="" type="checkbox"/>	ganji	Babu			
<input checked="" type="checkbox"/>	nicolas	Nicolas			

Details on any user can be seen by clicking on the green arrow in the leftmost column. This will expand the user information and provide more detailed user management options. When making changes to a user profile you can click **Save** to keep updates, **Reset** to undo changes without closing out of the details screen, **Cancel** to discard changes, or **Delete** to permanently delete the user.

info@avarobotics.com Ava Robotics

Username * info@avarobotics.com

Enabled

Role User

First Name * Ava Robotics

Last Name

Email * info@avarobotics.com

New Password

Sites

- Ava500Map (Ava 500 Map)
- AvaHQ_Granada_1 (Ava Robotics, Ava HQ)
- AvaHQ_Granada_3
- AvaHQ_Granda_2 (Ava Robotics, Tatoonie)
- AvaRobotics_052919 (Ava Robotics, Test)
- Cirtronics_1st_Floor (Cirtronics, Manufacturing, 1st Floor)
- Cirtronics_2nd_Floor (Cirtronics, Office Space, 2nd Floor)
- IndmaxAvaTeam (INDMAX, HYNDAVA, 3rd)

Video Address Label

Video Endpoints Add

Use integrated video by default

* These fields are required

Save Reset Cancel Delete

All fields in user details are the same as the fields found in the Add User screen, shown below. You get to this page by clicking **Add User** on the user management main screen.

The screenshot shows the 'Add User' form in the Ava Cloud Service Administration Console. The form is titled 'Add User' and is located under the 'USERS' tab. The form contains the following fields and options:

- Username ***: A text input field.
- First Name ***: A text input field.
- Last Name**: A text input field.
- Role**: A dropdown menu with 'User' selected.
- Email Address ***: A text input field.
- Password ***: A text input field.
- Sites**: A list of sites with checkboxes:
 - Ava500Map (Ava 500 Map)
 - AvaHQ_Granada_1 (Ava Robotics, Ava HQ)
 - AvaHQ_Granada_3
 - AvaHQ_Granda_2 (Ava Robotics, Tatoonie)
 - AvaRobotics_052919 (Ava Robotics, Test)
 - Cirtronics_1st_Floor (Cirtronics, Manufacturing, 1st Floor)
 - Cirtronics_2nd_Floor (Cirtronics, Office Space, 2nd Floor)
 - IndmaxAvaTeam (INDMAX, HYNDAVA, 3rd)
- Video Endpoints**: A section with an 'Address Label' button and a '+' button.
- Use integrated video by default
- * These fields are required
- Add**: A green button at the bottom.

Fields marked with a star are necessary to add a user. Details on the various fields are as follows.

- **Username:** assigned when the user is created, is used to sign into the Ava App. Usernames must be 3-80 characters and can contain numbers, letters, and symbols in the printable ASCII set.
- **First & Last Name:** first and last name will be displayed when Ava is waiting for a session with the user.
- **Role:** either User or Administrator.
 - User: can login to the Ava App
 - Administrator: can login to the Ava App and IT Administration Console
- **Email Address:** the user's email address, used to qualify an App request for a forgotten username or password.
- **Password:** when creating passwords are recommended to meet the following criteria:
 - At least 8 characters
 - At least 1 number and 1 letter
 - Cannot repeat the same character 3+ times sequentially
 - Cannot contain the user's first name, last name, or username

If any of the password criteria are violated, you will be notified that the change cannot be saved. The same criteria are enforced when a user changes their password in the App.

Functionality is provided to auto-generate a strong password. When the password box is active, clicking the arrows will generate a password. Clicking the dots will toggle between hiding and showing the password.

- **Sites:** if you have multiple sites or operating areas, users can have restricted access to certain sites. A user must be authorized for at least one site in order to use the Control App. Users cannot be authorized to access a site until the map for that site is completed.
- **Video Endpoints:** if a site/user has video endpoints they can be added by the IT Administrator or by the user. Each video endpoint is made up of an address and a label. Clicking the + button will display these fields to add a new endpoint. The address is the SIP URI to be called and the label is the name as presented in App for user (for example 'Main Conference Room'). If the user wants to use integrated video as the default video call type, that box can be checked.

Once a user has been created, one more checkbox - **Enabled** - becomes an option in the User Details page. If not checked, users cannot login to the Control App and administrators cannot login to the Administrator Console.

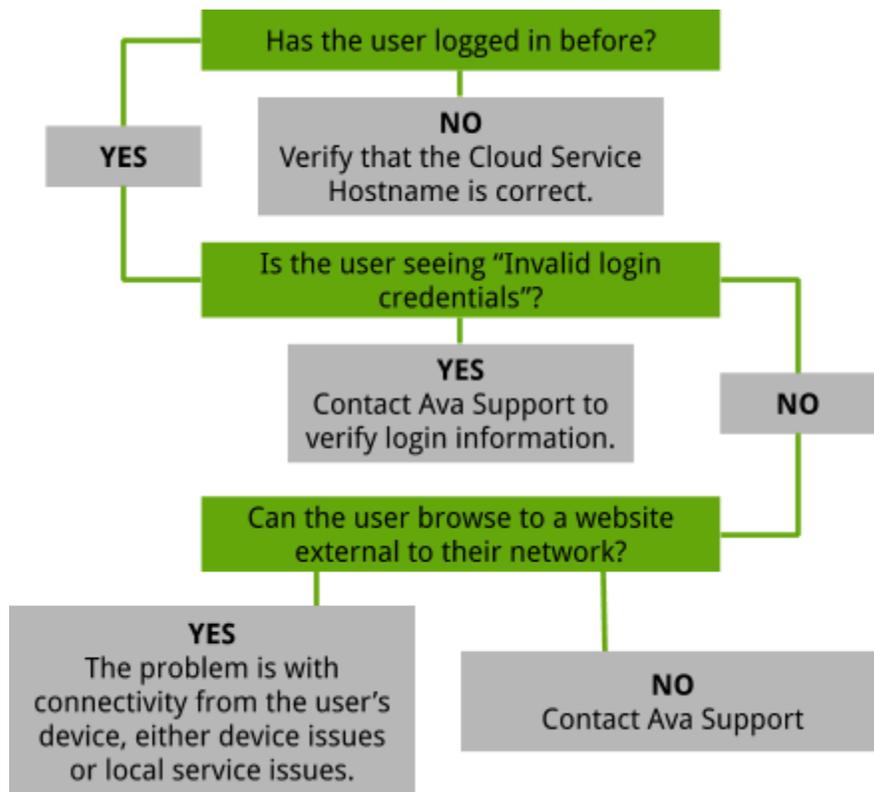
Troubleshooting

Local Symptoms

For troubleshooting information about local robot symptoms, please refer to the Troubleshooting section of the *Ava Installation and Configuration Guide*. The remainder of this troubleshooting section will discuss non-robot specific issues.

Remote User Symptoms

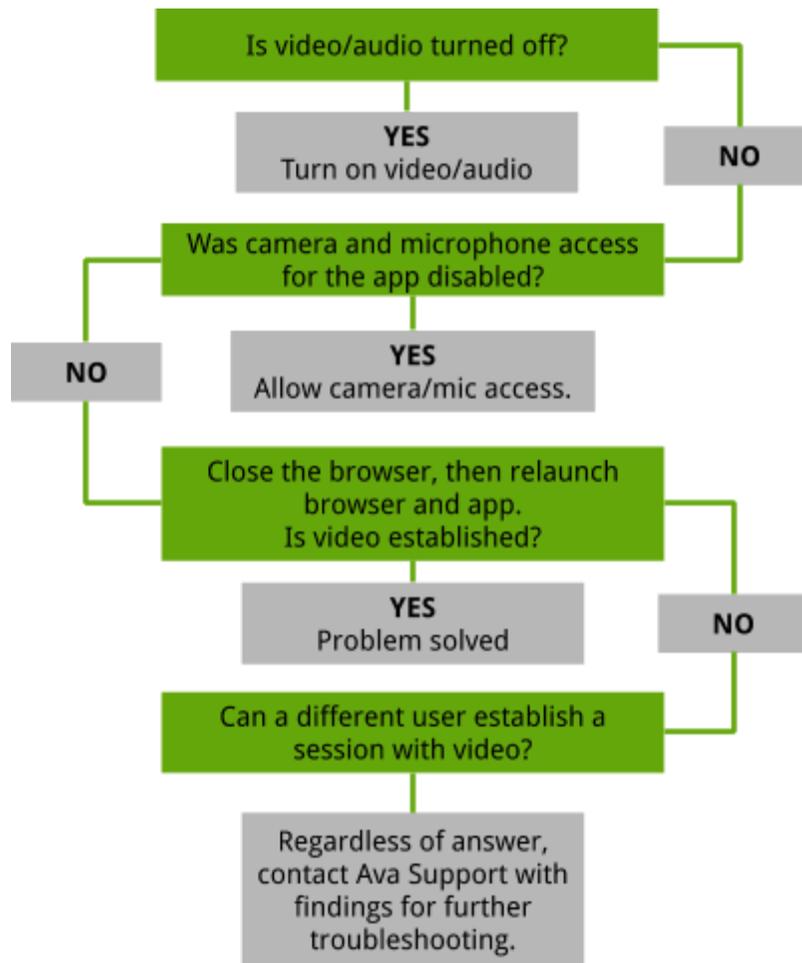
User Cannot Log In (to iOS or Web App)



iOS App Is Not Responding

Have the user press the Home button and clear the app from running in the background, then go back into the App. If the App still doesn't work, contact Ava Support.

No Video/Audio Established



Poor Video Quality

When video quality is poor, try to determine if the problem:

- Only happens when traveling.
- Occurs only in certain parts of the building.
- Consistently happens.

Once you have narrowed down when video quality is a problem, contact Ava Support.

Ava Is Not Accessible

If you are starting a Teleport Now session and cannot select a destination it means no Avas are currently available. This could be due to:

- All Ava's at the desired site are in session with other users (check Admin Console, Sessions page)
- Ava(s) at desired site not having sufficient battery power to be dispatched for a session

(check Admin Console, Robot page)

- Ava reporting faults or losing connection to the Ava Cloud Service (check Admin Console, Robot page)

If during a session you see the message “*Ava is not currently accessible,*” it means that Ava is no longer connected with the Cloud Service. Ava will repeatedly try to reconnect, please wait a few minutes to see if connection resumes.