

LABCLS-1402

Troubleshoot RoomOS video devices on Control Hub with Remote Access

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Table of contents

1. Getting Started	3
1.1 Overview	3
2. Guides	5
2.1 Guides	5
3. Scenarios	8
3.1 Hello Remote Access	8
3.2 Scenario 1 - Language	10
3.3 Scenario 2 - Camera	12
3.4 Scenario 3 - Customizations	14
3.5 Scenario 4 - Call	16
3.6 Scenario 5 - MTR onboarding	18

1. Getting Started

1.1 Overview

This lab introduces Remote Access and related features to help you troubleshoot and support RoomOS devices efficiently. You'll learn how to manage devices across distributed and scaled deployments for a seamless support experience.

This course is designed for Cisco partners, Integrators, and administrators working with RoomOS and MTR video devices.

Before we dive in, here are a few important notes.

1.1.1 Disclaimer

Although the lab design and configuration examples could be used as a reference, for design related questions please contact your representative at Cisco, or a Cisco partner. The official guidelines and documentation for the feature can be found here:

Remote access to Board, Desk, and Room Series devices.

1.1.2 Learning Goals

In this course we will learn how to:

- Use and leverage Remote Access
- Configure and support RoomOS and MTR devices with Remote Access
- Reduce in-room presence during support
- Visually verify issues remotely
- Fix issues remotely
- Verify customizations remotely
- Manage the limitations of Remote Access and how to bridge the gap

1.1.3 Control Hub Access

In this course we will use Control Hub to remotely access devices.

To log into Control Hub navigate to Control Hub and use the email and password designated for you provided by the instructor.

1.1.4 Guides

Here is a list of guides you can follow throughout the lab:

- **LOG IN TO CONTROL HUB**
- **ENABLE REMOTE ACCESS FOR YOUR COMPANY VIA CONTROL HUB**
- **ACCESS LOCAL DEVICE CONTROLS FROM CONTROL HUB**
- **USING XAPI COMMANDS ON CONTROL HUB**
- **USING XAPI COMMANDS ON LOCAL DEVICE CONTROLS WEBPAGE**
- **GET AN ACTIVATION CODE IN CH**

1.1.5 Scenarios

Here is a list of scenarios we will go through on this lab:

- **HELLO REMOTE ACCESS**
- **SCENARIO 1 - LANGUAGE**
- **SCENARIO 2 - CAMERA**
- **SCENARIO 3 - CUSTOMIZATIONS**
- **SCENARIO 4 - CALL**
- **SCENARIO 5 - MTR ONBOARDING**

1.1.6 Let's get started

If you are ready let's begin with Hello Remote Access.

2. Guides

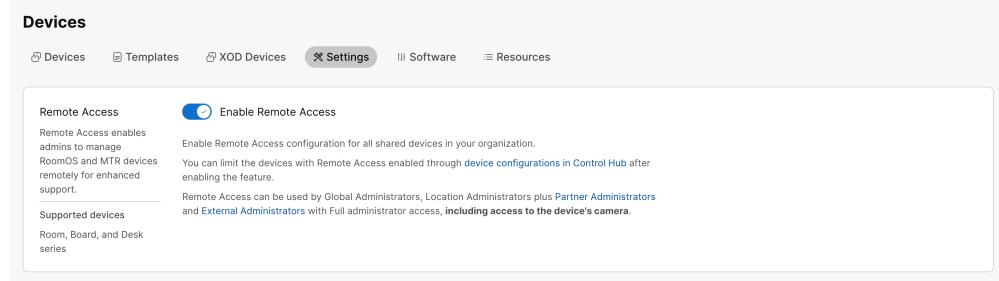
2.1 Guides

2.1.1 Log in to Control Hub

To log into Control Hub navigate to admin.webex.com and log in with the email and password designated for you.

2.1.2 Enable Remote Access for your company via Control Hub

To enable Remote Access feature in Control Hub for your company. Navigate to Device -> Settings in control hub, read the description of Remote Access and toggle on Enable Remote Access.



You also have the option to enable/disable Remote Access per device, refer to the documentation for that.

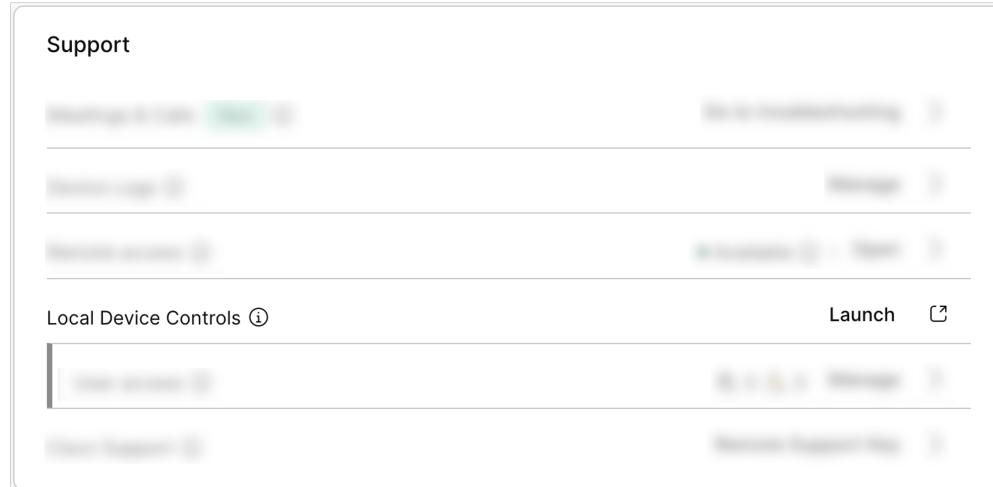
In case you want to activate it directly on a device using the xAPI the public xConfiguration that activated Remote Access is:

xConfiguration RemoteAccess Mode: On/Off

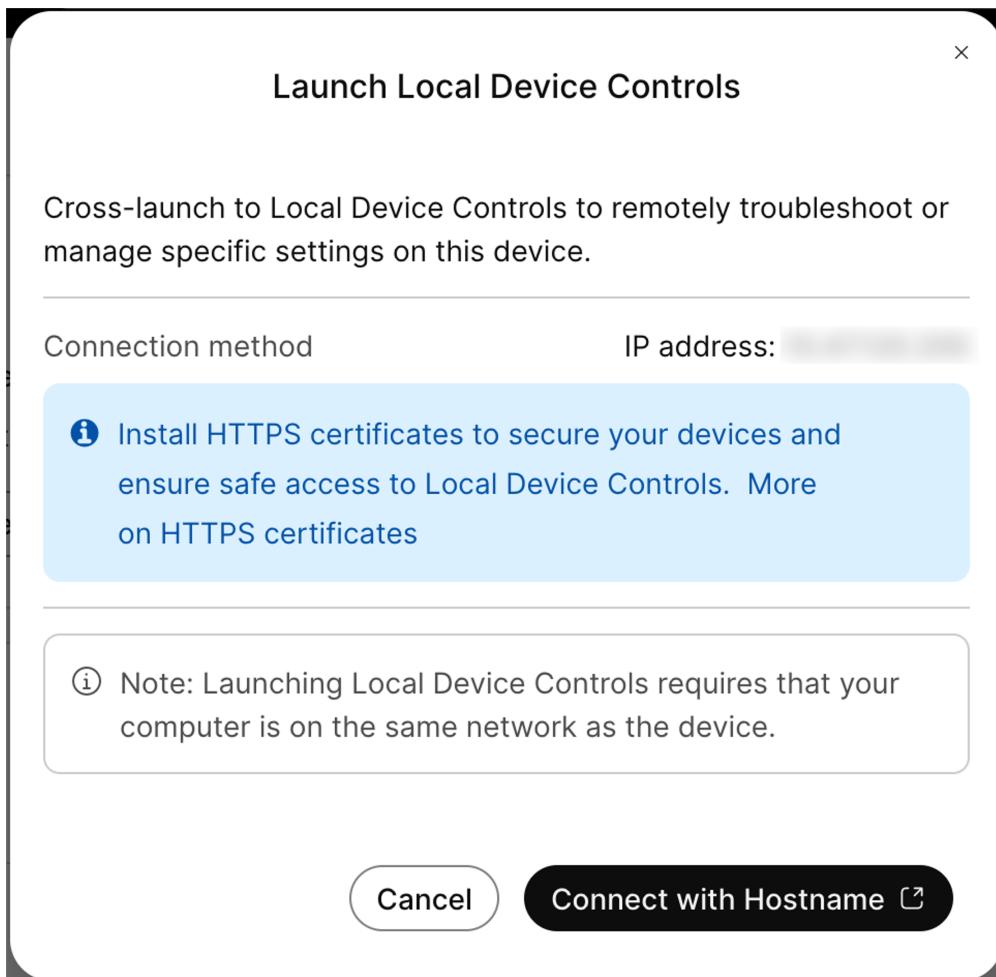
2.1.3 Access Local Device Controls from Control Hub

It's important to note that the Local Device Controls, also known as the device's Web Interface can only be accessed from the same network as the device.

To access the local device controls first you have to navigate to the device's overview page in Control Hub and find your device on the devices tab. To find out the name of the device in front of you check the top left corner of the device home screen. Once you are in the device's page you can click on Launch on the Local Device Controls within the Support card as seen in the image below:



Press "Connect with Hostname" or "Proceed" and you will have access to the Local Device Controls hosted of the device.



Accept risks in case you are prompted

You are accessing a page hosted on the device, its safe to ignore the warnings from the browser and continue.

You will land on the home page of Local Device Controls of the device as seen in the image bellow:

Having access to this page opens up a series of options that will be useful for us in this lab. Such as:

- On the home screen you will find the Developer API tab on the left where you can execute xCommand and xConfiguration directly on the device. This can be useful in case you want to control a call with xCommands for instance.
- You also have the macro editor, where you can create your own macros in combination with UI Extensions. This will be useful for us in the integrator scenario where we will have to visit this page to fix our customizations.
- Call tab. This will be useful in the call scenario where we will have started a call from Remote Access. Remote Access is not supported during a call. The remote access session will end and you will be able to control the call from this tab on the Local Device Controls.
- Remote Access from the Local Device Controls. You can give it a quick try! After that end the session and navigate back to the home screen.

Configuration NetworkServices Websocket: FollowHTTPService

Using remote access from the Local Device Controls requires that the configuration NetworkServices Websocket is set to FollowHTTPService.

2.1.4 Using xAPI commands on Control Hub

- To run an xAPI command on Control Hub log in to Control Hub follow the instructions from Logging into Control Hub. After that find your device and click on the device to reach the device's overview page. Here you will find an Action button with the option of *Run XCommand*. From there you can run commands from RoomOS xAPI page directly on the device.

More at RoomOS xAPI page

2.1.5 Using xAPI commands on Local Device Controls webpage

- To use Local Device Controls you need to be on the same network as the device.
- To log in to the Local Device Controls follow the instructions from Access Local Device Controls from Control Hub. If you have a local user registered on the Local Device Controls you can also log in to Local Device Controls with that user by navigating to the device's ip address.
- Go to Developer API on the home screen of Local Device Controls and run the xCommands.

More at RoomOS xAPI page

2.1.6 Get an Activation Code in CH

In Control Hub from the Devices Page click Add Device -> Shared Usage -> Next -> New Workspace. Here you can give any name for the workspace click Next -> Cisco Room and Desk Devices -> Next (there is no need to change anything). Click on Add Device to get the activation code. That is the code you will use on the device.

The screenshot shows the 'Devices' section of the webex Control Hub. On the left, a sidebar lists various navigation options like Overview, Art Center, IRING, Analytics, Troubleshooting, Imports, ELEMENT, Users, Groups, Locations, Workspaces, Devices (which is selected), Apps, Device Count, Security, Organization Settings, and more. The main content area has a title 'Show me how to get the activation code in CH'. It features a search bar and tabs for Devices, Templates, XOD Devices, Settings, Software (with a red notification dot), and Resources. A search bar shows 'Find devices by status, type, and more' with a result of '1 device'. Below it, a 'Filter by' section includes buttons for Online (0), Expired (0), Offline: maintenance (0), Offline (1), Issues (0), and Offline: deep sleep (0). A table lists one device: 'Rooms & Desks' under 'Type', 'Cisco Desk Pro' under 'Product', 'Offline' under 'Status', and 'Belongs to' with a 'Desk 1' icon. There are also 'Edit' and 'Delete' icons next to the row.

3. Scenarios

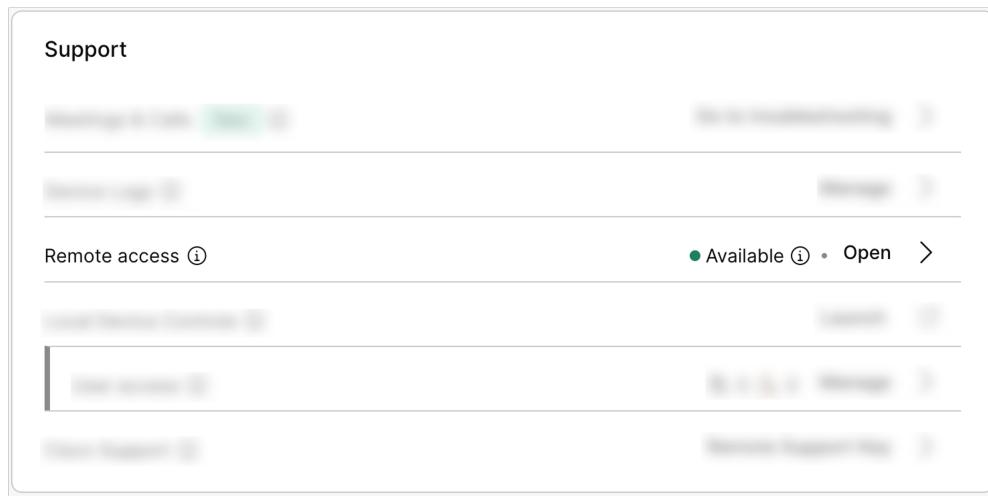
3.1 Hello Remote Access

3.1.1 Your first remote access session

To get started lets make sure we can start a remote access session on your device. We first need to make sure the settings are properly set and you can start a remote access session from control hub.

Remote Access is already enabled on the org we are using, but for reference this is how you would activate the feature, by following [Enable Remote Access for your company via Control Hub guide](#).

Once that is done log into Control Hub, on the devices tab search for your device and click on it. You will land on the device's page in control hub where you have a lot of information and extensive control over the device. What interests us is the Remote Access feature in the support card as seen in the image below:



Click open and you will land on the Remote Access page.

Here you can see the occupancy and state of the room on the top and, as an admin, decide if you want to start your session now or when the room is empty.

Here you can also have an overview of the capabilities of the feature and be reminded of a few things before starting the session:



Start the remote access session

Things to know before you start the session

- ⌚ Users can decline the access request or end the session anytime.
- * Everything you do on the device's interface will be visible to the end user.
- ▢ You can access the device's camera feed.
- ▢ You will see the shared content on the device.
- ☒ You won't hear what's going on on the other side.

Start the session

< Go back

Once you click "Start the session" the device will open a popup message along with a sound cue letting any user present know the a remote access session is about to start. After 20 seconds the session will start and you will have control over the device from Control Hub.

If you are able to see the device interface on control hub you are ready for the first scenario! Lets go to Scenario 1 - Language.

3.2 Scenario 1 - Language

Lets warm up with a simple scenario.

3.2.1 Problem

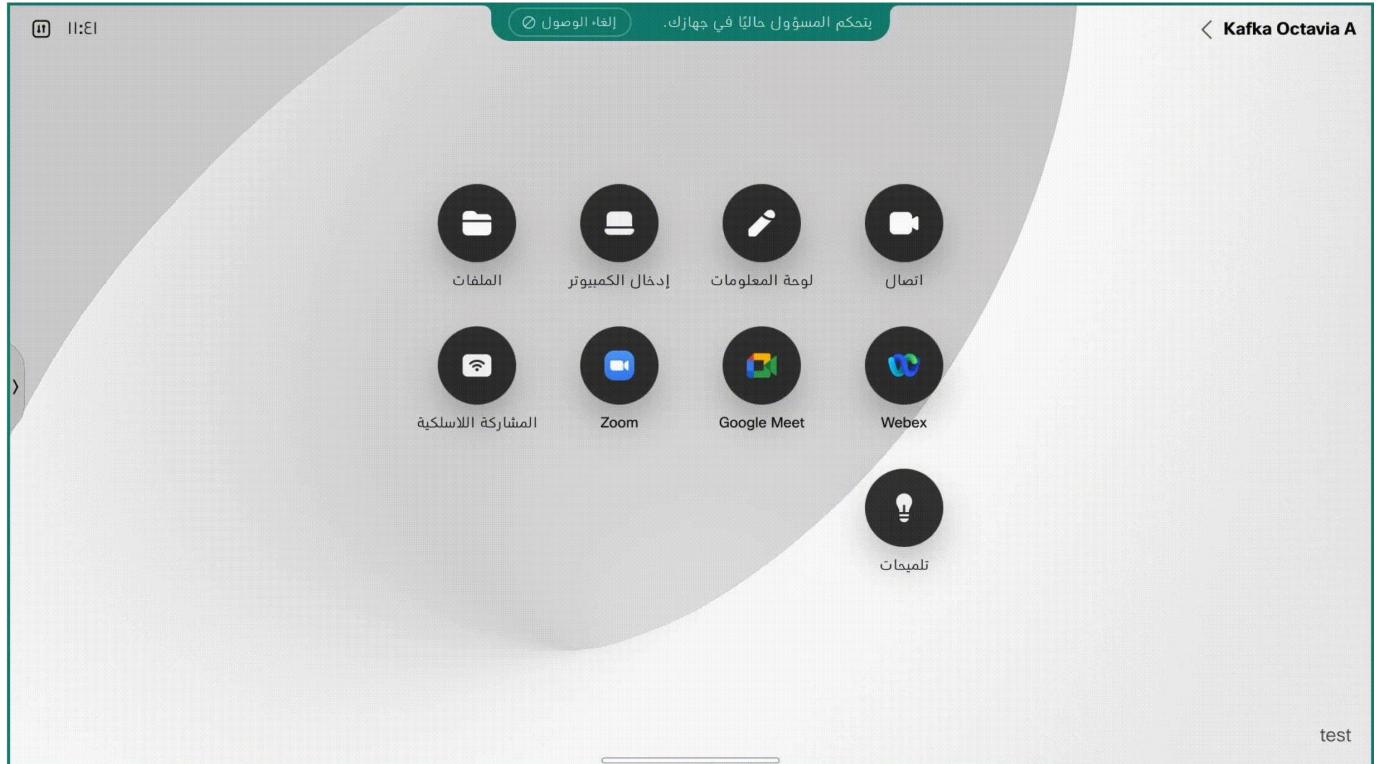
In this scenario the end user is reporting that they are not able to understand the UI at all as its in an unfamiliar language to the user and the buttons seem to be on the opposite side, not where they are expected to be. In this case the language is an Right to Left (RTL) language that was previously set due to a visit from foreign customers.

As an admin it might be hard to explain to the user how to change the language in the UI on RTL for an unexperienced user. You will fix it using a remote access session as a warm up exercise.

It is perfectly possible to fix this using our xAPI over Control Hub or the Local Device Control, but we will use Remote Access to give support to the user and as a way to have a visual verification that the UI on the device has changed properly.

User report:

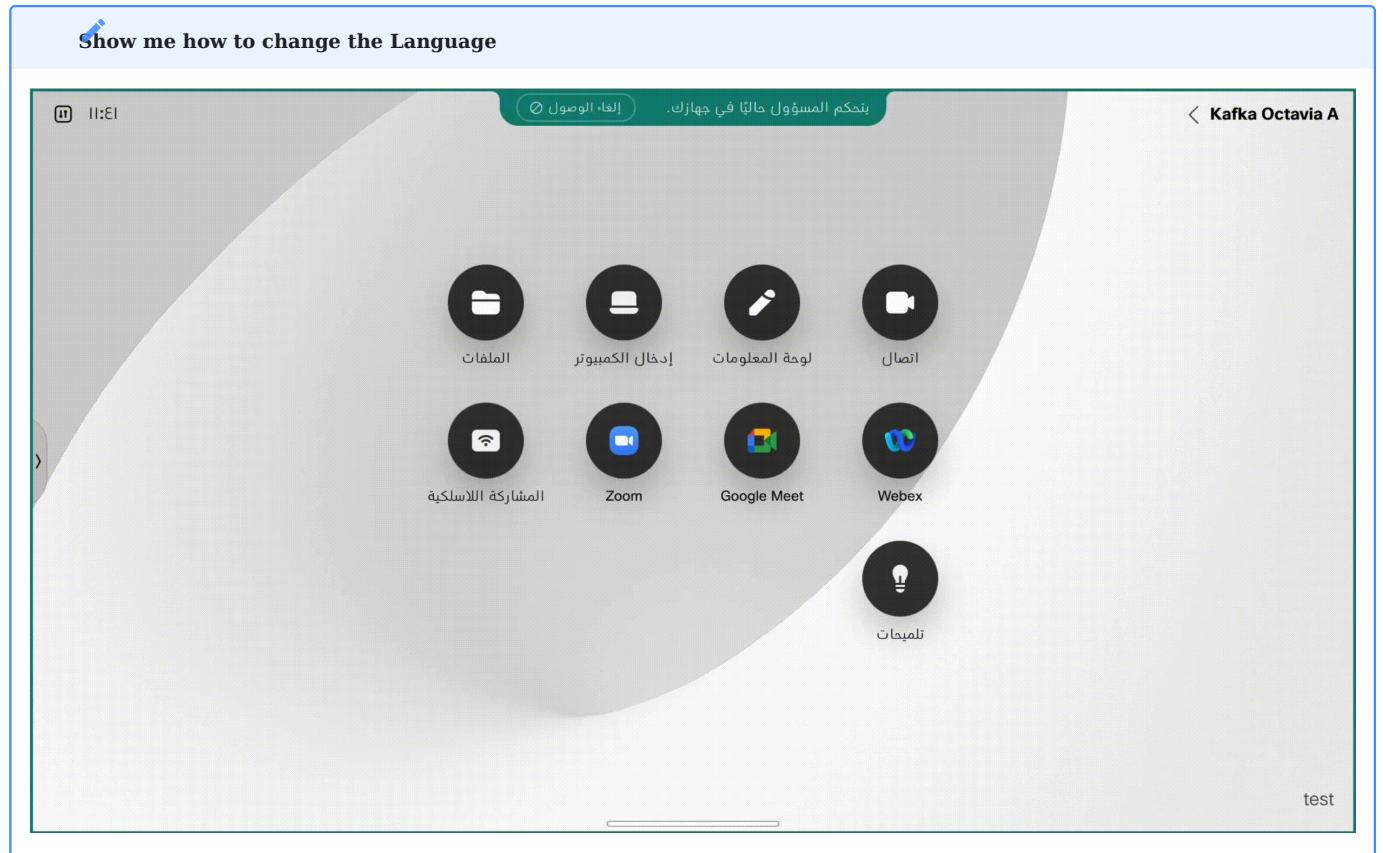
I am not able to use my device since I do not know the language and the buttons are in the opposite side of where they used to. Could you please come to this meeting room to fix it? Can you set the Language to English? Here is a screenshot of the device:



3.2.2 Your task

In this scenario what you will need to do is start a remote access session, access the settings of the device, and set the language of the device to English so the user is able to use the device in the language they requested.

- To start a Remote Access session follow the instructions from Hello Remote Access.
- After the session is established you will have access to the devices as if you are in the room. You will see that the language is not set to English, and the buttons are in a different position. Setting the language to English will also change the location of the  buttons to the default position. Go to settings by clicking the top left settings icon , or on the left side of the screen perform a swipe right movement.
- On the bottom of the screen on the side panel click settings, the button with the cog icon , from here click on the button  with the icon  that represent languages. From here select English. After that the device will switch to English. You can verify that visually and assure the user the issue is fixed. No need for a trip to the meeting room in question.
- You can now be sure that you have solved an issue for your customer with minimal effort and no need to be present in the room.



Lets move on to the next scenario Scenario 2 - Camera.

3.3 Scenario 2 - Camera

3.3.1 Problem

In this scenario the end user is reporting the camera is misaligned.

As an admin it might be hard to explain to the user how to fix it by themselves, it would require a few messages back and forth at least.

Heading to the location of the endpoint could be costly as well so to solve this scenario we will use Remote Access to help the end user configure the camera and also set up meeting zones.

User report:

The camera on my device is always aiming at the ceiling, it always worked as expected until last week when it was used for a different presentation when the camera angle was changed. Can you come fix this? Here is a screenshot of the device:



3.3.2 Your task

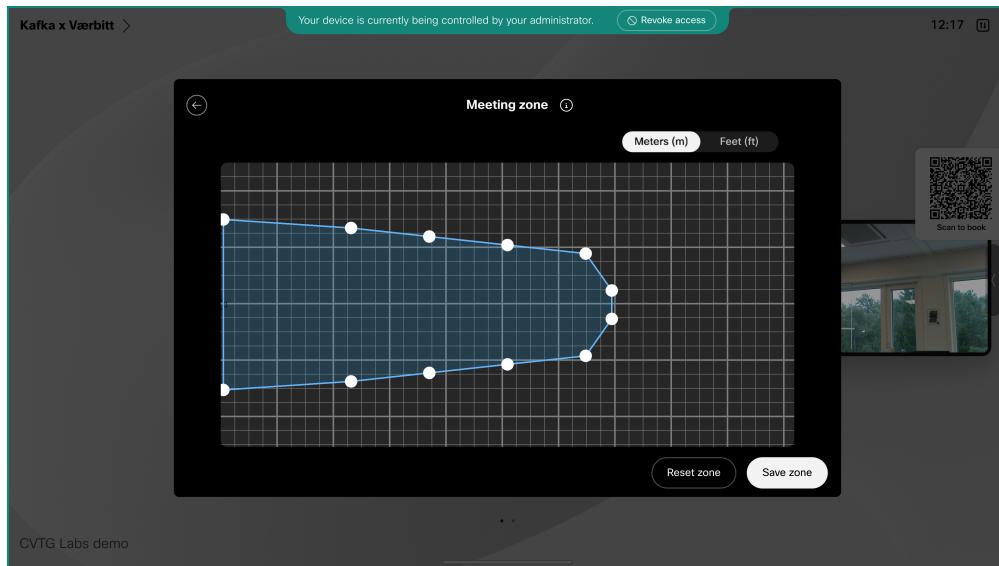
In this scenario what you will need to do is start a remote access session, access the settings of the device, and fix the camera view so the end user is supported:

- To start a Remote Access session follow the instructions from Hello Remote Access.
- After the session is established you will have access to the devices as if you are in the room, first thing to do is check the current state of the self view. To do so go to settings by clicking the top right settings icon . Click on the camera icon and set Camera mode to Auto/Dynamic instead of Manual. Here you can also have a visual confirmation that the camera is pointing at a reasonable place. There are additional things you could do here such as apply different backgrounds or blur the background. Or even set up Meeting Zone to prevent from possible issues in the future.

Setting up meeting zones

- An additional improvement the end user experience is configure the meeting zone. On the device navigate to Device Settings at the bottom of the sidebar, then Camera -> Meeting Zones. Select Either Rectangular zone or Round zone. As seen in the image here you can outline the area that the device should focus when having a meeting. Meeting Zones allows you to limit

the area of interest for the speaker tracker and video framing logic allowing the device to reach better results when deciding what to include in the video frames.



You can now be sure that you have solved an issue for the user with minimal effort, no presence in the room was needed, and you improved the meeting experience.

We are ready for the next scenario where we will take the role of an integrator and be sure our deployment is working as expected: Scenario 3 - Customizations.

3.4 Scenario 3 - Customizations

3.4.1 Half Wake Integration

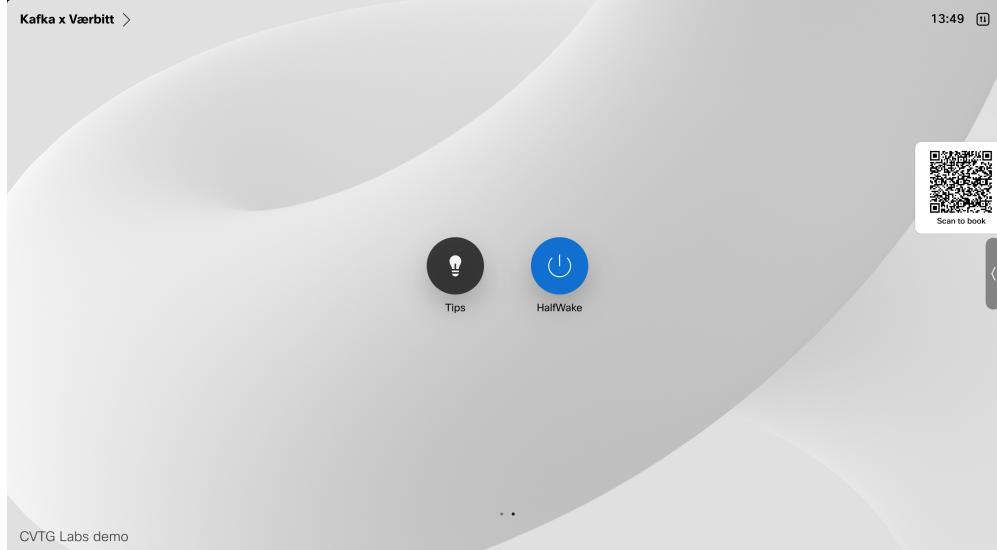
In this scenario you are an experienced integrator and you have deployed some customizations with UI extensions and macros. Its called Launch Halfwake and it put the device in a halfwake state showing signage with the URL set by the integrator.

3.4.2 Problem

In this scenario you are an integrator and you have deployed a customization with a UI extension (button) and a macro. You installed a button on the home screen that puts the device in a halfwake state and shows a signage web page, for that to work you also have installed a macro called *LaunchHalfwake.js*. Your task here is to verify that the custom button added to the home screen does what its designed to do.

As an integrator you wanna go to the room and test your customizations to be sure it works and is ready for customers to use.

By clicking this button on the home screen (you might need to swipe to the next page of home screen on the device to find it):



Before you start!

You will verify that the button Halfwake is not working.

Your goal is to verify that after clicking on the Halfwake button the user will see the Signage web page opening on the device.

3.4.3 Your task

In this scenario you want to start a remote access session and verify that your integration is working. You will see that its in fact not working exactly as expected. You just caught an error before reaching the end user! Well Done!

Since in this scenario you are an expert integrator you know exactly what to do to fix this issue. From the device's overview page you will need to go to the macros tab inside Control Hub, and activate the Launch Halfwake macro to get the correct behavior.

Here is the Macros page in Control Hub where you should activate the LaunchHalfwake macro and hit save:

The screenshot shows the 'Macros' page in the Cisco Control Hub. At the top, there are navigation links for 'Cisco Desk Pro', 'Kafka x Værblitt', and 'Issues'. Below the header, a message states: 'Macros are snippets of JavaScript code that run on the video device, customizing its behavior. Access the full Macro Editor in the device's Local Device Controls'. A search bar labeled 'Search by name' shows '1 macro'. A table lists one macro: 'LaunchHalfwake' with status 'Disabled' and a 'Saved' button. On the right, there are 'Refresh' and 'Add macro' buttons. Below the table, a log window shows system messages: '9:28:41 AM [system] > Using XAPI transport: WebSocket', '9:28:41 AM [system] > Starting macros...', '9:28:41 AM webRTC_configurer > QJS Ready', '10:26:40 AM webRTC_configurer > Tearing down', and '10:26:40 AM [system] > Runtime stopped!'. At the bottom right of the log window are 'Cancel' and 'Save' buttons.

Once you have done that you will be able to verify with a remote access that the custom button works as expected. You should click on it and verify that Halfwake or a webpage opens on the device to be sure your integration is working.

If you are familiar with the UI extensions and macro engine you can play with the code a bit and test the behavior with remote access. You can also install macros from the public macro repository available here: <https://roomos.cisco.com/macros>. If you create a user in Local Call Control you can install macros from the public repository (please check the disclaimer section before using any macro from the public repository on your deployed devices).

Lets move over to Scenario 4 - Call.

3.5 Scenario 4 - Call

3.5.1 Start a call for the end user

3.5.2 Problem

In this scenario you will start a call from remote access for the end user but they want the continued support during the call. Remote Access during a call is not supported so we will have to find ways to continue supporting the call using other tools from Webex.

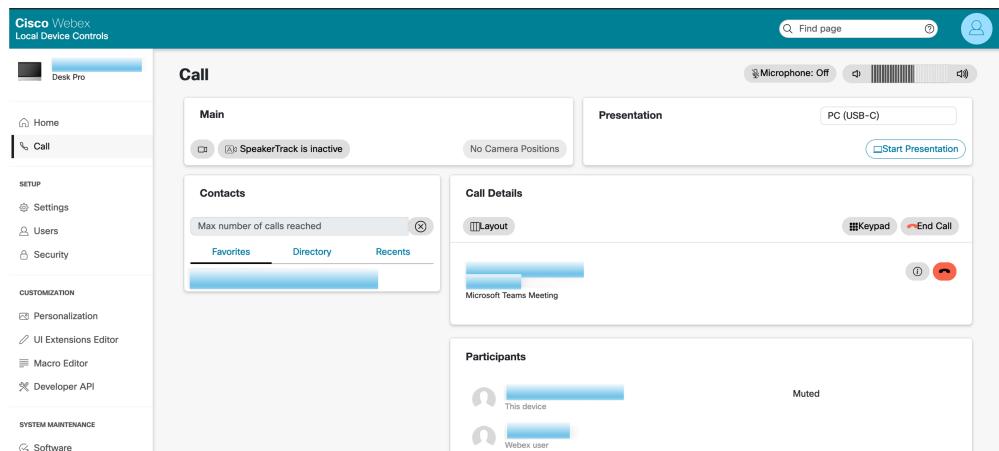
3.5.3 Your task

In this scenario you will start a remote access session, and from the device you will start a call on the device. Once the call is established the remote access session will be closed since its not supported in call. From here you have 2 options to continue to give support for the call, one is use the xAPI commands. But the best available option is to log in to Local Device Control and use the Call tab to control the call.

1. Start a Remote Access session. To start a Remote Access session follow the instructions from Hello Remote Access.
2. Start a new meeting. To start a new meeting click on the Webex button on the home screen of the device and then click on *Start a new meeting*.
3. You will notice the remote access session will be closed. To continue to give support for the call user either Option 1 - Local Device Control and use the Call tab to control the call or Option 2 - Use the xAPI commands.
4. Once you have played with the call controls either on the Local Device Controls or using the xAPI commands you can end the call remotely.

Option 1: Use Local Device Control to log in to the Web Interface and give support for the call tab in the Web Interface

- This is the preferred way today to continue giving support for devices during a call.
- To log in to the Web Interface of the device follow the instructions from Access Local Device Controls from Control Hub.
- Once logged in navigate to the Call tab. Here you will have full control over the call on the device. You can play around with the controls, mute, unmute, etc. Should look something like this:



Option 2: Use the xAPI to continue giving support for the call

It is possible to use xAPI to continue giving support for the call. You can do that by using xAPI commands from RoomOS xAPI page. You can execute them on Control Hub, over the Web Interface, or directly on the device.

You have two options with the XAPI commands approach:

- Using xAPI commands on Control Hub
- Using xAPI commands on Local Device Controls webpage

From there you can run commands that will allow you to control the call. A list of relevant commands are described below.

HERE ARE A FEW XAPI COMMANDS YOU CAN RUN TO CONTROL THE CALL

Here are a few examples:

```
xCommand Call Disconnect  
xCommand Presentation Start  
xCommand Presentation Stop  
xCommand Audio Microphones Mute  
xCommand Audio Volume Decrease/Increase
```

These are the option available for now for controlling the call on a device without remote access in the discussed scenario. Using the Call tab on Local Device Controls is the best available option for now.

Lets move on to our challenge scenario Scenario 5 - MTR onboarding.

3.6 Scenario 5 - MTR onboarding

In this scenario you will be an admin that needs to get the Microsoft Teams Room (MTR) code that shows on the device to be able to finish the MTR onboarding process. The device still needs to be registered to control hub so we can start a remote access session. Your goal is to see the MTR code on remote access session, we will not go further with the MTR registration. Once you reach this screen you are done with this scenario:

The screenshot shows the Webex Control Hub interface. On the left, the navigation menu includes sections like Overview, Alert Center, Monitoring, Analytics, Troubleshooting, Reports, Management, Users, Groups, Locations, Workspaces, Devices (which is selected), Apps, Account, Security, Organization Settings, Services, Updates & Migrations, Messaging, and Remote Access Lab. The main content area shows a Cisco Desk Pro device under 'Connected devices/displays'. The device's screen shows the Microsoft Teams 'Welcome to Microsoft Teams!' interface. At the bottom of the device screen, there is a red box highlighting the activation code 'GQP7NF86U'.

But we will need some setup to get to this scenario.

3.6.1 Setup Steps

1 - Factory reset the device.

Make use of one the guides on how to run an xCommand:

- Using xAPI commands on Control Hub
- Using xAPI commands on Local Device Controls webpage

An run the following xCommand to factory reset the device:

```
xCommand SystemUnit FactoryReset Confirm: yes
```

This process might take a few minutes.

2 - Get an activation code from Control Hub

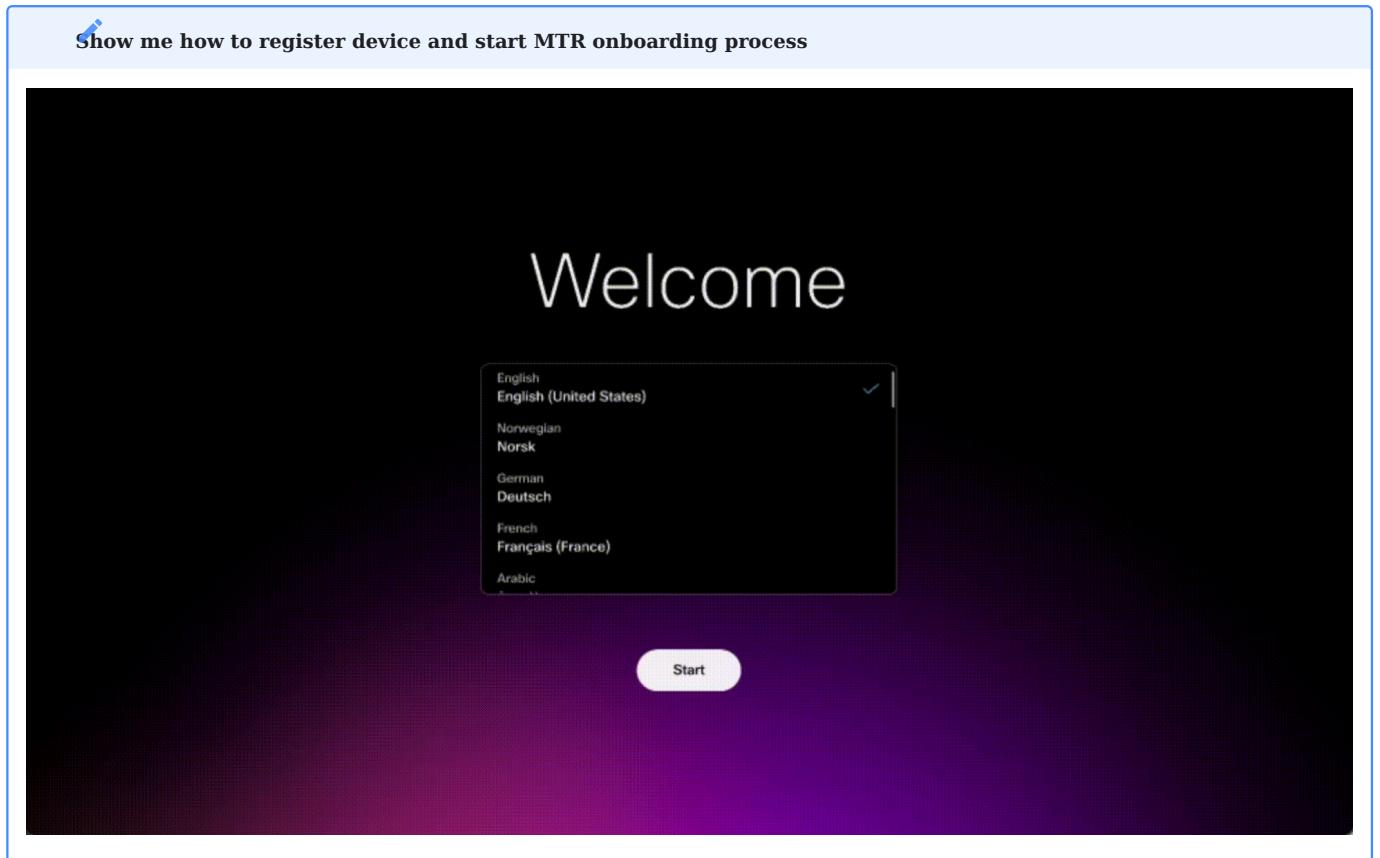
In Control Hub from the Devices page click Add Device -> Shared Usage -> Next -> New Workspace. Here you can give a name for the workspace that you will use to find the device later. Click Next -> Cisco Room and Desk Devices -> Next (there is no need to change anything). Click on Add Device to get the activation code. That is the code you will use on the device.

The screenshot shows the 'Devices' section of the webex Control Hub. On the left, there's a sidebar with various navigation options like Overview, Art Center, and Devices (which is currently selected). The main area has a search bar at the top right. Below it, there's a summary card showing '1 device'. A large button labeled 'Add device' is visible. Underneath, there are filters for Online (0), Expired (0), Offline: maintenance (0), Offline (1), Issues (0), and Offline: deep sleep (0). A note says 'Select one or more devices for bulk actions'. The main table lists one device: 'Rooms & Desks' (Cisco Desk Pro) is shown as 'Offline' with a Microsoft Teams icon. It also indicates it belongs to 'Desk 1'.

We will use the activation code soon on the device, so make sure to save it or have it available to you during step 3.

3 - Add the activation code to the device during the MTR onboarding process.

Now that you have the activation code you can input that on the device manually. After the factory reset the device will be on the welcome screen. From here choose all the default options until you see a screen with "Cisco RoomOS Experience" and "Microsoft Teams Experience". Choose Microsoft, then add the activation code. Press "Continue" and then begin installation. This process will take several minutes. You can move on to the next



4 - Start a Remote Access Session

- Go to Control Hub and find the device you registered in step 2.
- Now you are ready to start a remote access session.

5 - Verify what is the MTR Code on screen

- If step 3 is still not over, the MTR instalation is still in progress. You might need to wait a few more minutes.
- You should be able to see the MTR code on screen. From this point on as an admin you should be able to finish the registration process on the microsoft login webpage but we will not cover that on this course.

For a full guide on how to register MTR devices check the documentation on MTR OnBoarding. The documentation also describes the scenario of devices already registered to Control Hub being registered to MTR.