LABCLS-1402

Troubleshoot RoomOS video devices on Control Hub with Remote Access

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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 can be used as a reference, please contact your Cisco representative or a Cisco partner for design-related questions. 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 you 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
- Resolve issues remotely
- Verify customizations remotely
- Mitigate 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 go to Control Hub and sign in with the email and password provided to you 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 cover in this lab:

- **HELLO REMOTE ACCESS**
- **SCENARIO 1 - LANGUAGE**
- **SCENARIO 2 - CAMERA**
- **SCENARIO 3 - CUSTOMIZATIONS**
- **SCENARIO 4 - CALL**
- **SCENARIO 5 - MTR ONBOARDING**
- **SCENARIO 6 - ROOMOS ONBOARDING:**

1.1.6 Let’s get started

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

2. Guides

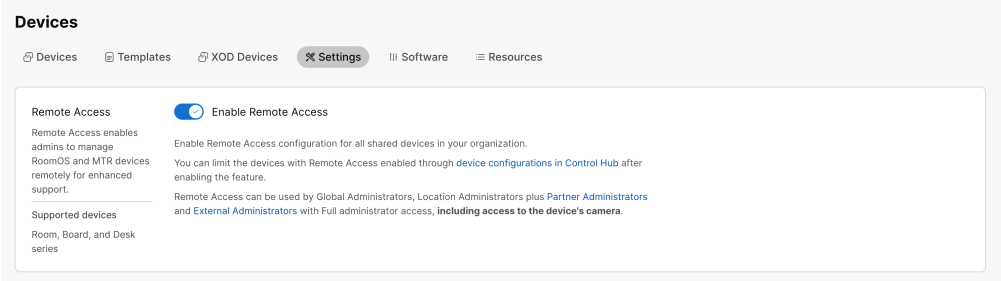
2.1 Guides

2.1.1 Log in to Control Hub

To log in to Control Hub navigate to admin.webex.com and log in with the email and password provided to 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.

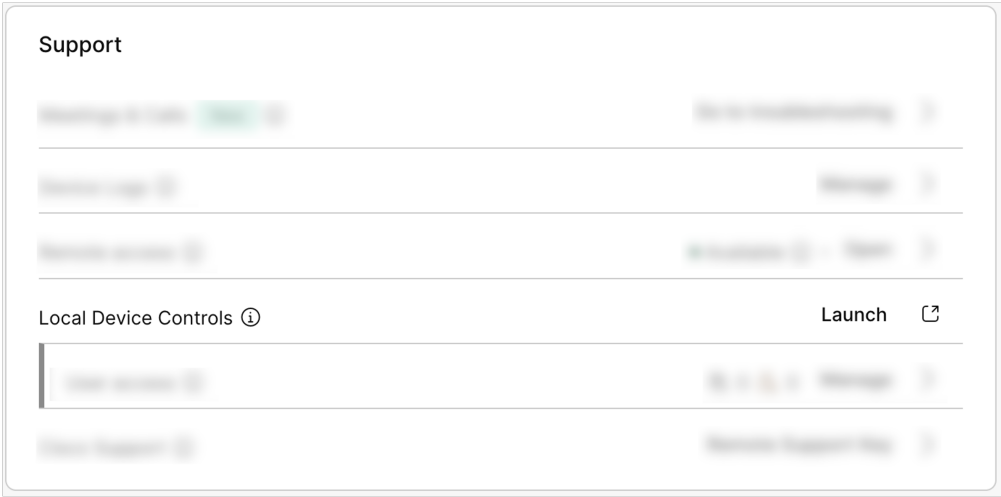
In case you want to activate it directly on a device using the xAPI the public xConfiguration that activates Remote Access is:

xConfiguration RemoteAccess Mode: On/Off

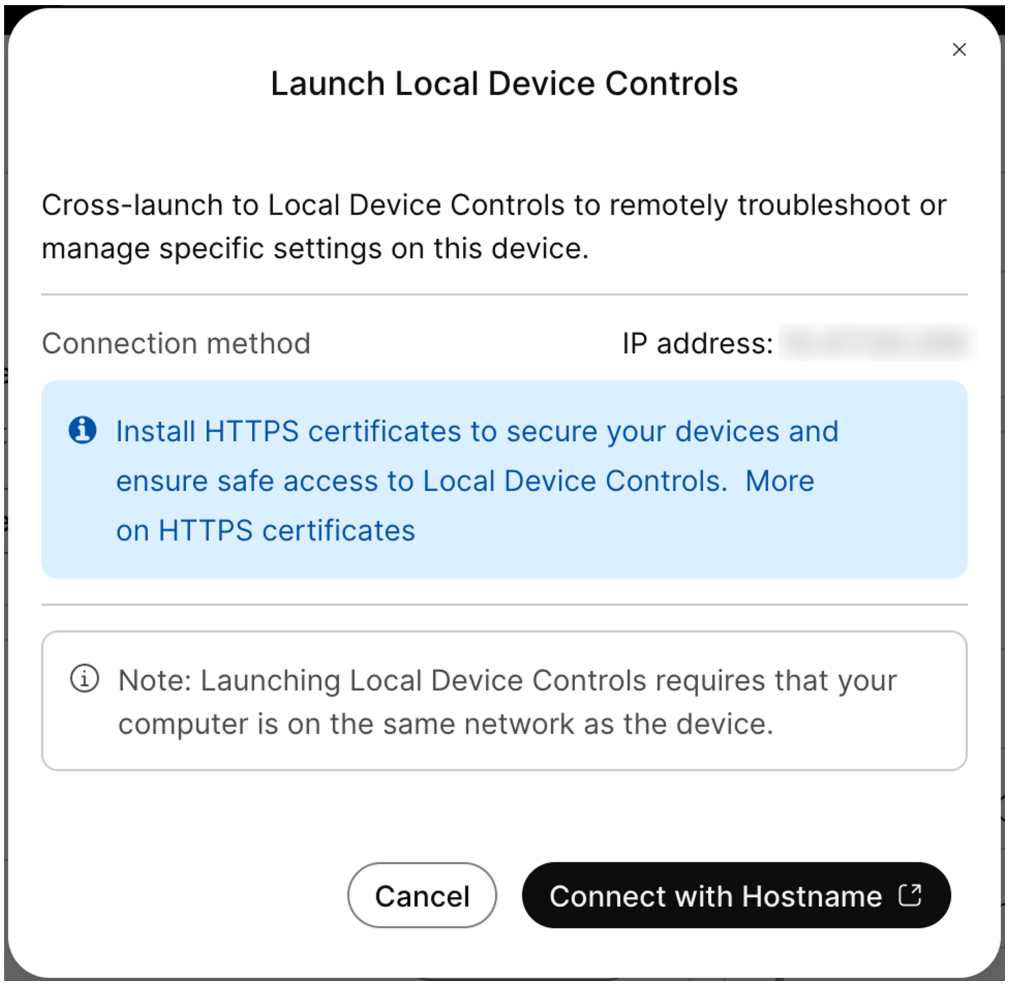
2.1.3 Access Local Device Controls from Control Hub

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's home screen. Once you are on 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 on the device.



If prompted, accept the risks

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 xCommands and xConfigurations 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. Useful in the call scenario where we will start 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 *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

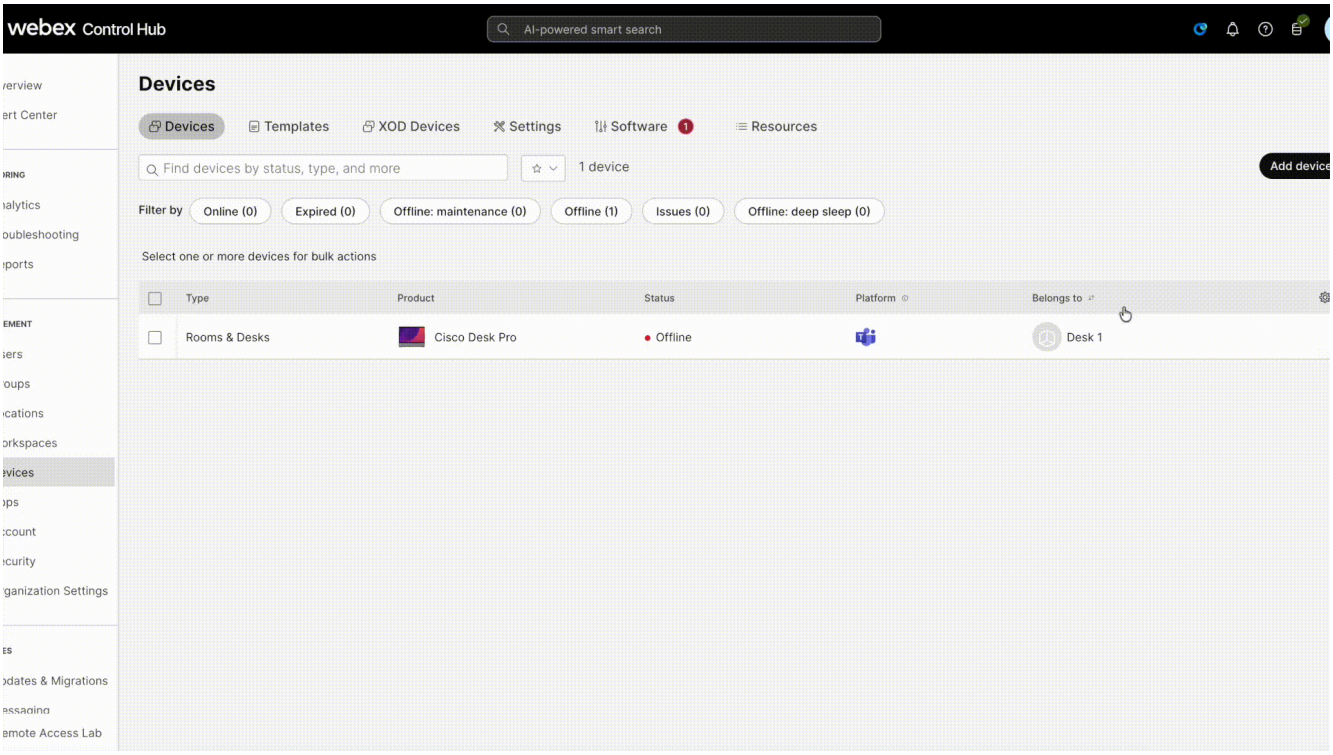
- To use Local Device Controls you need to be on the same network as the device.
- To log in to the Local Device Controls follow the instructions from Access Local Device Controls from Control Hub. If you have a local user registered on the Local Device Controls you can also log in to Local Device Controls 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 set any name for the workspace, then 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 activation code is what you'll enter on the device.

Show me how to get the activation code in CH



3. Scenarios

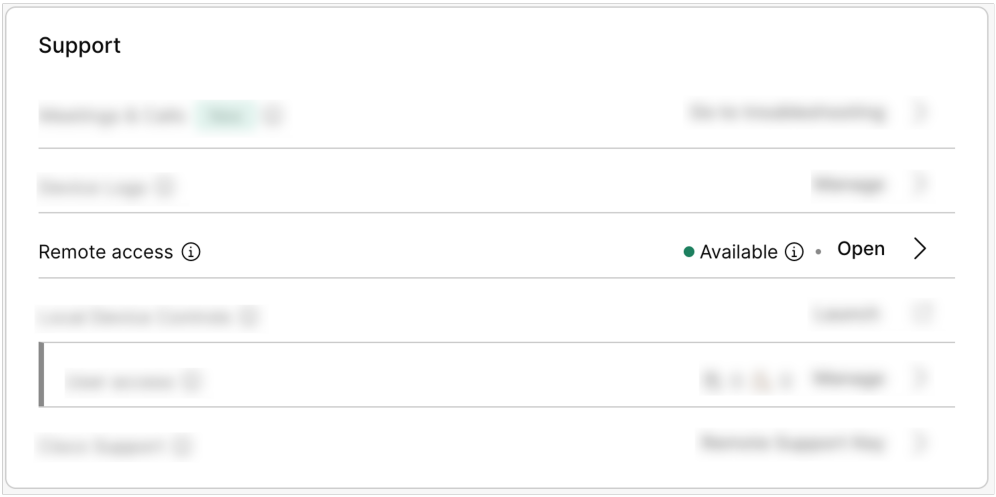
3.1 Hello Remote Access

3.1.1 Your first remote access session

To get started let’s 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 for 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.

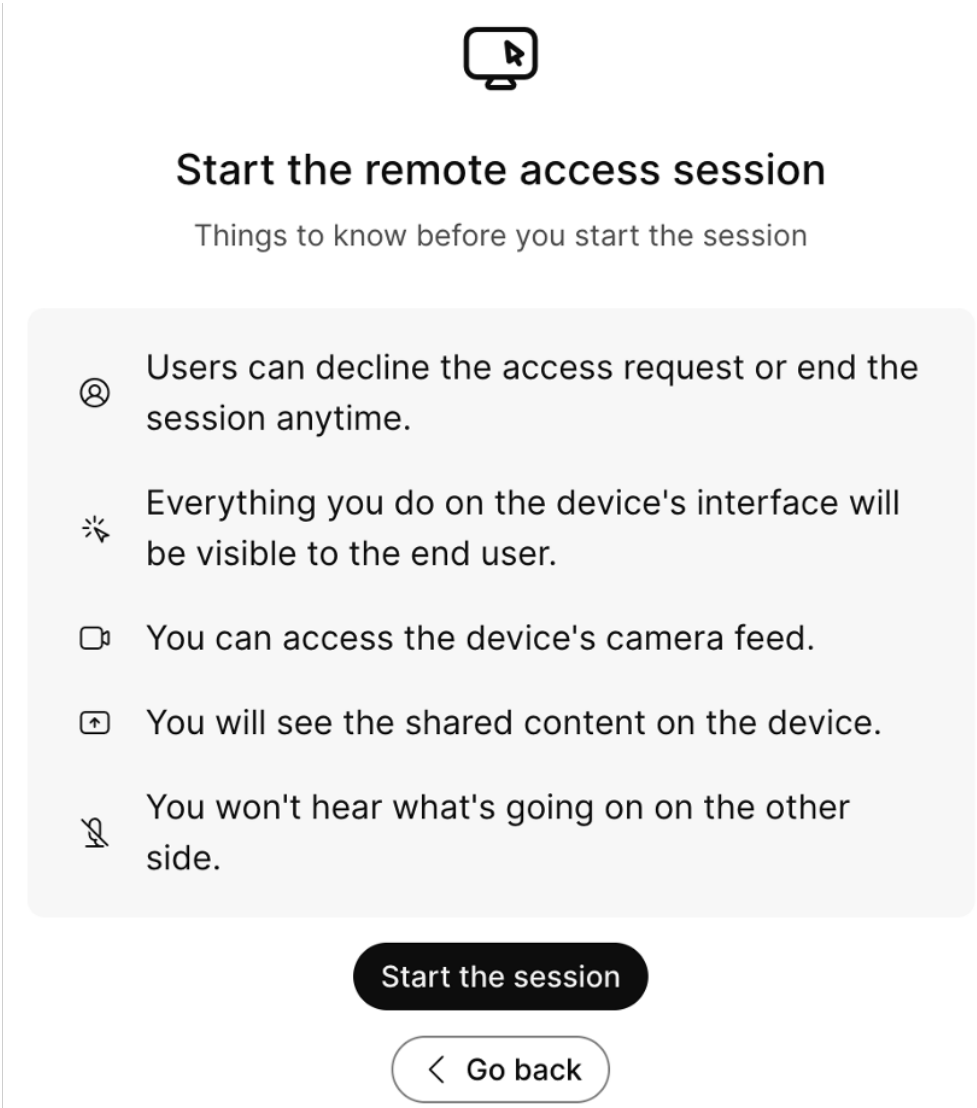
Once that is done log in to Control Hub, on the devices tab search for your device and open it. You will open the device's page in control hub where you have a lot of information and extensive control over the device. What interests us is the Remote Access feature in the support card as seen in the image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



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

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

The page also shows an overview of the capabilities of the feature and an reminds you of a few things before starting the session:



Once you click "Start the session" the device will display 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! Let’s go to Scenario 1 - Language.

3.2 Scenario 1 - Language

Let’s warm up with a simple scenario.

3.2.1 Problem

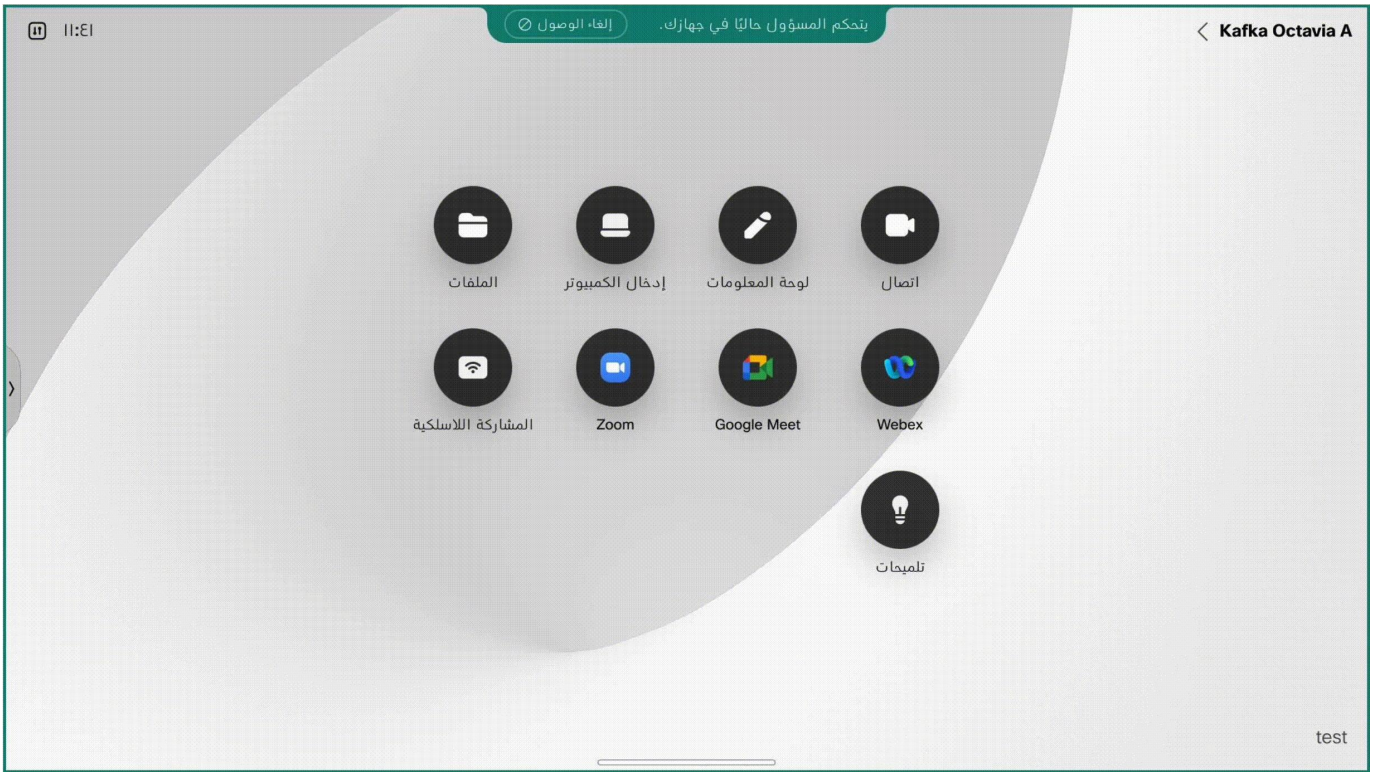
In this scenario the end user is reporting that they are not able to understand the UI at all as its in a unfamiliar language to the user and the buttons seem to be on the opposite side, not where they are expected to be. In this case the language is an Right-to-Left (RTL) language that was previously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

As an admin it might be difficult to explain to the user how to change the language in the UI on RTL for an unexperienced user. You will fix this 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 provide 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 swipe right from the left side of the screen.
- 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 it visually and assure the user the issue is fixed. No need for a trip to the meeting room in question.
- You have now solved an issue for your customer with minimal effort and without being physically present in the room.

Show me how to change the Language

Let’s move on to the next scenario Scenario 2 - Camera.

3.3 Scenario 2 - Camera

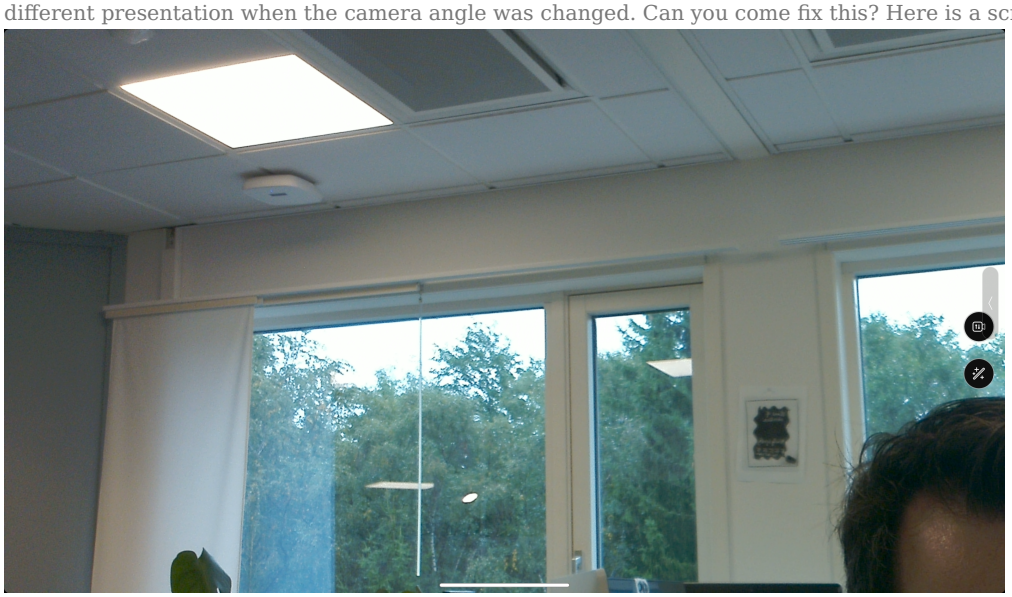
3.3.1 Problem

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

Heading to the location of the endpoint could be costly 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 you'll need to start a Remote Access session, open the device settings, and adjust 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 to a position where it frames the user in the room. Here you can also have a visual confirmation that the camera is pointing at a reasonable place.

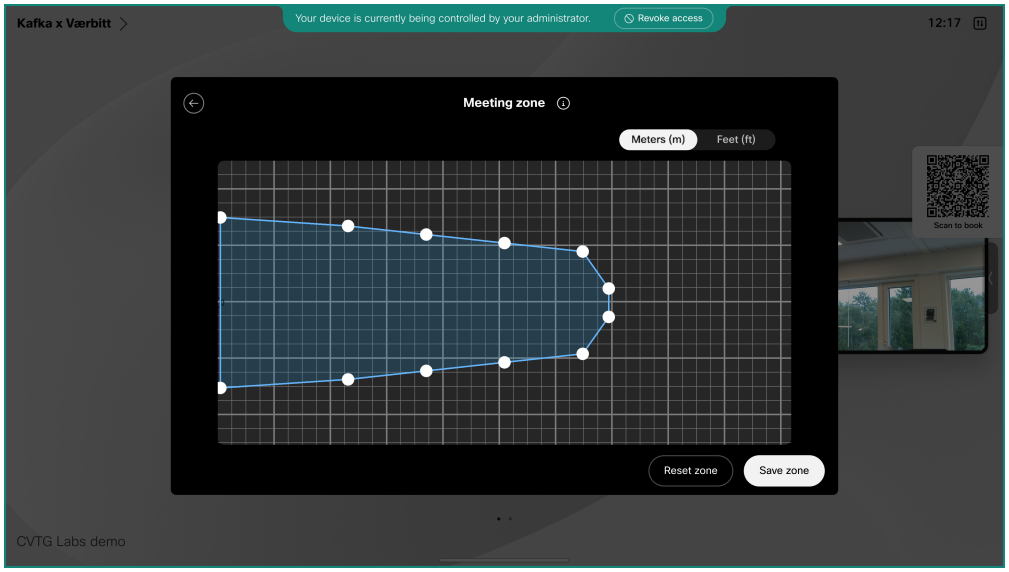
Another option (not using Remote Access) is to to activate speaker tracker config *(xconfiguration Cameras SpeakerTrack Mode: Auto)* so the end user can choose between Dynamic and Manual camera mode. We can skip that.

There are additional things you could do here such as apply different backgrounds or blur the background, or set up Meeting Zone to prevent from possible issues in the future.

Setting up meeting zones

- An additional way to improve the end user experience is to 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 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 have now 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 Webview Integration

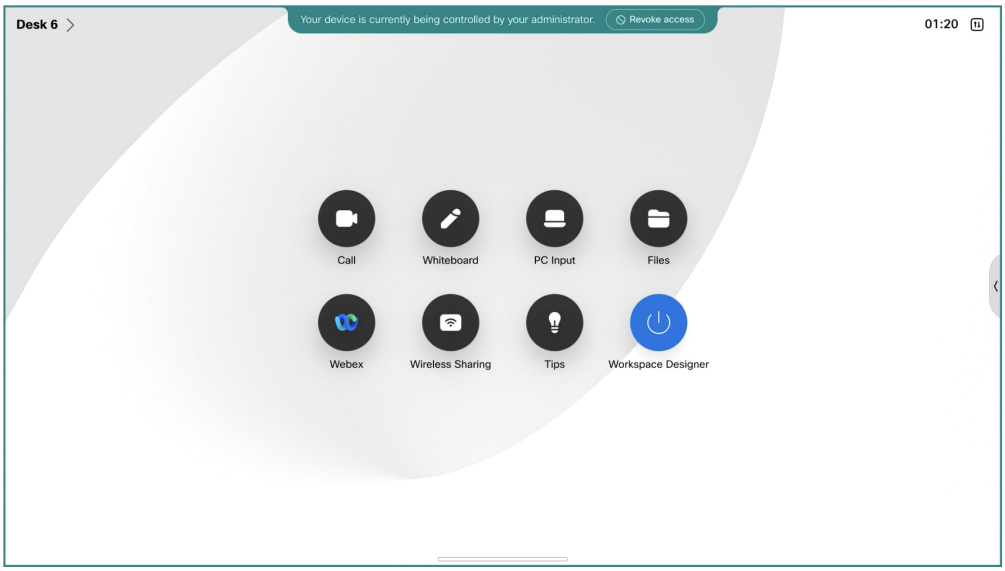
In this scenario you are an experienced integrator and you have deployed some customizations with UI extensions and macros. It's called *Workspace Designer* and opens a webview with Workspace Designer url.

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 opens a webview on the device with Workspace Designer web page, for that to work you also have installed a macro called *LaunchWorkspaceDesigner.js*. Your task here is to verify that the custom button added to the home screen does what it's designed to do.

As an integrator you want to 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 Workspace Designer is not working.

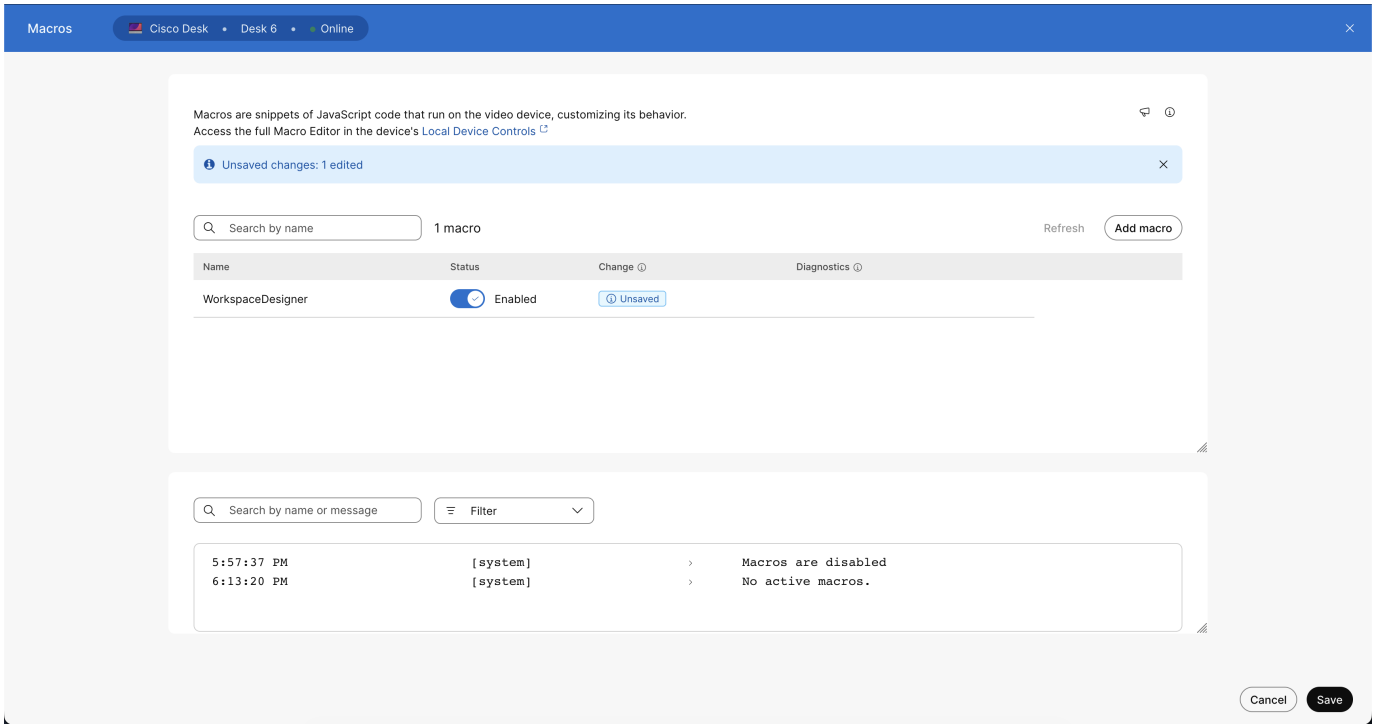
Your goal is to verify that after clicking on the Workspace Designer button the user will reach the Workspace Designer webpage opening on the device as a webview.

3.4.3 Your task

In this scenario you want to start a Remote Access session and verify if your integration is working. You will see that it's 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 Workspace Designer macro to get the correct behavior.

Here is the Macros page in Control Hub where you should ensure the LaunchWorkspaceDesigner.js macro is toggled on in Control Hub → Macros tab, then click Save:



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 webview 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 Device Controls you can install macros from the public repository (please check the disclaimer section before using any macro from the public repository on you deployed devices).

Let’s 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. Since Remote Access during a call is not supported, we need to use other Webex tools to continue providing support.

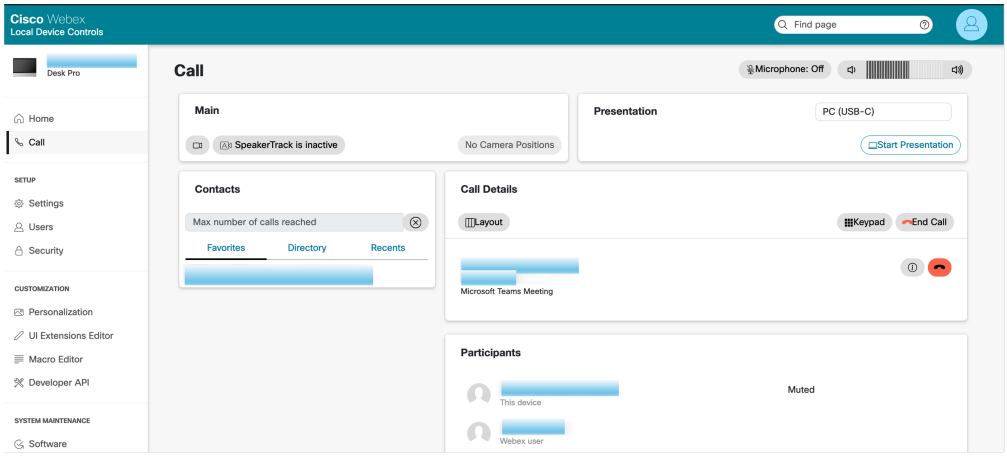
3.5.3 Your task

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 provide support for the call: (1) use the xAPI commands or (2)log in to Local Device Control and use the Call tab. The recommended option is using the call tab on Local Device Control.

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 device's home screen, then press Start a new meeting.
3. You will notice the Remote Access session will be closed. To continue to provide 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 tested 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. The interface should look something like this:



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

You can also 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 is provided 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 available options for controlling the call on a device without Remote Access in this scenario. Using the Call tab on Local Device Controls is the best available option for now.

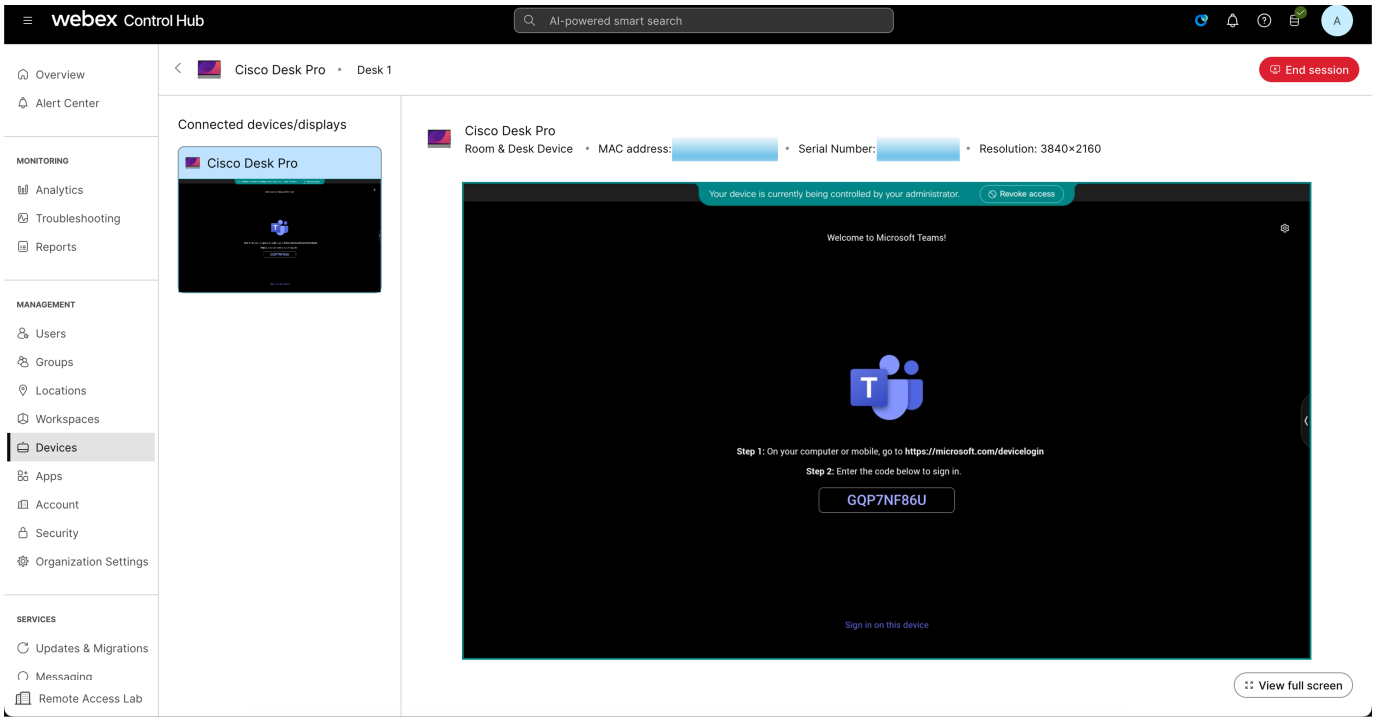
Let’s move on to our next scenario, where we will not use the devices in our lab. The instructor will go over scenario 5 with you. You can continue on Scenario 6.

3.6 Scenario 5 - MTR onboarding

Not a hands-on scenario

We will not go over this scenario on the devices in our lab. The devices here are Cisco Desks and do not support MTR. We will go over this scenario together.

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 view 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:



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 of the guides on how to run an xCommand:

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

Then run the following xCommand to factory reset the device:

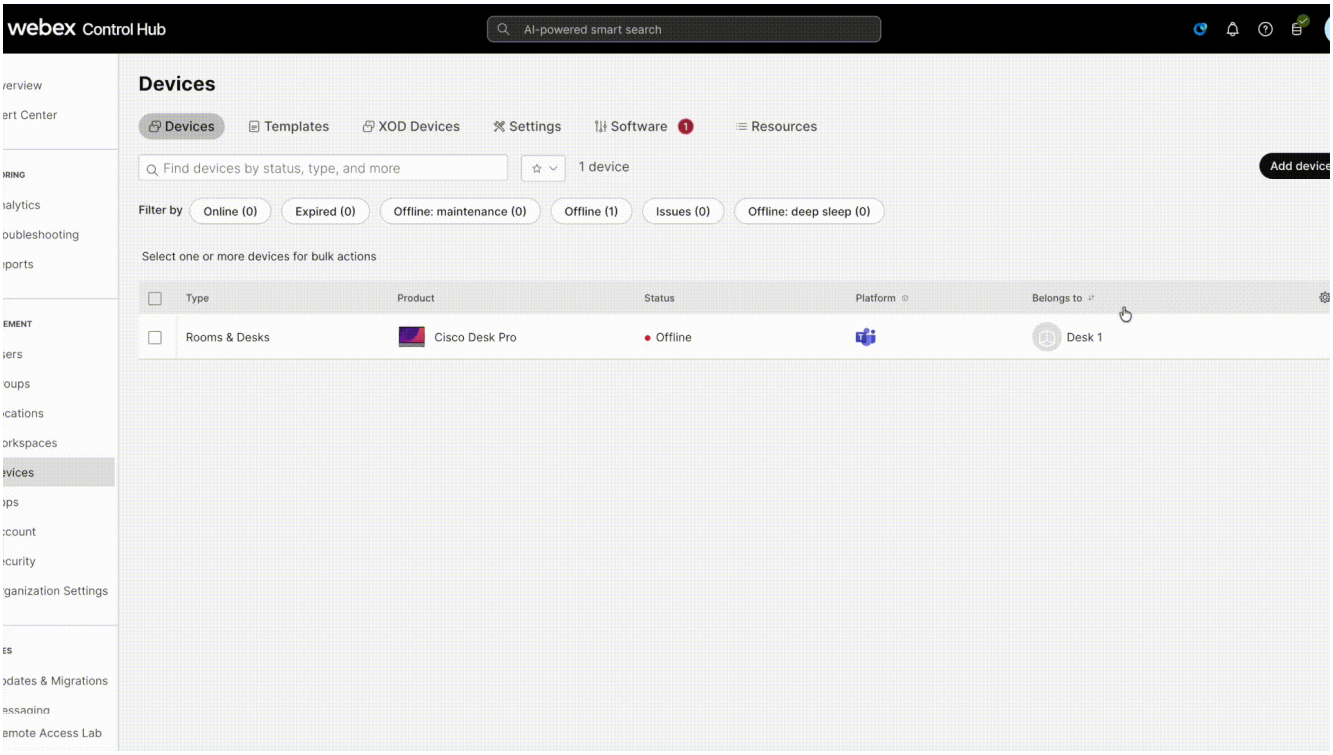
```
xCommand SystemUnit FactoryReset Confirm: yes
```

This process might take a few minutes.

2 - Get an activation code from Control Hub

In Control Hub, got to the Devices page click Add Device -> Shared Usage -> Next -> New Workspace. Here, you can set 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 enter on the device.

Show me how to get the activation code in CH

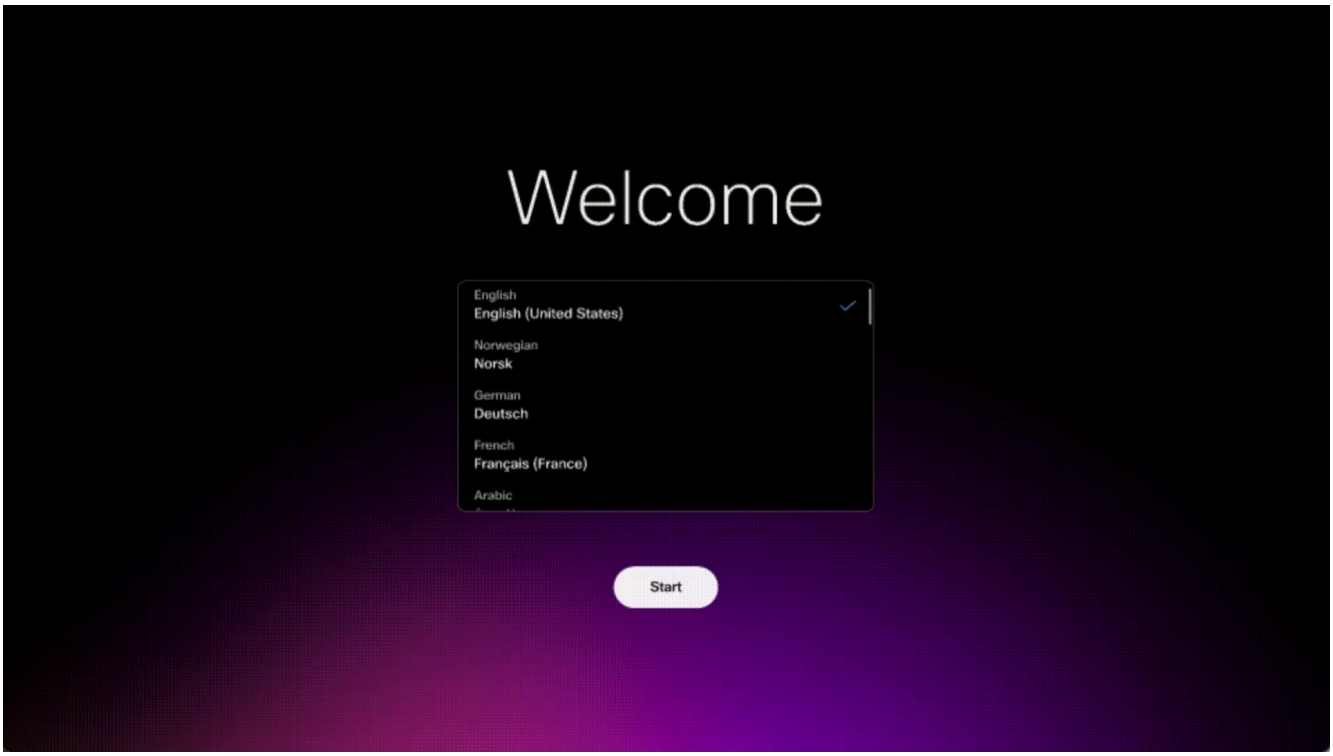


We will enter the activation code soon on the device, so make sure to save it or have it available to you during step 3.

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

Now that you have the activation code, enter it manually 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". Select Microsoft, then enter the activation code, press "Continue" and then begin installation. This process will take several minutes.

Show me how to register device and start MTR onboarding process



4 - Start a Remote Access Session

- Go to Control Hub and find the device you just registered with the workspace you created 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 installation 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.

Our last scenario is Scenario 6 - RoomOS onboarding.

3.7 Scenario 6 - RoomOS onboarding

In this scenario, you will be an admin that wants to register a RoomOS device to our org so we can use Remote Access for future troubleshooting.

Here is the overview of what you need to do in this scenario:

- Factory reset your device.
- Create an activation code in CH.
- Register the device to Control Hub as a RoomOS device.
- Test Remote Access from Local Device Controls.
- Open a whiteboard and play around with mouse and keyboard controls. You can write a message about the training if you want or show off your drawing skills.
- Now do the same from Control Hub, and verify the differences. How does the latency differ?
- You can also steal a session from you classmates to see how that interaction between two admins works. Just give them a heads up.

You can try to finish this scenario on your own or continue following this guide.

3.7.1 Setup Steps

We will need some setup to get to this scenario.

1 - Factory reset the device.

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

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

Then run the following xCommand to factory reset the device:

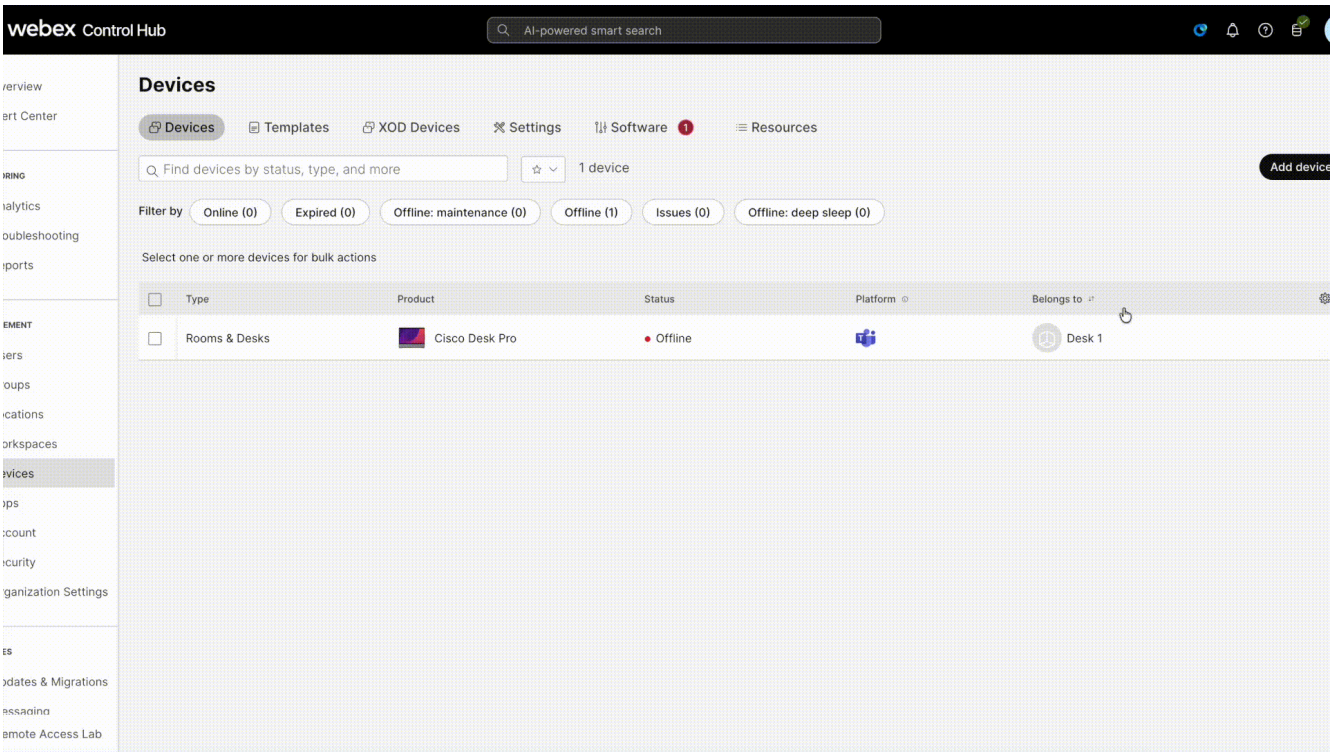
```
xCommand SystemUnit FactoryReset Confirm: Yes
```

This process might take a few minutes.

2 - Get an activation code from Control Hub

In Control Hub, got to the Devices page click Add Device -> Shared Usage -> Next -> New Workspace. Here you can set 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 enter on the device.

Show me how to get the activation code in CH



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 onboarding process.

Now that you have the activation code, you can enter it 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", continue and add the activation code. Press "Continue" and the device should register in a few minutes.

4 - Start a Remote Access Session

- Go to Control Hub and find the device you just registered with the workspace you created in step 2.
- Now you are ready to start a Remote Access session.

5 - Test out different scenarios.

- Open a whiteboard and try to draw durning a Remote Access session from Control Hub, then do the same from Local Device Controls.
- Take over a session from your colleague and observe how the interaction between two admins works.

If you manage to go through all the steps you have finished our training, well done!

But wait a minute

During this scenario, we still needed to be in the room to enter the activation code on the device. In-room presence was still needed. Wait for the instructor to finish the course to hear some news on that topic.

You have finished the training! The instructor will soon wrap up the course.