



Product Manual

Crestron® Control App for Zoom Rooms® Software

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Overview

The Crestron® Control App for Zoom Rooms® Software allows custom user interfaces to be added to the Zoom Rooms controller application using <u>Crestron HTML5 User Interface</u> and <u>Crestron Construct™</u> technologies. The app enables custom control logic and third-party device support for the Zoom Rooms controller application, providing a tailored Zoom Rooms user experience that fits the specific needs of an enterprise.

The Crestron Control App for Zoom Rooms is compatible with supported <u>Crestron Flex for Zoom Rooms solutions</u> when paired with a compatible 3-Series®, <u>4-Series®</u> or <u>Crestron Virtual Control (VC-4)</u> control system^{1,2,4}. The associated program is loaded to a program slot (3-Series and 4-Series control systems) or room (Crestron Virtual Control), allowing multiple Zoom Rooms systems to be hosted on a single control system³. The app is also compatible with .AV Framework™ software.

The following Zoom Rooms controllers have been verified for use with the app by Crestron:

- Apple® iPad® device⁴
- Crestron Mercury® mini conference systems
- Crestron® TS-770 and TS-1070 series touch screens
- Crestron TSW-770 and TSW-1070 series touch screens
- Crestron TST-1080 touch screen
- Logitech® Tap IP touch screen
- Neat Pad® touch screen
- Poly® TC8 touch screen
- Poly TC10 touch screen

The following Zoom Rooms controllers have been verified for use when operating in a Windows® OS attached configuration:

- Crestron Mercury® conference systems
- Crestron Mercury X conference systems
- Crestron TSW-1060 touch screen
- Logitech® Tap touch screen

NOTE: Additional Zooms Rooms controllers are supported using the custom resolution feature in the Crestron Construct IDE.

The app is available in the Zoom® App Marketplace and must be deployed via the Zoom Portal. For more information, refer to Deployment on page 4 and <u>Crestron Control for Zoom Rooms Software Online</u> Help.

Notes:

1. Refer to Specifications for supported Crestron® control systems and Zoom Rooms® system components. The control system must be connected to the internet to deploy and run the app.

- 2. The DMPS3-4K-50, DMPS3-4K-150-C, MC3, and TPCS-4SM control systems are not compatible with the Crestron Control App for Zoom Rooms.
- 3. Certain 4-Series® control systems ship with one program slot enabled by default. Up to 10 simultaneous programs can be run on these control systems by enabling Modular Programming Architecture (MPA), which requires the purchase of one SW-RMC3-10PROG license. Only one Crestron Control App for Zoom Rooms program can be run on a 3-Series® control system regardless of its MPA support.
- 4. Apple® iPad® devices running as Zoom Rooms controllers are supported on 4-Series control systems only.

Specifications

Refer to the following product specifications for the Crestron® Control App for Zoom Rooms® Software.

Product Specifications

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Minimum Requirements

Crestron® Control System 3-Series® control system, firmware version 1.8001.0251 or greater2;

4-Series® control system, firmware version 2.8004.00042 or greater4;

Crestron Virtual Control (VC-4), software version 4.0004.00069 or greater

Zoom Rooms® System Software version 5.16.5 or higher;

TS/TSW-1070 series, TST-1080, or Crestron Flex Mini Tabletop conference device;

Compatible with select third-party Zoom Rooms controllers

Crestron HTML5 User

Interface

SDK version 2.7 or higher

Embedded ZRC Web

Browser

Chromium version 98 or higher

.AV Framework™

Software

Software version 7.00 or higher

Notes:

- 1. Refer to Specifications for supported Crestron® control systems and Zoom Rooms® system components. The control system must be connected to the internet to deploy and run the app.
- 2. The DMPS3-4K-50, DMPS3-4K-150-C, MC3, and TPCS-4SM control systems are not compatible with the Crestron Control App for Zoom Rooms.
- 3. Certain 4-Series® control systems ship with one program slot enabled by default. Up to 10 simultaneous programs can be run on these control systems by enabling Modular Programming Architecture (MPA), which requires the purchase of one SW-RMC3-10PROG license. Only one Crestron Control App for Zoom Rooms program can be run on a 3-Series® control system regardless of its MPA support.
- 4. Apple® iPad® devices running as Zoom Rooms controllers are supported on 4-Series control systems only.

Deployment

Use the following procedures to deploy Crestron® control for a Zoom Rooms® software solution.

NOTE: Crestron recommends turning off (or not using) the page flip project when the Zoom Rooms app is used with Crestron control.

Prerequisites

Ensure the following prerequisites are met prior to deployment.

- Crestron control system with minimum firmware version
 - o 3-Series® control system: 1.8001.0251
 - The DMPS3-4K-50, DMPS3-4K-150-C, MC3, and TPCS-4SM are not compatible with the Crestron Control App for Zoom Rooms.
 - Apple® iPad® device support future release.
 - 4-Series® control system: 2.8003.00059.02
 - Apple iPad device requires 4-Series® control system firmware 2.8005.0007 or greater.
 - ° Crestron Virtual Control (VC-4): 4.0004.00069

NOTE: The control system must be connected to the internet to deploy and run the app.

- Crestron Flex (or third-party) Zoom Rooms system and Zoom Room Controller (ZRC)
 - Software version 5.16.5 or higher
 - $^{\circ}~$ TS/TSW-1070 series, TST-1080, or Crestron Flex Mini Tabletop conference device to run the ZRC
- Crestron HTML5 User Interface (CH5)
 - SDK version 2.7 or higher
- Embedded ZRC Web Browser
 - Chromium version 98 or higher
- .AV Framework™ Software (optional)
 - Software version 7.00 or higher

- Apple iPad device (optional)
 - 4-Series control system firmware 2.8005.0007 or greater.
 - Supported on 4-Series control systems only.
 - CA certificates must be installed onto the control system and iPad device. Refer to Connect to the Control System with a CA Certificate on page 15 and Enable the App on an iPad Device (4-Series Only) on page 16.
 - o 3-Series support future release.

Configure the Crestron Control System

A WebSocket token must be created to allow the Crestron Control App for Zoom Rooms to authenticate against the control system that is hosting the custom Crestron HTML5 User Interface (CH5) project. The process for creating a WebSocket token differs based on the control system type.

Control System Authentication Parameters

Prior to creating a WebSocket token, the control system authentication parameters must be configured as follows to support the Crestron Control App for Zoom Rooms connection. Issue the auth, ssl, and userpageauth commands in an SSH client connected to the control system to confirm or change the corresponding authentication parameter.

Parameter	3-Series	4-Series	VC-4
auth	Any setting	Always enabled	N/A
ssl	Enabled	Always enabled	Enabled
userpageauth	Disabled	Disabled	Disabled

Create a WebSocket Token for 3-Series and 4-Series Control Systems

To create the WebSocket token for 3-Series and 4-Series control systems:

- 1. Open an SSH client for the control system over its IP address or host name. The **Text Console** tool in Crestron Toolbox™ software can also be used.
- 2. Issue the websockettoken generate command to generate a WebSocket token.

```
MC4>websockettoken ?|
WEBSOCKETTOKEN [DELETE | GENERATE]
DELETE - Deletes the existing authorization token
GENERATE - Generate new authorization token if not yet created
No Parameter - Display current authorization if already created
MC4>
MC4>
MC4>websockettoken
eyJhbGci0iJIUzI1NiIsInR5cCI6IkpXVCIsIlNvdXJjZSI6IkNvbnRyb2wgU3lzdGVtIn0.eyJleHAi0jE20DUwNDE5MTUsInVzZXJuYW1lIjoiT2ZmbGl
uZVRva2VuIiwiT3B0aW9uYWwi0iIyMDExOTc5MjQxIn0.gypi7bWlkr4iFieaJsf13wJZQx7pEv9YDcUtz1IChzM
```

3. Copy the provided token to a location on the local computer that can be later accessed.

4. **(4-Series control systems only)** Issue the following console commands to configure the JWT (JSON Web Token) public key for the control system connection.

hostname <hostname>
domain <domain>
JWTPUBLICKEYSOURCE add crestron-cs https://<hostname>.<domain>
JWTPUBLICKEYSOURCE add crestron-webserver HTTPS://APP.ZRC.CRESTRON.IO
JWTCSPALLOWURLSTATE on

NOTE: The IP address for the control system and its domain can be used in place of the reported <hostname> and <domain> values. This is true only for the control system URL and not for the Crestron web server URL.

To view the current JWT public key information for the control system, issue the JWTPUBLICKEYSTATUS command.

MC4>jwtpublickeystatus

Source: CRESTRON-CS

Url: HTTPS://HOSTNAME.DOMAIN

State: Success

LastSynchedTime: Wed May 31 14:19:33 2023 Source: CRESTRON-WEBSERVER

Url: HTTPS://APP.ZRC.CRESTRON.IO

State: In Progress

LastSynchedTime:

Configure the Referrer Policy (4-Series Only)

The referrer policy controls how much referrer information should be included with any requests to the control system web server. The referrer policy must be set in the response header.

To set the referrer policy, issue the following command:

webserver referrer-policy strict-origin-when-cross-origin

The control system must be restarted for the referrer policy changes to take effect.

To view the current referrer policy, issue the webserver referrer-policy command.

MC4>webserver referrer-policy current referer policy : strict-origin-when-cross-origin

Create a WebSocket Token for Crestron Virtual Control

To create the WebSocket token for Crestron Virtual Control:

NOTE: If using Crestron Virtual Control software that is installed on a Linux® server, Crestron Virtual Control must first be hardened as described in the <u>Crestron Virtual Control Server Software Security Reference Guide</u>. Additionally, a root certificate must be applied to the chosen Zoom Rooms Controller as a standalone device. Refer to the documentation for your Zoom Rooms Controller device for more instructions on loading certificates. These prerequisites are not required for the VC-4-PC-3.

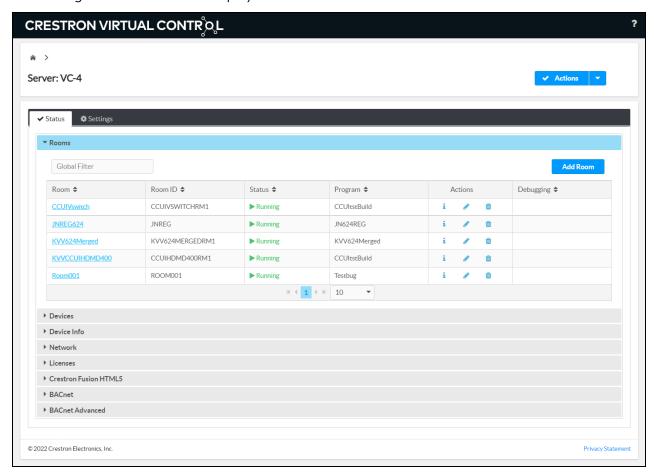
- 1. Log into an account with sudo privileges on the Linux platform where the Crestron Virtual Control package is installed.
- 2. Open a new terminal window.
- 3. Issue the following command to allow the CH5 project to connect to Crestron Virtual Control, where **[VirtualControlHome]** is the home directory set during installation.

 $sudo \ ln \ -s \ [VirtualControlHome]/conf/crestron_10.conf \ /etc/httpd/conf.modules.d/crestron_10.conf$

4. Issue the following command to restart the HTTPD service:

sudo systemctl restart httpd

5. Enter http://[ServerURL]/VirtualControl/config/settings/ into a supported web browser, where [ServerURL] is the IP address or host name of the Linux platform. The Crestron Virtual Control web configuration interface is displayed.



6. Navigate to Settings > Tokens.



7. Select Add Token. The Add Token dialog box is displayed.



- 8. Enter the following information:
 - a. Enter a description for the token in the **Description** text field.
 - b. Fill the Read Only check box.
- 9. Select **Add**. A new token is generated and added to the **Tokens** table. This token must be accessible later in the deployment procedure.



Configure the Crestron Control App for Zoom Rooms

The following procedures are required for configuring the Crestron Control App for Zoom Rooms for use with a Crestron control system.

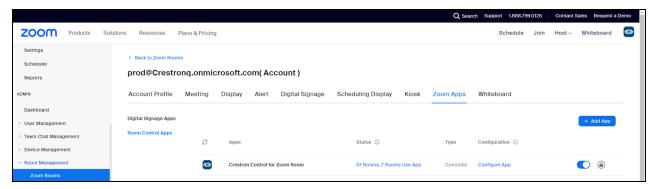
Add the App to a Zoom Account

1. Log in to the Zoom Portal as an owner or administrator.

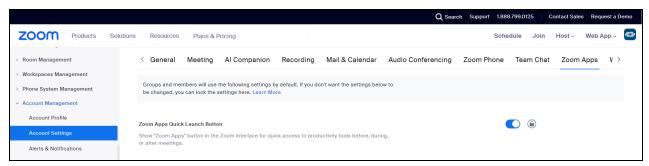
NOTE: The administrator account must have the **Marketplace** role and the appropriate **Edit** permissions required to add apps from the Zoom App Marketplace. For more information, refer to https://developers.zoom.us/docs/zoom-apps/guides/set-up-za-for-zrc/.

- 2. Navigate to Admin > Room Management > Zoom Rooms from the left navigation menu.
- 3. Select the **Account Settings** tab at the top of the interface.
- 4. Select the **Zoom Apps** tab.
- 5. Select Room Control Apps, and then select + Add App.
- 6. Add the Crestron Control App for Zoom Rooms from the Marketplace using the provided interface to authorize the app for the account.

7. Turn on the toggle next to the app once it has been added to enable it for the account.

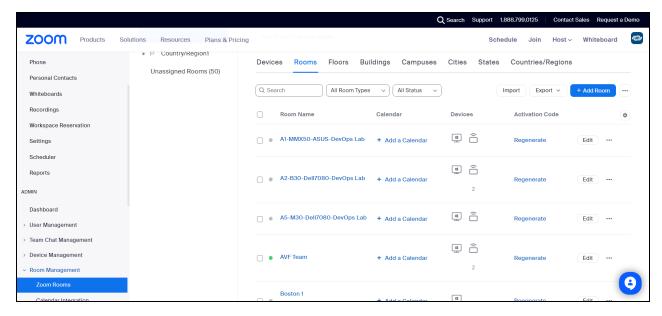


8. Navigate to **Account Management > Account Settings > Zoom Apps**, then turn on the **Zoom Apps Quick Launch Button** toggle.

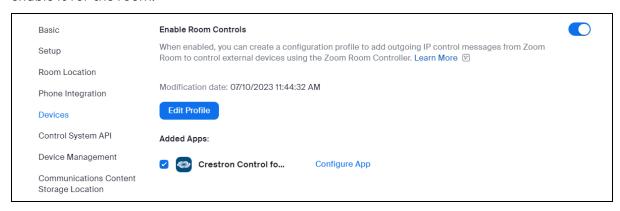


Enable the App for Each Zoom Room

- 1. In the Zoom Portal, navigate to **Admin > Room Management > Zoom Rooms** from the left navigation menu.
- 2. Select the **Rooms** tab.
- 3. Select the target Zoom Room from the provided list, or use the search function to locate a specific room.



- 4. Select Room Settings for the chosen room at the top of the interface.
- 5. Select the Rooms Profile tab.
- 6. Select **Devices** from the left navigation menu.
- 7. In the **Enable Room Controls** section, turn on the toggle to enable room controls for the Zoom Room.
- 8. In the **Added Apps** section, fill the check box next to the Crestron Control App for Zoom Rooms to enable it for the room.



- 9. Select **Configure App** next to the Crestron Control App for Zoom Rooms. The **Configure Application** dialog box is displayed.
- 10. Enter the following information:
 - Authorization: Select the Authorization Bearer Token radio button.
 - **Auth Token**: Copy the WebSocket token that was generated as described in Configure the Crestron Control System on page 5.
 - **URL**: Enter the URL of the control system that is hosting the CH5 project:

NOTE: The ipId parameter in the following syntax examples is case sensitive as must be entered exactly as written.

• For 3-Series and 4-Series control systems, use the following syntax:

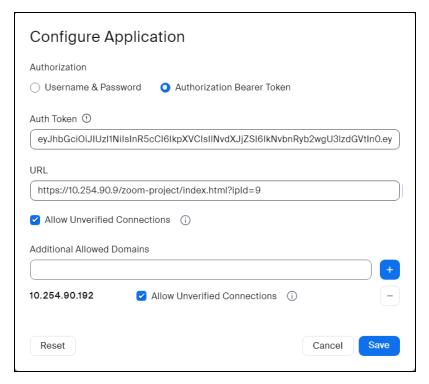
https://<cs-hostname-domain>/<ch5-proj-name>?ipId=<IPID>

o For Crestron Virtual Control, use the following syntax:

NOTE: The <Room ID> parameter can be obtained by navigating to the Status > Details page of the Crestron Virtual Control room that is running the CH5 project. For more information, refer to the Crestron Virtual Control Server Software Product Manual.

https://ccs-hostname-domain>/VirtualControl/MA/Rooms/<Room ID>/XPanel/index.html?ipId=<IPID>

Allow Unverified Connections: Fill the check box only if the control system connection will
not use a CA certificate. While the connection will still be encrypted over HTTPS/WSS, no
certificate validation will occur.



- 11. Select Save.
- 12. Repeat steps 4–11 for each Zoom Room that will use the Crestron Control App for Zoom Rooms.

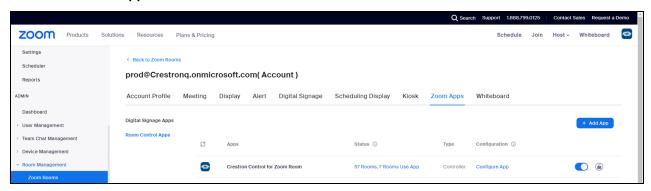
NOTE: To disable the Crestron Control App for Zoom Rooms for a specific room following deployment, navigate to the room as described in the procedure above and then turn off the **Enable Room Controls** toggle in the room settings.

Deploy Multiple Zoom Rooms

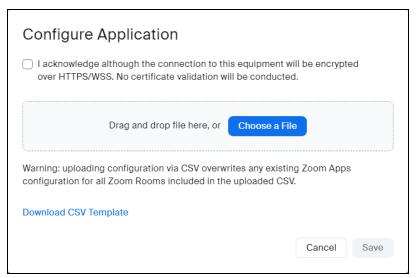
It is possible to deploy Crestron control on multiple Zoom Rooms at once via a CSV file.

- 1. Log in to the Zoom Portal.
- 2. Navigate to Admin > Room Management > Zoom Rooms from the left navigation menu.
- 3. Select the **Account Settings** tab at the top of the interface.

4. Select the **Zoom Apps** tab.



5. Select **Room Control Apps**, and then select **Configure App** next to the Crestron Control App for Zoom Rooms. The **Configure Application** dialog box is displayed.



- 6. Select Download CSV Template, and then open the template file on the local computer.
- 7. Populate the CSV template with the required information as described in the table below, and then save the file.
- 8. Drag the modified CSV template into the **Configure Application** dialog box, or select **Choose a File** to navigate to it on the local computer.
- 9. Once the file is uploaded, select Save.

CSV Template File Data for Crestron Control for Zoom Rooms App

Field	Information
Room Name	Enter the name of the target Zoom Room.
HTTP Auth Username	N/A (not used)
HTTP Auth Password	N/A (not used)
Token	Enter the WebSocket token that was generated as described in Configure the Crestron Control System on page 5.
URL	Enter the IP address or hostname of the control system.

Information
Enter True is using a CA certificate for the control system connection.
Enter False if not using a CA certificate for the control system connection.
Enter the IP address or hostname of the first control system domain.
Enter True is using a CA certificate for the second control system domain.
Enter False if not using a CA certificate for the second control system domain.
Enter the IP address or hostname of the second control system domain.

NOTE: The final two rows (**Support Unverified Connection** and **Additional Allowed Domain**) can be repeated as needed to add further allowed domains.

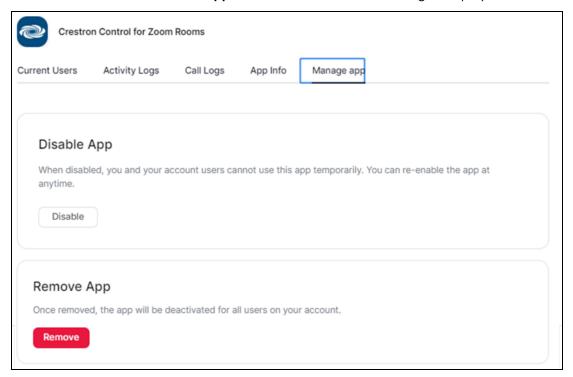
Remove the App from a Zoom Account

If required, the Crestron Control App for Zoom Rooms can be removed from your Zoom account.

To remove the app:

- 1. Log in to the Zoom Portal as an owner or administrator.
- 2. In the Zoom App Marketplace, navigate to **Manage > Admin App Management > Apps on Account** at the top right of the page.
- 3. Search for "Crestron Control App for Zoom Rooms".
- 4. Select the app from the search results, then select **Manage App**. Options for managing the app are displayed.

5. Select **Remove** in the **Remove App** section. A confirmation dialog is displayed.



6. Select **Remove** again to remove the app from your Zoom account.

Connect to the Control System with a CA Certificate

If using a CA certificate to connect the app to the control system:

NOTES:

- CA certificates are required when using an iPad device as a Zoom Rooms Controller with a 4-Series control system.
- The process of establishing a connection to Crestron Virtual Control with a CA certificate differs from 3-Series and 4-Series models. For more information, refer to the or the <u>Crestron</u> <u>Virtual Control Server Software Security Reference Guide</u>.
- 1. Issue the ipconfig /all console command to the control system to get the required control system information for certificate generation.
- 2. Generate the following files and load them to the control system as described in the <u>4-Series</u> Control Systems Product Manual.
 - request.csr
 - srv_key.pem
 - srv_cert.cer
 - rootCA_cert.cer
- 4. Issue the reboot command to restart the control system.

Enable the App on an iPad Device (4-Series Only)

To enable the Crestron Control for Zoom Rooms app on an Apple® iPad® device:

- 1. Download and install the **Zoom Rooms Controller** app from the App Store® app.
- 2. Install a CA certificate on the iPad device as described in Apple's documentation.
- 3. Turn on trust for the CA certificate on the iPad device as described in Apple's documentation.

NOTE: The CA certificate is not trusted automatically after it is installed. Trust for the certificate must be turned on manually.

For more information on using the Zoom Rooms with an iPad device, refer to Zoom's documentation.

Deploy the Zoom Rooms CH5 Project to the Control System

A Zoom Rooms CH5 project can be deployed to the control system once it is saved as a CH5 archive (.ch5z) file. The Zoom Rooms CH5 project requires the Zoom App library to be included in order for it to run (provided in CH5 version 2.7 or higher). For more information on deploying CH5 archives, refer to the Crestron HTML5 User Interface Developer Microsite.

- To deploy the Zoom Rooms CH5 project to a 3-Series control system, refer to the <u>3-Series®</u> Control Systems Reference Guide.
- To deploy the Zoom Rooms CH5 project to a 4-Series control system, refer to the <u>4-Series Control</u> Systems Product Manual.

NOTE: The project must be added as a Web Project using the Add Project dialog box.

• To deploy the Zoom Rooms CH5 project to Crestron Virtual Control, refer to the <u>Crestron Virtual</u> Control Server Software Product Manual.

NOTE: As a best practice, the room created within Crestron Virtual Control that is associated with the CH5 project should have the same name as the Zoom Room.

To deploy the Zoom Rooms CH5 project to an .AV Framework system, refer to the
 .AV Framework™ Software for 4-Series Control Systems Operations Guide or the .AV Framework

 Software for Crestron Virtual Control Software Operations Guide.

Resources

The following resources are provided for Crestron® Control App for Zoom Rooms® Software.

NOTE: You may need to provide your Crestron.com web account credentials when prompted to access some of the following resources.

Crestron Support and Training

- Crestron True Blue Support
- Crestron Resource Library
- Crestron Online Help (OLH)
- Crestron Training Institute (CTI) Portal

Programmer and Developer Resources

- help.crestron.com: Provides help files for Crestron programming tools such as SIMPL, SIMPL#, and Crestron Toolbox™ software
- <u>developer.crestron.com</u>: Provides developer documentation for Crestron APIs, SDKs, and other development tools

Related Documentation

- .AV Framework™ Software for 4-Series Control Systems Operations Guide
- .AV Framework™ Software for Crestron Virtual Control Software Operations Guide
- 3-Series® Control Systems Reference Guide
- 3-Series® Control Systems Security Reference Guide
- 4-Series® Control Systems Product Manual
- 4-Series® Control Systems Security Reference Guide
- Crestron Flex Unified Communications Solutions Product Manual
- Crestron® HTML5 User Interface Developer Microsite
- Crestron Virtual Control Server Software Product Manual
- Crestron Virtual Control Server Software Security Reference Guide

Support

For technical support when using Crestron® Control App for Zoom Rooms® Software, contact Crestron True Blue support via phone, email, or chat as described at www.crestron.com/Support.

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