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Product Manual

TSS-470E

3.5 in. Desk Scheduling Touch Screen

Crestron Electronics, Inc.

The original language version of this document is U.S. English.
All other languages are a translation of the original document.

Regulatory Model: M202138001

Contents

Overview

The Crestron® TSS-470E Desk Touch is a touch screen designed specifically for desk scheduling applications. The TSS-470E can be installed within a hoteling space to provide a clear indication of its availability and schedule. Room mode provides room scheduling functionality for ancillary spaces where shorter bookings are more common. The TSS-470E also integrates seamlessly with a variety of popular third-party scheduling applications.

This section provides the following information:

Features

This section provides the following information:

TSS-470E-B-T Features

The Crestron® TSS-470E-B-T touch screen is designed to enhance and simplify desk scheduling across an enterprise. The TSS-470E can be installed within a hoteling space to provide a clear indication of its availability and schedule. Room mode provides room scheduling functionality for ancillary spaces where shorter bookings are more common. The TSS-470E also integrates seamlessly with a variety of popular third-party scheduling applications.

The TSS-470E is an enterprise-grade device engineered to meet all the demands of a corporate office, conference center, or higher education environment. Its 3.5 in. (89 mm) capacitive display provides an intuitive user interface dedicated for scheduling hoteling spaces and viewing essential reservation details.

Key features include:

- Touch screen designed specifically for desk scheduling applications
- Room mode provides room scheduling functionality for ancillary spaces
- Integrates directly with various third-party scheduling apps
- 3.5 in. (89 mm) capacitive touch screen display
- Setup and scheduling via XiO Cloud® provisioning and management service
- Integrated light bar illuminates green, amber, or red to indicate desk availability with support for custom colors

- Powered via PoE or power pack (sold separately)
- Ethernet and Wi-Fi® network connectivity
- Enterprise-grade security and authentication
- Wall and surface, tabletop, or multisurface options available separately
- Black textured finish

Crestron Scheduling App

The native Crestron Scheduling App helps organizations to maximize productivity and manage usage for every hoteling space. Desk usage can be scheduled in advance using a computer that is connected to the scheduling calendar resource, or available desks can be booked on the spot for ad hoc usage. The desk schedule is displayed on the touch screen UI to prevent booking conflicts and to indicate when the desk is available. The Crestron Scheduling App can also be configured with custom settings for no shows, early reservation check-ins, and more.[1]

Running the Crestron Scheduling App, the TSS-470E integrates directly with the XiO Cloud® service and Office 365® software.

Room Scheduling Mode

The Crestron Scheduling App provides a room scheduling mode that is optimized for use in ancillary spaces, such as huddle rooms or phone booths, where shorter bookings are more common. Room mode provides similar functionality to desk scheduling mode, including integration with the XiO Cloud service and Office 365 software. A timeline view is provided on the touch screen UI to easily view the room availability for the day. Ad hoc bookings are scheduled to the next top or bottom of the hour, with the ability to extend the reservation in half hour increments.

Third-Party Scheduling Apps

The TSS-470E includes support for various third-party scheduling applications. New providers are made available via firmware updates. Whatever provider you choose, setup is as simple as connecting the touch screen to the network and choosing an app from XiO Cloud or the device's web configuration interface. The selected app downloads from the cloud and installs on the touch screen without any programming or control system required.[1,2,3]

XiO Cloud Service

The TSS-470E is compatible with the XiO Cloud service, which is an IoT (Internet of Things) based platform for remotely provisioning, monitoring, and managing Crestron devices across an enterprise or an entire client base. XiO Cloud is built on the Microsoft® Azure® software platform and utilizes Microsoft's industry leading Azure IoT Hub technology. XiO Cloud enables installers and IT managers to deploy and manage thousands of devices simultaneously. Unlike other virtual machine based cloud solutions, Azure services provide unlimited scalability to suit the ever growing needs of an enterprise. For more information, visit www.crestron.com/xiocloud.

Integrated Light Bar

The TSS-470E provides an integrated light bar that gives visual indication of a space's availability as part of a complete enterprise scheduling solution. The light bar illuminates bright green, amber, or red to indicate the space availability. The illumination color is controlled by the scheduling application, which runs on the TSS-470E and syncs with the scheduling calendar. For custom applications, the light bar can be configured to illuminate in almost any desired color. The light bar features tricolor RGB LEDs that allow for a full spectrum of colors by blending the red, green, and blue elements.

Power over Ethernet

Using PoE technology, the TSS-470E gets its operating power directly through a network cable. PoE (Power over Ethernet) eliminates the need for a local power supply or any dedicated power wiring. Crestron PoE switches offer a total networking solution with built-in PoE for multiple touch screens.[4]

For applications where PoE is not possible or desired, the TSS-470E can also be powered via a local 24VDC power supply (PW-2407WU).[4]

Wired and Wi-Fi Connectivity

An Ethernet LAN connection is all that is required to wire the TSS-470E, containing all control and power signals within a single cable.

For deployments without access to Ethernet, the touch screen can also be connected to the network over Wi-Fi® communications via a local wireless access point (WAP).

- Support for 802.11a/b/g/n/ac protocols at 2.4 and 5 Ghz bands affords high-speed wireless performance in many environments.[5]
- Wi-Fi connectivity supports up to 45 ft (13.7 m) (typical) of omnidirectional coverage indoors. For Wi-Fi networks with multiple WAPs, the TSS-470E can hand off communication from one access point to another if the active connection is lost.[6]

Enterprise-Grade Security

The TSS-470E is an enterprise-grade touch screen that can be deployed across hundreds of spaces and set up easily using a web browser or XiO Cloud. It employs standard network security protocols, including 802.1X network access control, SSH, TLS, and HTTPS to ensure reliability and compliance with your organization's IT policies. Additional support for SNMP allows the touch screen to be monitored by your IT administrator.[7]

The TSS-470E is configured to meet Crestron's enhanced security standards right out of the box. The TSS-470E ships with authentication enabled and requires that an administrator account be created before access is granted to most device configuration and control interfaces.

Mounting Accessories

The TSS-470E supports numerous mounting accessories that allow the touch screen to be installed in various scheduling spaces. Security screws are provided with each mounting accessory to prevent unauthorized removal of the touch screen.

NOTE: The TSS-470E does not ship with any mounting accessories included. One of the following mounting accessories must be purchased per touch screen.

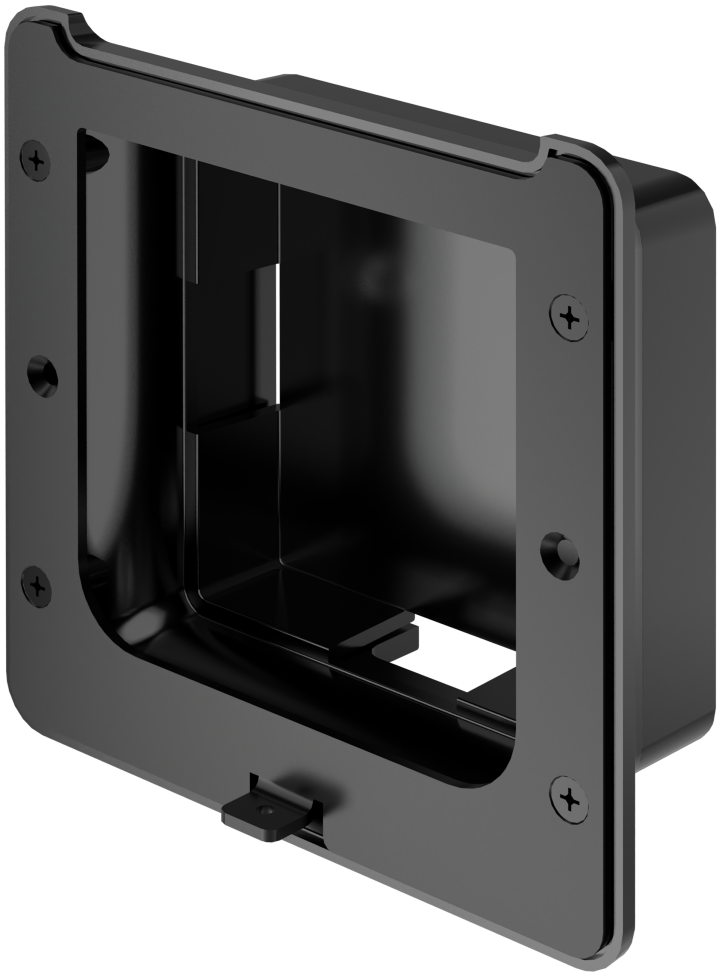
- The TSS-470E-MSMK-B-T multisurface mount kit allows the touch screen to be mounted directly to virtually any flat surface, making it ideal for mounting at the entrance of a hoteling space for scheduling applications.[4]
- The TSS-470E-TTK-B-T tabletop kit provides a stylish tabletop enclosure for the touch screen that can be placed within a hoteling space or on a shared desk.[4]
- The TSS-470E-WMK wall mount kit allows the touch screen to be installed easily into existing drywall, paneling, tabletop surfaces for postconstruction applications.[4]

Notes:

1. Actual functionality and on-screen appearance varies based on which scheduling app is in use and how the app is set up. The functionality described in this spec sheet generally refers to the Crestron Scheduling app. Each third-party provider determines the functionality and appearance of their respective app. Refer to each provider's website for more information.
2. Refer to the firmware release notes for a list of all scheduling apps that are supported by that firmware release.
3. Additional subscriptions and/or licenses may be required. Refer to each provider's website for details about the capabilities and requirements of its scheduling application and services. Third-party apps typically run on the TSS-470E as they do on a tablet device. The TSS-470E runs only one app at a time, which is selected using the XiO Cloud® service or the web configuration interface. Only the apps approved and delivered by Crestron can run on the TSS-470E. The TSS-470E cannot be interfaced with a control system and cannot be custom programmed for any other functionality. An internet connection is required.
4. Item(s) sold separately.
5. Wireless range subject to site-specific conditions.
6. Wi-Fi handoff capability enables automatic handoff between up to four predesignated Wi-Fi wireless access points (WAPs). The last successful Wi-Fi connection is maintained indefinitely until that connection is lost, at which point communication is handed off to the nearest available WAP. A very brief interruption to wireless Ethernet communication may occur during the handoff.
7. WPA2 Enterprise encryption is not currently supported for wireless deployments.

TSS-470E-MSMK-B-T Features

The TSS-470E-MSMK-B-T multisurface mount kit provides a versatile surface mounting solution for a TSS-470E-B-T desk scheduling touch screen. Using the multisurface mount kit, the touch screen can be mounted directly to glass, granite, marble, wood paneling, plaster, smooth masonry, or virtually any other flat surface. The TSS-470E-MSMK-B-T is ideal for mounting at the entrance to a hoteling space for desk scheduling applications.



Key features include:

- Permits flush mounting a TSS-470E touch screen to virtually any flat, smooth surface
- Ideal for mounting at the entrance to a hoteling space for desk scheduling applications
- Supports glass surface and partition mounting
- Secure, screwless installation using the peel-and-stick adhesive rear housing

- Security screw provided to prevent unauthorized removal of the touch screen
- Available in black textured finish

The TSS-470E-MSMK attaches securely to a flat, smooth surface without screws using the included peel-and-stick adhesive rear housing. For a finished appearance when mounted to a transparent glass wall, an adhesive rear label is provided, which simply affixes to the opposite side of the glass behind the unit. A template is provided for the MSMK to help ensure that it is level and properly aligned with the surface. A security screw is also provided to prevent unauthorized removal of the touch screen from the MSMK.

The TSS-470E-MSMK rear housing provides four cutout holes (on the top, bottom, and sides of the housing) for running concealed cables to the touch screen using adhesive-backed raceway (not included). A trim ring with an opening for the raceway is attached to the rear housing to conceal any unused cutouts.

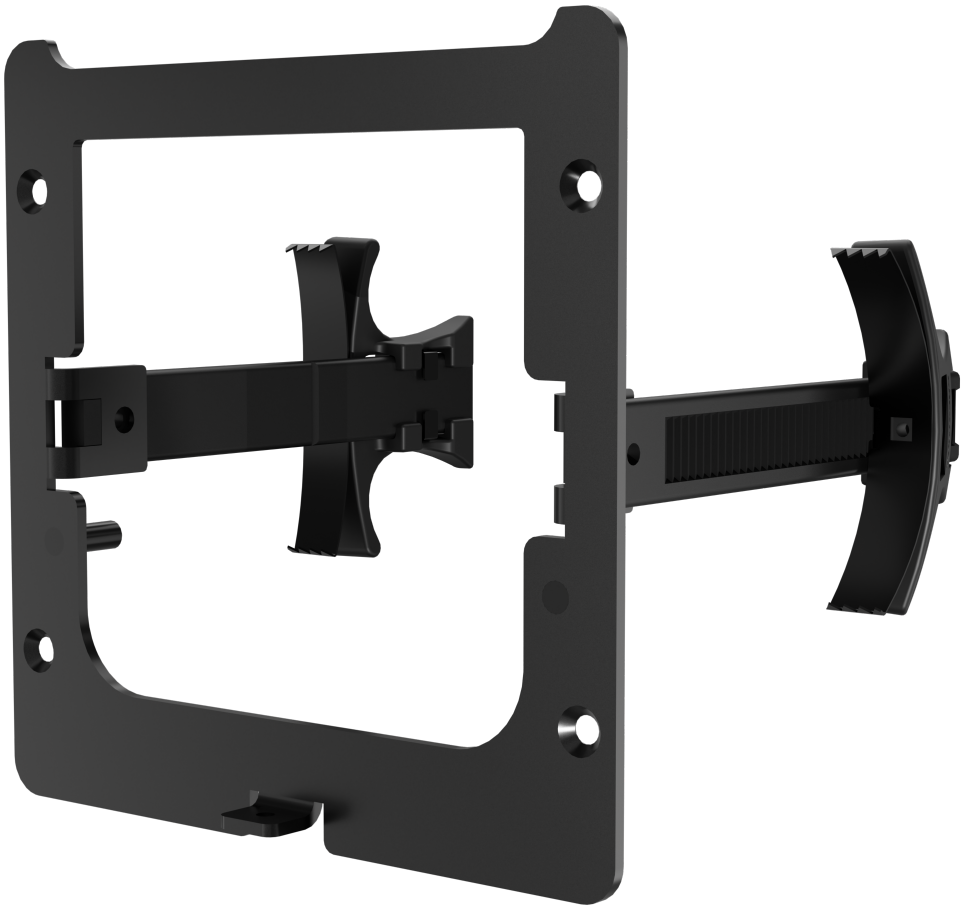
TSS-470E-TTK-B-T Features

The TSS-470E-TTK-B-T tabletop kit provides a stylish tabletop enclosure for a TSS-470E-B-T desk scheduling touch screen. The TSS-470E-TTK-B-T is ideal for placement within a hoteling space or on a shared desk.

When installed in the enclosure, the TSS-470E sits flush with the enclosure housing and is tilted at a 45° angle. Any cables are routed through the rear of the enclosure through a strain-relieving grommet. The complete assembly may be placed on any flat, level surface for use. A security screw is also provided to prevent unauthorized removal of the touch screen from the enclosure.

TSS-470E-WMK Features

The TSS-470E-WMK wall and surface mount kit provides a convenient postconstruction mounting solution for installing a TSS-470E-B-T desk scheduling touch screen into an existing framed wall, desk, table, or similar flat surface. It is specifically intended for postconstruction applications, providing a complete mounting assembly designed to allow quick and easy installation into drywall, paneling, or a tabletop surface. A security screw is also provided to prevent unauthorized removal of the touch screen from the WMK.



The TSS-470E-WMK wall and surface mount kit provides a convenient solution for installing the TSS-470E touch screen into an existing wall or similar flat surface. It is specifically intended for postconstruction applications, providing a complete mounting assembly designed to allow quick and easy installation into drywall, paneling, or a tabletop surface.

Specifications

This section provides the following information:

TSS-470E-B-T Specifications

Product specifications for the TSS-470E-B-T are provided below.

Product Specifications

Touch Screen Display

Display Type	Transflective LCD, backlit
Size	3.5 in. (89 mm) diagonal
Resolution	480 x 320 pixels

Controls and Indicators

Reset	(1) Recessed push button on rear panel for hardware reset
Light Bar	(1) LED light bar; Supports alternating green/amber/red indication of desk or room availability; Supports custom color selection for availability states

Graphics Engine

On-screen keyboard, native desk scheduling application, setup and diagnostics via XiO Cloud, web browser, or on-screen UI

Scheduling Support

Crestron Scheduling App	Office 365® software
Third-Party Apps	Includes support for various third-party scheduling applications[1,2,3]

Languages

User Interface	English (US)

Memory

RAM	1 GB
Storage	8 GB SD Card

Wired Communications

Ethernet	100/1000 Mbps, autoswitching, autonegotiating, autodiscovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP, IEEE 802.1X, SNMP, NTP, IPv4, HTTPS web browser setup, XiO Cloud® client, IEEE 802.3at compliant
USB	USB 2.0 host

Wireless Communications

Transceiver	IEEE 802.11a/b/g/n/ac Wi-Fi® communications (2.4 or 5 GHz 2-way RF), static IP or dynamic IP via DHCP
Security	64 and 128-bit WEP, WPA, and WPA2-PSK with TKIP and AES[7]

Range	Up to 45 ft (13.7 m) typical[5]

Connectors

LAN PoE	(1) 8-pin RJ-45 connector, female, with 2 LED indicators; 100BASE-TX/1000BASE-T Ethernet port; Power over Ethernet (PoE) compliant; Green and yellow LEDs indicate Ethernet port status
24V 0.75A	(1) 2.1 x 5.5 mm DC power connector; 24VDC power input; PW-2407WU model power pack[4]
USB C	(1) USB Type-C® connector, female; USB 2.0 host port; For future use with supported Crestron accessories

Power

PoE (Power over Ethernet)	IEEE 802.3at Type 1 Class 2 (6.49 W) compliant, Compatible with IEEE 802.3at compliant Ethernet switch or third-party PoE-compliant PSE
Power Pack	Input: 100–240VAC, 50/60 Hz; Output: 0.75A @ 24VDC; Model: PW-2407WU[4]
Power Consumption	3 W (typical)

Environmental

Temperature	32 to 104°F (0 to 40°C)
Humidity	10% to 90% RH (noncondensing)

Construction

Housing	Plastic, textured black finish, edge-to-edge glass with black surround
Mounting	Wall and surface mount, table top mount, and multisurface mount options available[4]

Dimensions

Height	3.95 in. (100 mm)
Width	3.95 in. (100 mm)
Depth	1.33 in. (34 mm)

Dimensions do not include any mounting accessories

Weight

5.4 oz (155 g)

Compliance

Regulatory Model: M202138001

FCC Part 15 Class B digital device, IC, CE, Intertek® Listed for US & Canada

Notes:

1. Actual functionality and on-screen appearance varies based on which scheduling app is in use and how the app is set up. The functionality described in this spec sheet generally refers to the Crestron Scheduling app. Each third-party provider determines the functionality and appearance of their respective app. Refer to each provider's website for more information.
2. Refer to the firmware release notes for a list of all scheduling apps that are supported by that firmware release.
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4. Item(s) sold separately.
5. Wireless range subject to site-specific conditions.
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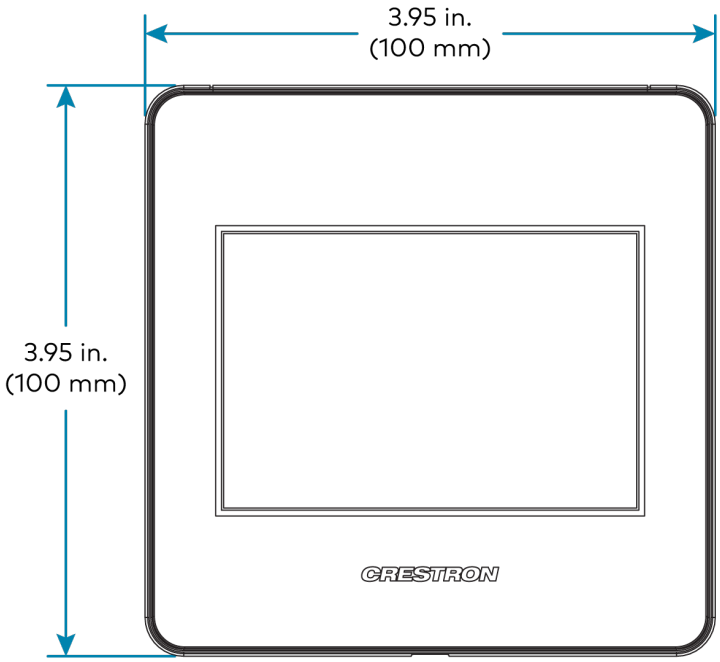
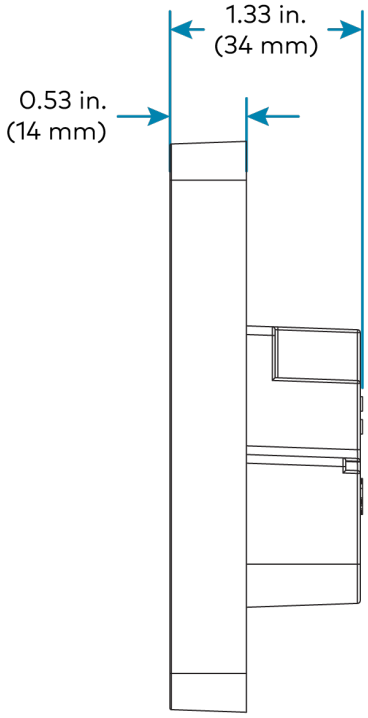
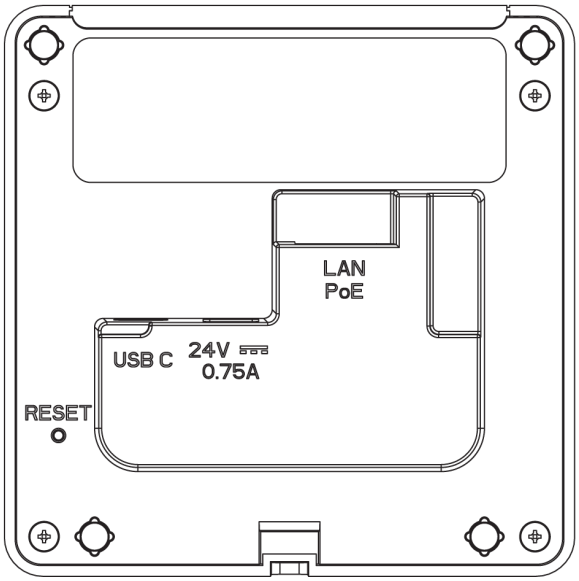
7. WPA2 Enterprise encryption is not currently supported for wireless deployments.

Dimension Drawings







TSS-470E-MSMK-B-T Specifications

Product specifications for the TSS-470E-MSMK are provided below.

Product Specifications

Construction

Housing	Plastic, textured black finish
Surface Mounting	Peel-and-stick adhesive mounting to glass or other flat, smooth surface

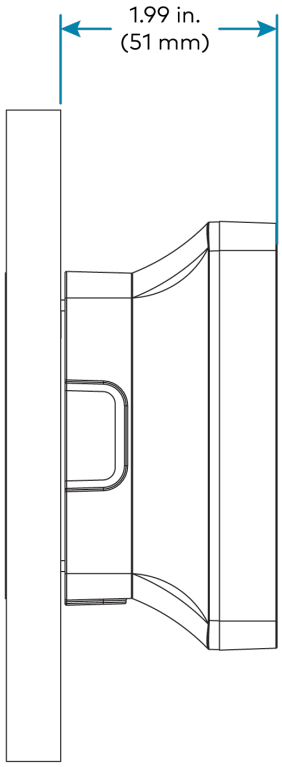
Dimensions

Height	3.95 in. (100 mm)
Width	3.95 in. (100 mm)
Depth	1.80 in. (46 mm); 1.99 in. (51 mm) with touch screen installed

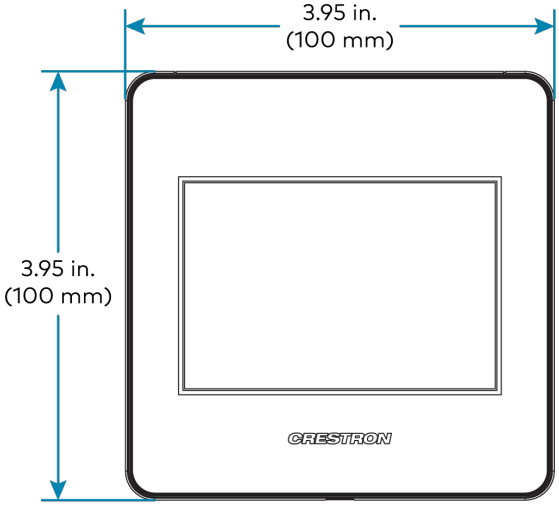
Weight

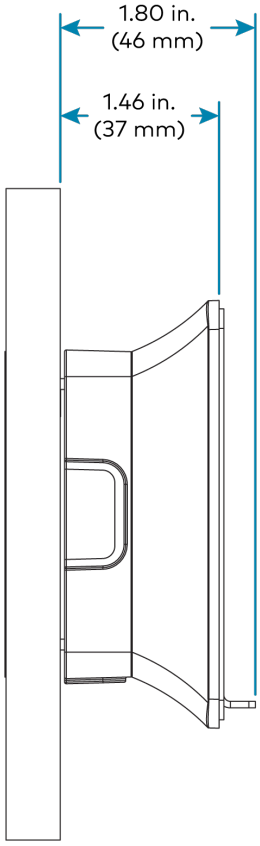
2.2 oz (64 g)

Dimension Drawings

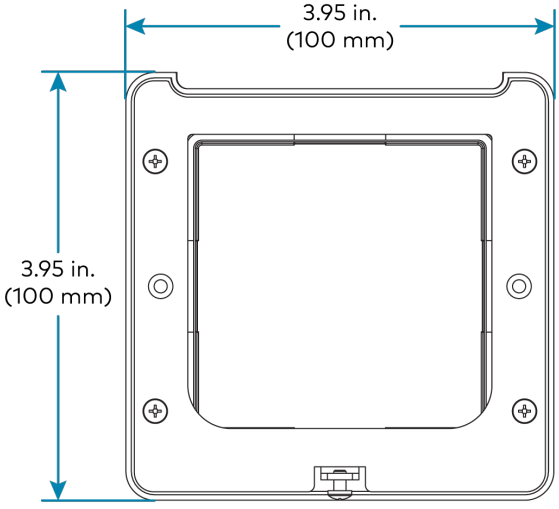


TSS-470E-MSMK-B-T (with touch screen)





TSS-470E-MSMK-B-T (without touch screen)



TSS-470E-TTK-B-T Specifications

Product specifications for the TSS-470E-TTK are provided below.

Product Specifications

Construction

Plastic, enclosure, textured black, 45° fixed operating angle, for freestanding tabletop use

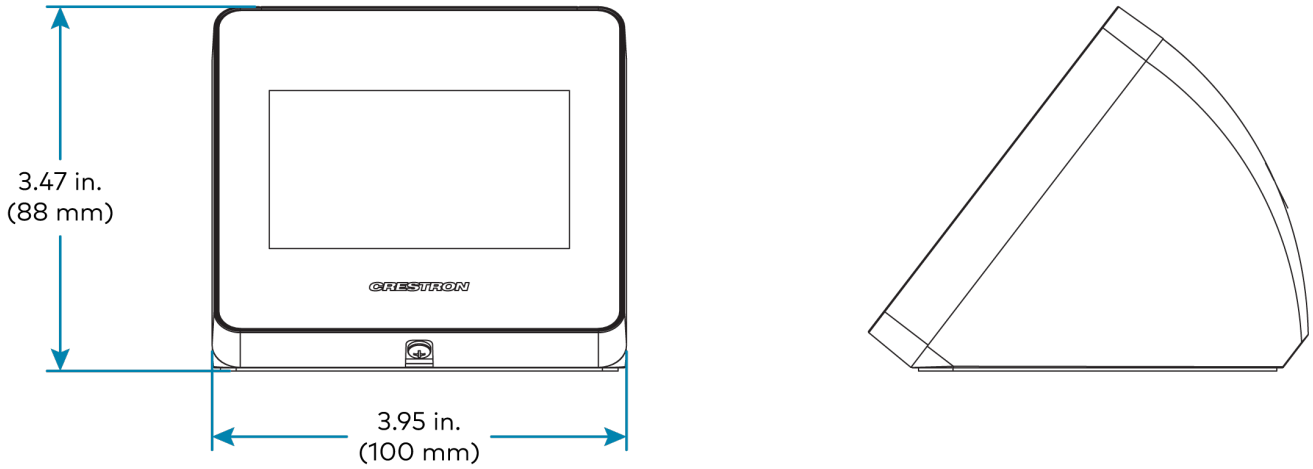
Dimensions

Height	3.47 in. (88 mm)
Width	3.95 in. (100 mm)
Depth	4.19 in. (107 mm)

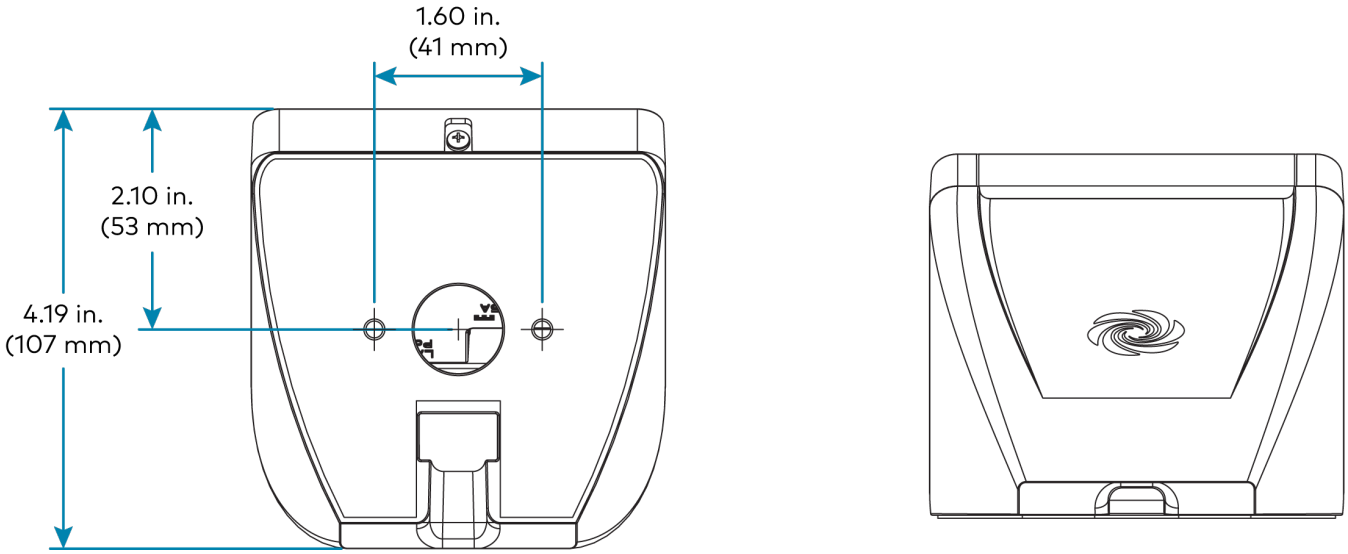
Weight

1.1 lb (500 g)

Dimension Drawings



TSS-470E-TTK-B-T (with touch screen)



TSS-470E-WMK Specifications

Product specifications for the TSS-470E-WMK are provided below.

Product Specifications

Construction

Metal mounting plate with zip rail mounting system

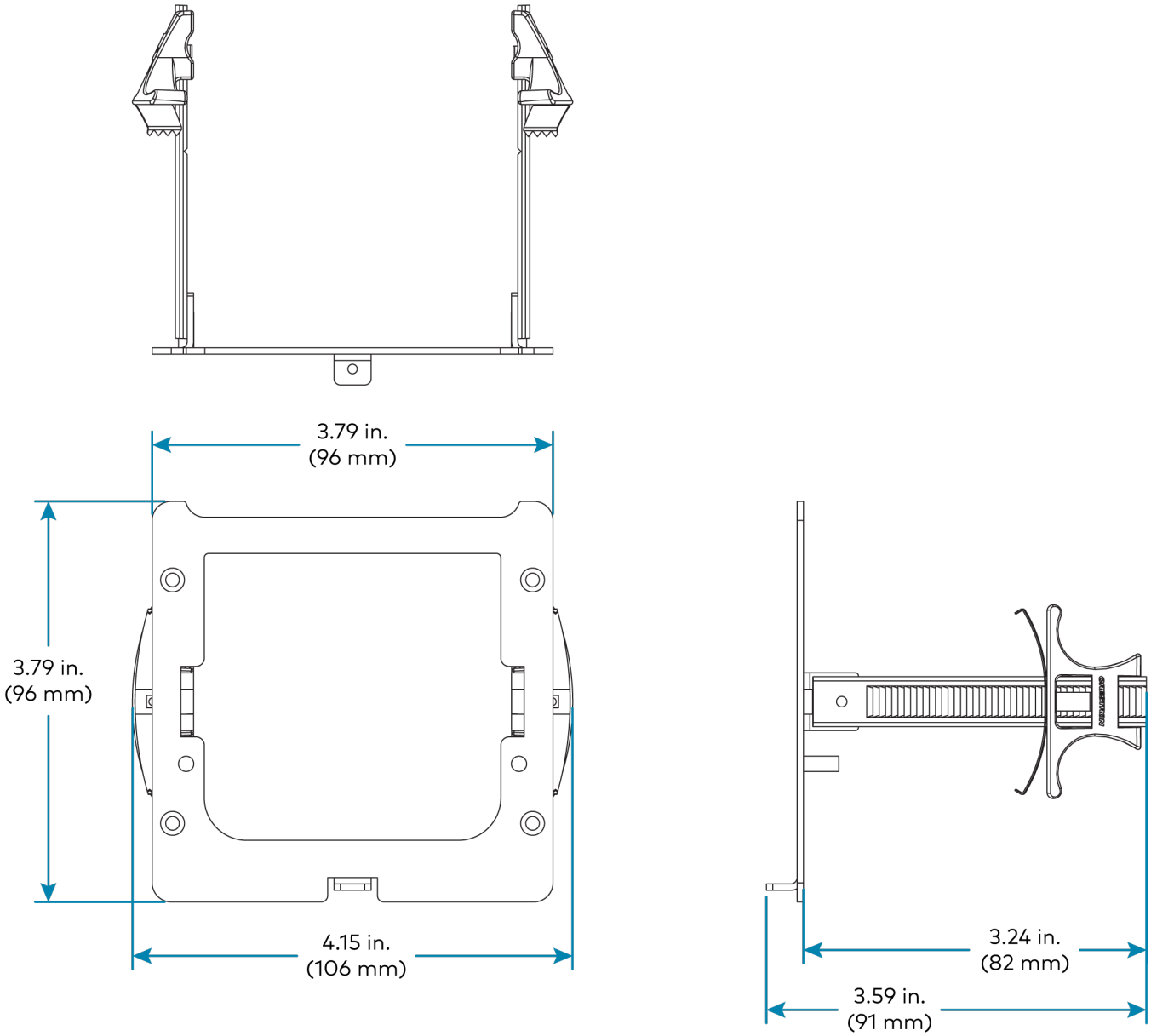
Dimensions

Height	3.79 in. (96 mm)
Width	4.15 in. (106 mm)
Depth	3.59 in. (91 mm)

Weight

3.8 oz (108 g)

Dimension Drawings



Installation

This section provides the following information:

- TSS-470E Installation
- TSS-470E-MSMK Installation
- TSS-470E-TTK Installation
- TSS-470E-WMK Installation

TSS-470E Installation

Use the following procedures to install the TSS-470E.

NOTE: The TSS-470E touch screen supports various mounting applications. Installation of the touch screen requires additional mounting hardware (not included):

- The TSS-470E-MSMK-B-T multisurface mount kit allows the touch screen to be mounted directly to glass, granite, marble, wood paneling, plaster, smooth masonry, or virtually any other flat surface.
- The TSS-470E-TTK-B-T tabletop kit provides a tabletop enclosure for the touch screen with a 45° angle tilt.
- The TSS-470E-WMK wall mount kit allows the touch screen to be installed into existing drywall or paneling for postconstruction applications.

In the Box

Qty.	Description
1	TSS-470E-B-T, 3.5 in. Desk Scheduling Touch Screen

Install the Mounting Hardware

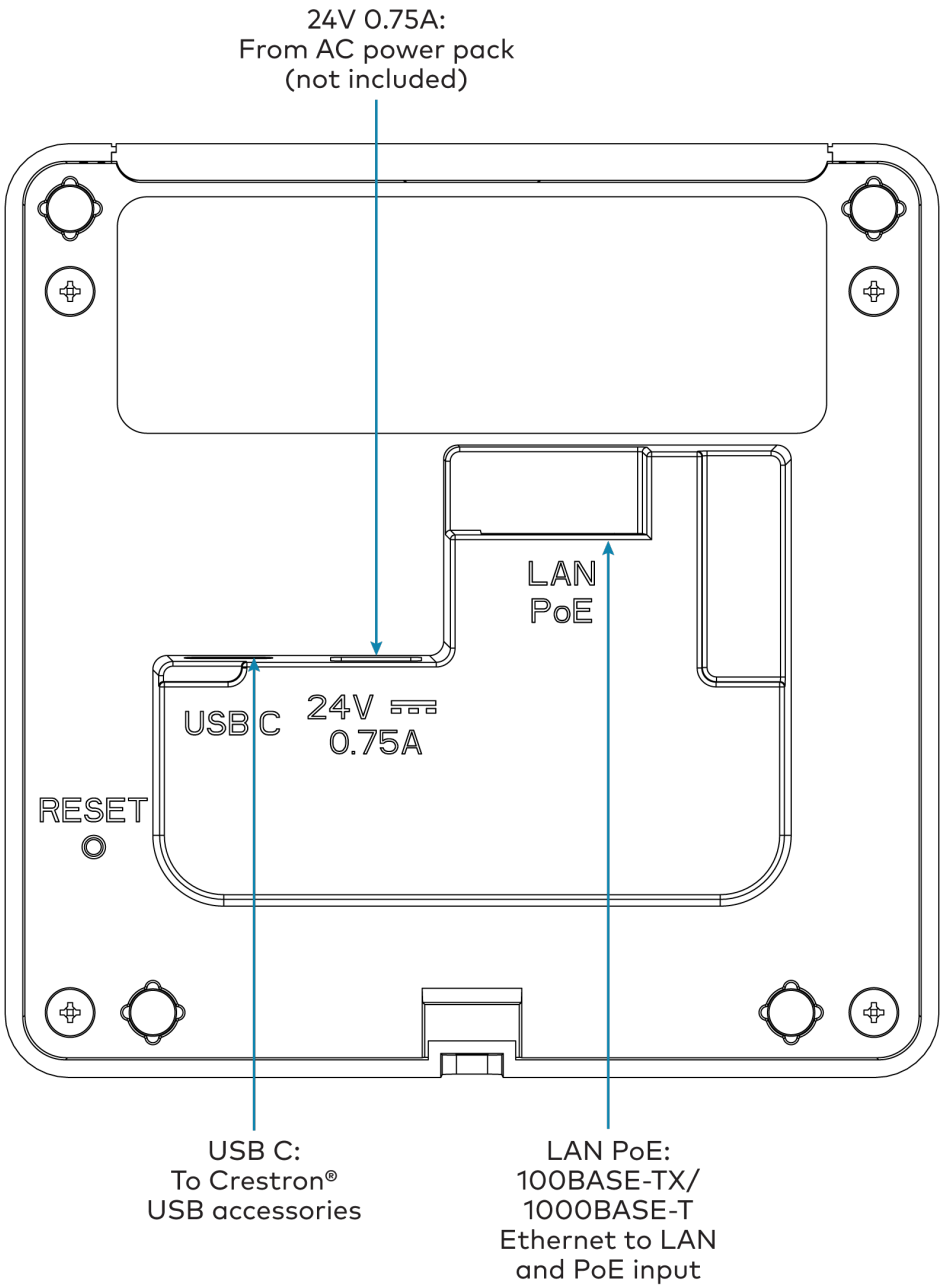
One of the available TSS-470E mounting accessories (not included) must be installed along with the TSS-470E. Refer to the following installation procedures depending on the chosen mounting hardware:

- For applications where the touch screen will be mounted directly to glass, granite, marble, wood paneling, plaster, smooth masonry, or a similar flat surface, refer to TSS-470E-MSMK Installation on page 25.
- For applications where the touch screen will be mounted onto a tabletop or similar surface, refer to TSS-470E-TTK Installation on page 34.
- For postconstruction applications where a back box will be installed into drywall, paneling, or a tabletop, refer to TSS-470E-WMK Installation on page 39.

Connect the Touch Screen

Route all necessary cables to the touch screen as described in the installation instructions for the chosen mounting accessory (refer to Install the Mounting Hardware on page 23). Then, make all connections to the rear of the touch screen as shown in the following image.

NOTE: Do not use an Ethernet cable with a strain relief boot when connecting to the touch screen **LAN PoE** port, as the cable end does not provide sufficient bend radius to support installation with compatible mounting accessories.



Observe the following when connecting the touch screen:

- Use Crestron power supplies for Crestron equipment.
- The touch screen may be powered with a single Ethernet cable or via a 24VDC power supply (PW-2407WU, not included).
- If using PoE (Power over Ethernet), power and data connection is provided to the touch screen by the Ethernet cable. A PoE-capable network switch is recommended (not included).

  > **NOTE:** If using a PoE network switch, ensure that the switch is grounded properly. Otherwise, electromagnetic interference may cause the touch screen to experience false touches.

- Apply power after all connections have been made.

TSS-470E-MSMK Installation

Use the following procedures to install the TSS-470E-MSMK.

In the Box

Qty.	Description
1	TSS-470E-MSMK-B-T, Multisurface Mount Kit for TSS-470E

	Additional Items
1	Template, Rear Housing (4535585)
1	Grommet, Rubber (2061467)
1	Screw, 4-40 x 3/16 in., Torx®, Black (2061048)
1	Screw, 4-40 x 3/16 in., Phillips, Black (2007148)
1	Label, Black (4535584)

Install the MSMK

Use the following procedures to install the MSMK onto a flat pane of glass or similar smooth surface (such as granite, marble, plaster, or smooth stone and masonry). The adhesive on the MSMK mounting bracket attaches permanently to the surface.

The following materials (not included) are required for this installation:

- Level
- Masking tape
- Phillips screwdriver
- Surface cleaning product that does not leave a film

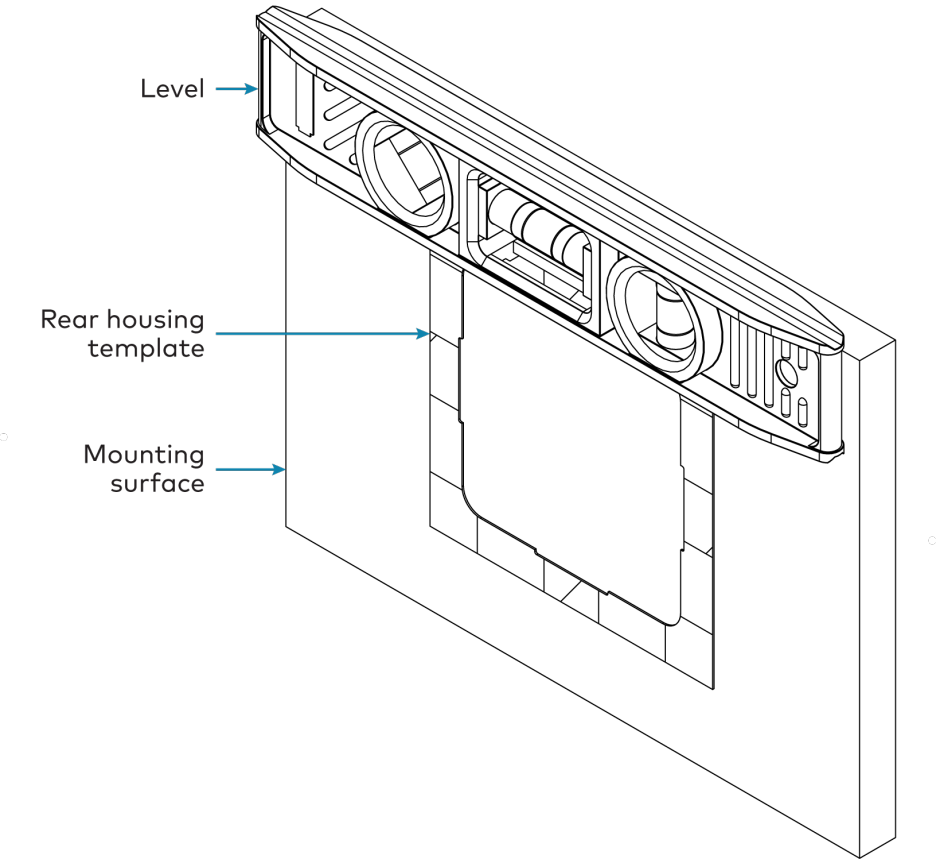
Position the Rear Housing Template

An overlay template for the rear housing is provided with the MSMK to help ensure that it remains level during installation.

To position the rear housing template:

1. Clean and dry the mounting surface thoroughly.
2. Select a mounting location for the MSMK, and determine whether raceway (not included) will enter the MSMK from the top, bottom, left, or right cutout.

3. Use a level and masking tape to attach the included rear housing template to the surface at the chosen location. Ensure the template is level before proceeding.



Install Raceway

Raceway (not included) can be installed on a nearby smooth surface to conceal cables running to the touch screen from the floor, ceiling, or an adjacent wall, pillar, or mullion.

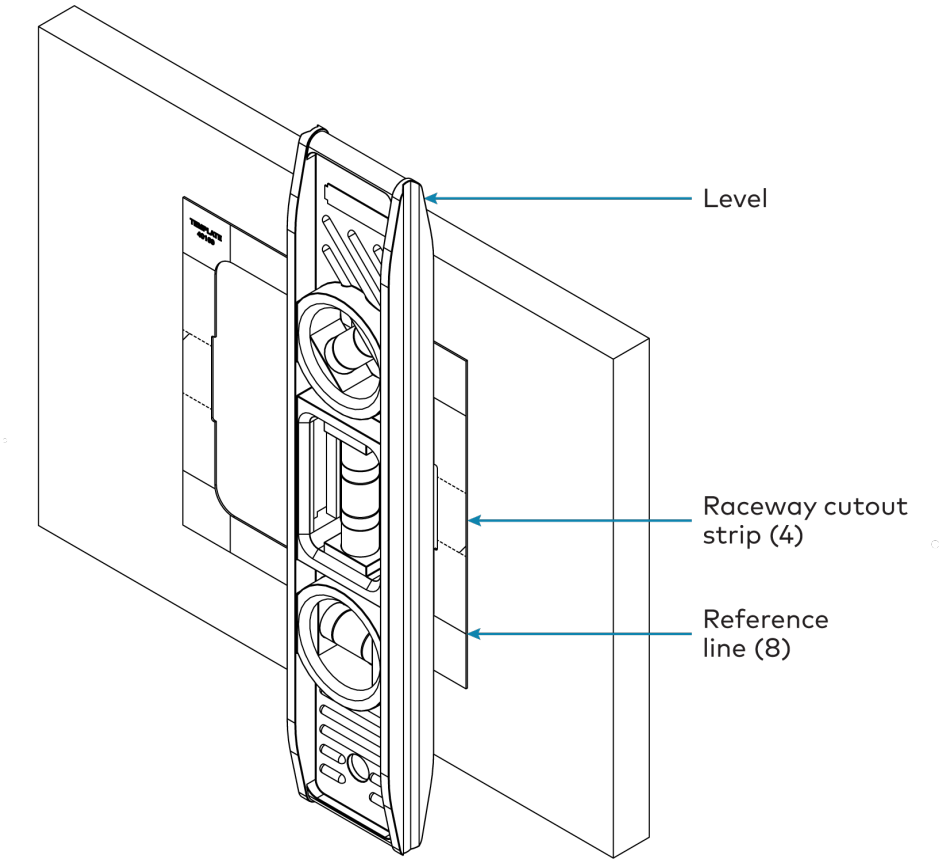
> **CAUTION:** Raceway must be installed prior to installing the MSMK, and the location of the raceway cannot be changed once the MSMK is installed.

To install raceway for use with the touch screen:

1. Determine whether the raceway will enter the MSMK from the top, bottom, left, or right side.
2. Create a raceway cutout by removing the appropriate perforated strip from the rear housing template.

   For example, if the raceway will enter the MSMK from the left side, remove the left perforated strip from the template.

3. Cut the raceway to the required length using the corresponding raceway cutout and reference lines in the template. The end of the raceway that will enter the MSMK can also be cut to a specific shape for a finished appearance.

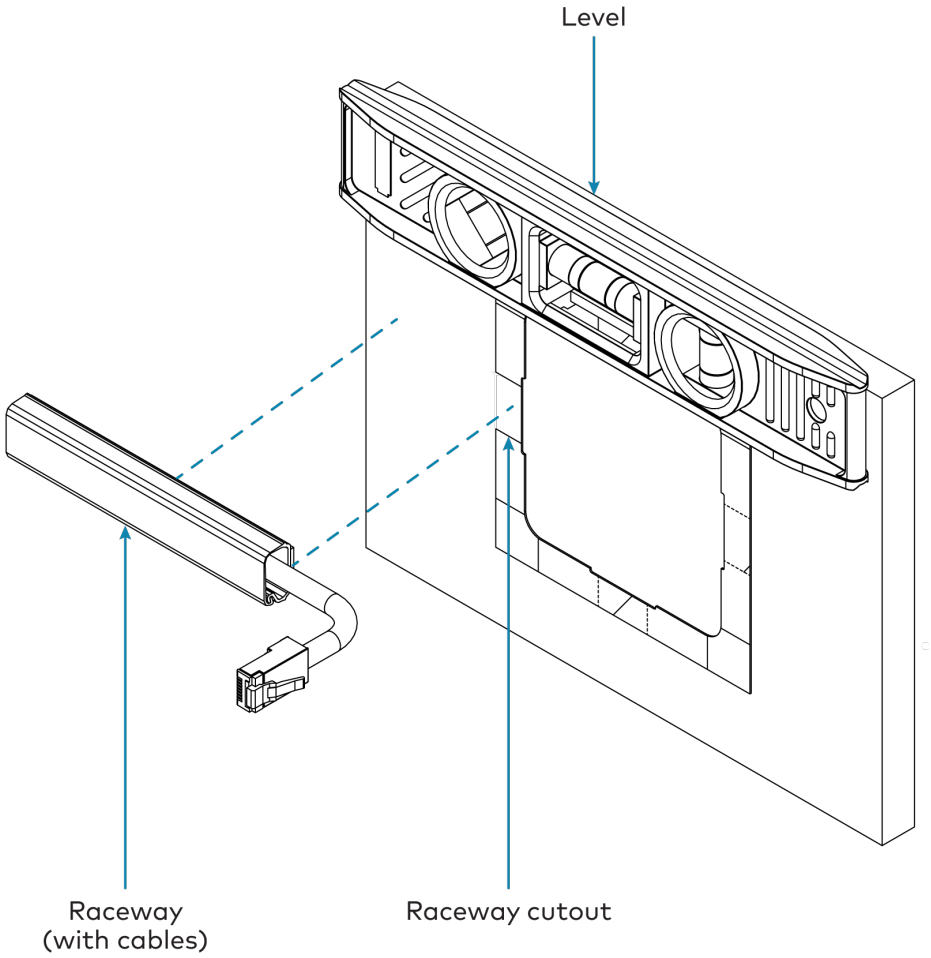


4. Insert all necessary cables into the raceway.

> **NOTE:** Do not use an Ethernet cable with a strain relief boot when connecting to the touch screen, as the cable end does not provide sufficient bend radius to support installation with the MSMK.

5. Remove the protective liner from the rear of the raceway.

6. Position the raceway on the mounting surface using the corresponding raceway cutout and reference lines in the template. Ensure the raceway is level prior to adhesion.



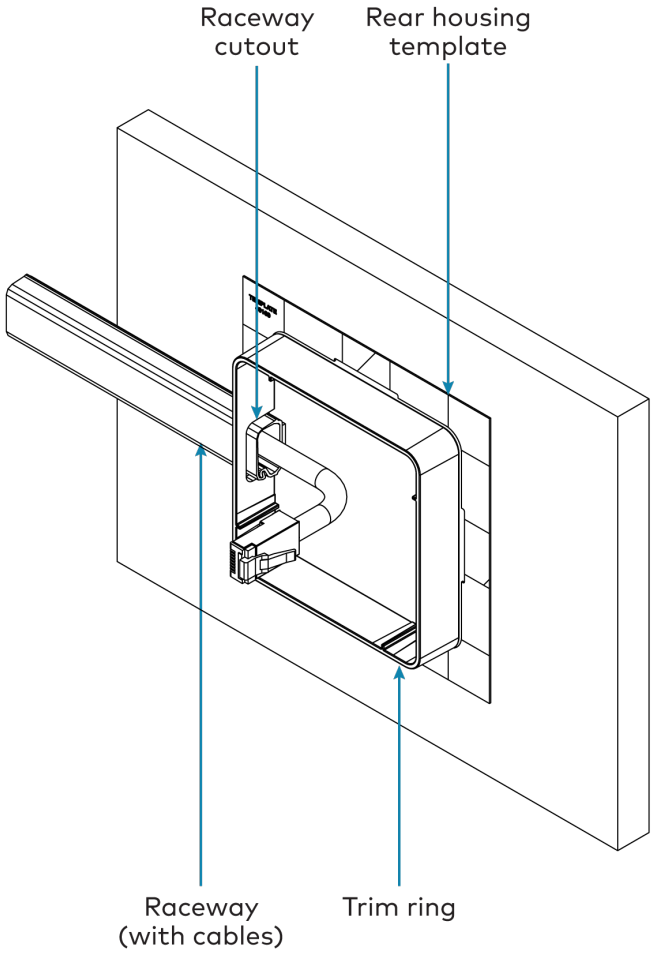
7. Press the raceway against the mounting surface firmly until it adheres completely.
8. Attach any elbows, couplings, and additional cable channels to the mounting surface as necessary.

Attach the Rear Housing

To attach the MSMK rear housing to the mounting surface:

1. Remove the plastic trim ring from the MSMK rear housing. The MSMK ships with the trim ring loosely attached to the rear housing.

2. Orient the trim ring within the center cutout of the rear housing template so that the raceway is aligned with the cutout in the trim ring. Ensure that the trim ring opening is facing toward the mounting surface.



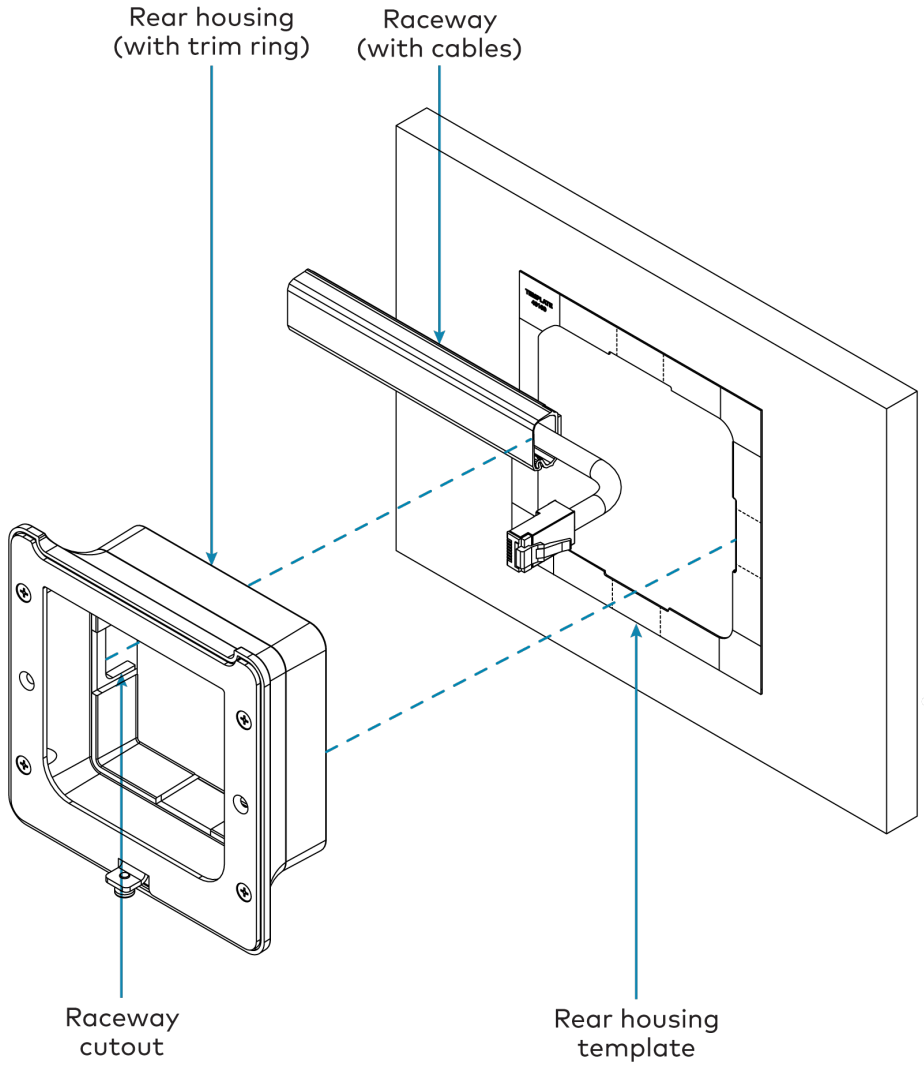
3. Reattach the trim ring to the MSMK rear housing in the orientation determined in step 2.
4. Route all necessary cables out of the raceway and into the center cutout of the rear housing template.
5. Remove the protective liner from the back of the rear housing.

> **CAUTION:** The adhesive on the back of the rear housing is high-strength bond. Once the adhesive comes in contact with a surface, it cannot be removed easily.

6. Hold the rear housing at an angle so that the short, straight edge of the rear housing with the trim ring cutout mates with the end of the raceway. Do not allow the adhesive to come in contact with the surface.
7. Place a level on top of the rear housing.

8. After confirming that the rear housing is level, press it to the mounting surface firmly to ensure proper adhesion and to eliminate any trapped air bubbles.

> **NOTE:** The adhesive wet area (the total area of the adhesive that is free of air bubbles or debris) must be 60% or greater.



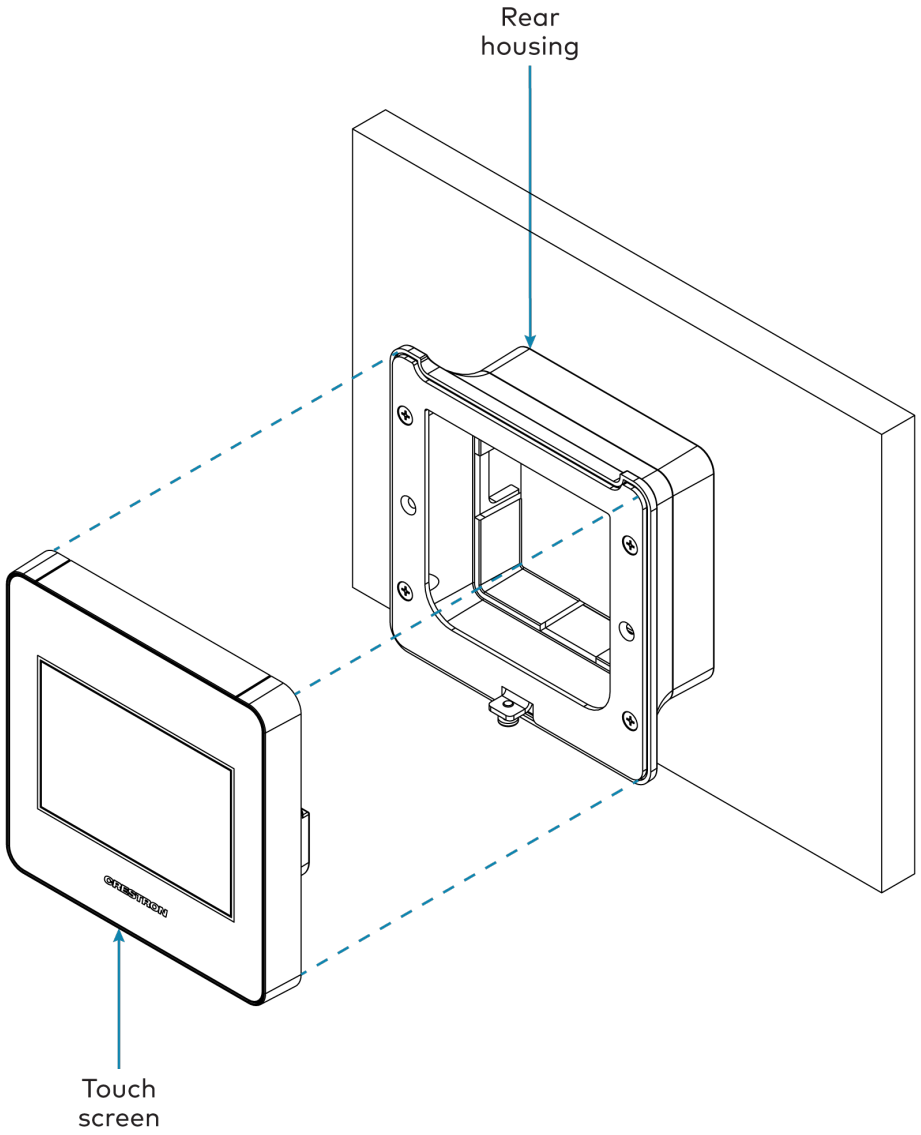
> **NOTE:** Allow a minimum of one hour for the adhesive to cure to the bracket before installing the touch screen.

Attach the Touch Screen

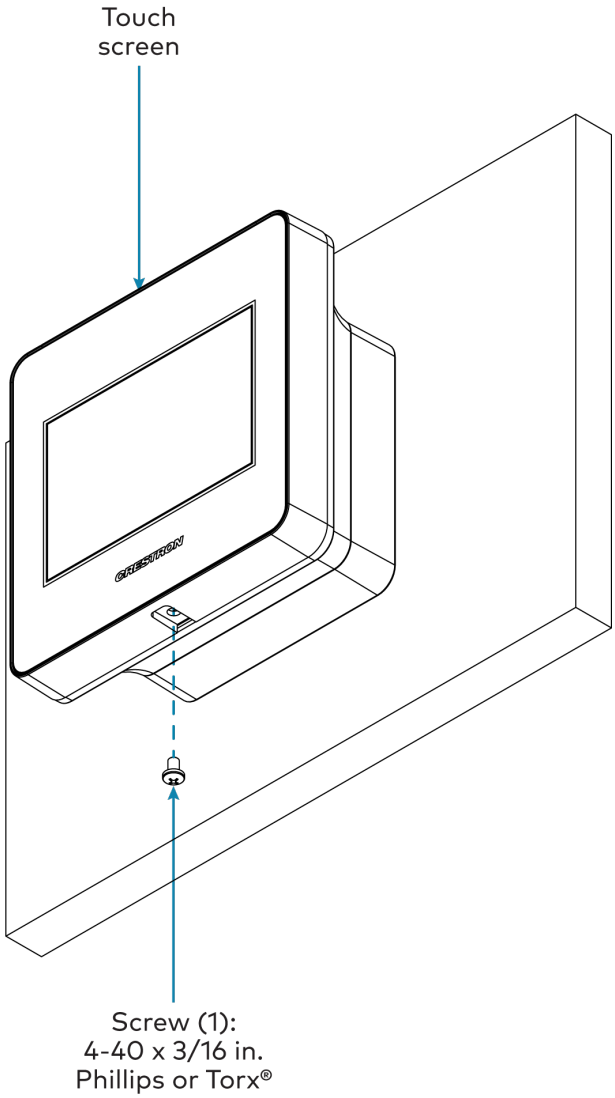
To attach the touch screen to the MSMK:

1. Cut the rear housing template off of the surface and remove any existing tape guides.
2. Connect all cables to the rear of the touch screen.

3. Attach the touch screen to the rear housing, top side first, until the touch screen magnetically snaps into place against the rear housing.



4. (Optional) Screw either the included 4-40 x 3/16 in. Phillips screw or the Torx® security screw into the bottom of the touch screen to secure it to the MSMK.



Attach the Rear Label (Optional)

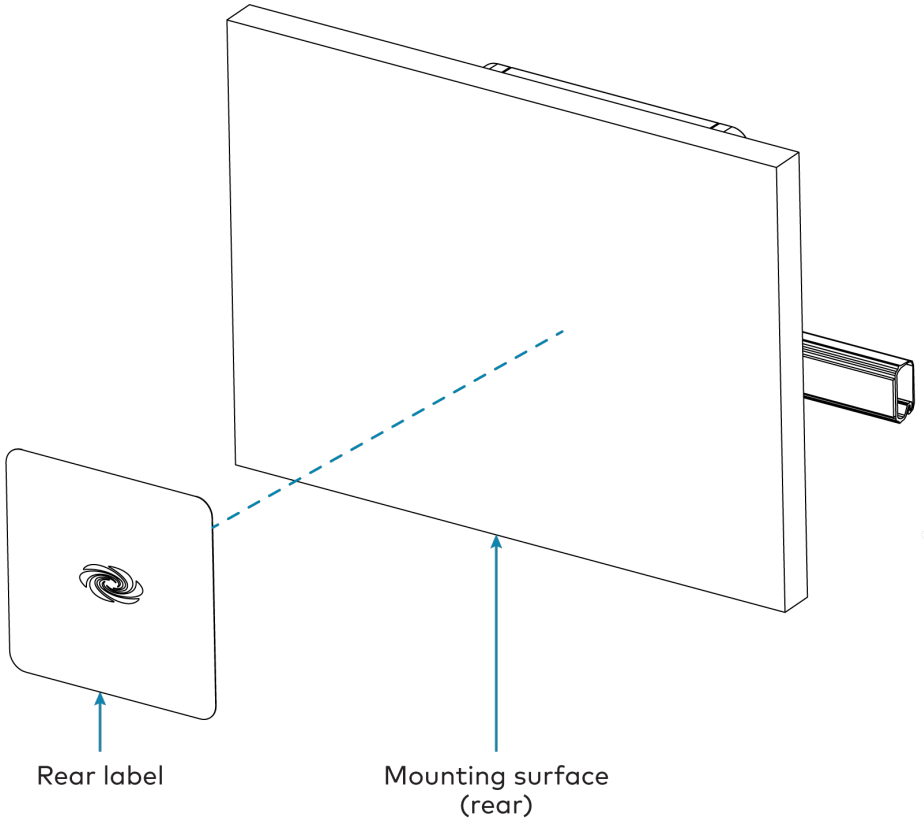
To provide a finished appearance for installations on glass or other transparent surfaces, install the included rear label on the opposite side of the surface behind the MSMK.

To attach the rear label:

1. Clean and dry the rear of the mounting surface thoroughly.
2. Using a level, tape a horizontal reference line on the glass surface that aligns with the lower edge of the rear housing on the opposite side. Ensure the reference line is level before proceeding.
3. Remove the protective liner from the back of the label.

> **CAUTION:** The adhesive on the back of the rear label is high-strength bond. Once the adhesive comes in contact with a surface, it cannot be removed easily.

4. Hold the rear label at a 45-degree angle to the rear housing, and then align the lower edge of the label with the lower edge of the housing. Do not allow the label adhesive to come in contact with the surface.
5. Once the label is level and aligned with the rear housing, press the label to the mounting surface firmly to ensure proper adhesion and to eliminate any trapped air bubbles.



TSS-470E-TTK Installation

Use the following procedures to install the TSS-470E-TTK.

In the Box

Qty.	Description
1	TSS-470E-TTK-B-T, Tabletop Kit for TSS-470E

	Additional Items
1	Grommet, Rubber (2061467)
1	Screw, 4-40 x 3/16 in., Torx®, Black (2061048)
1	Screw, 4-40 x 3/16 in., Phillips, Black (2007148)

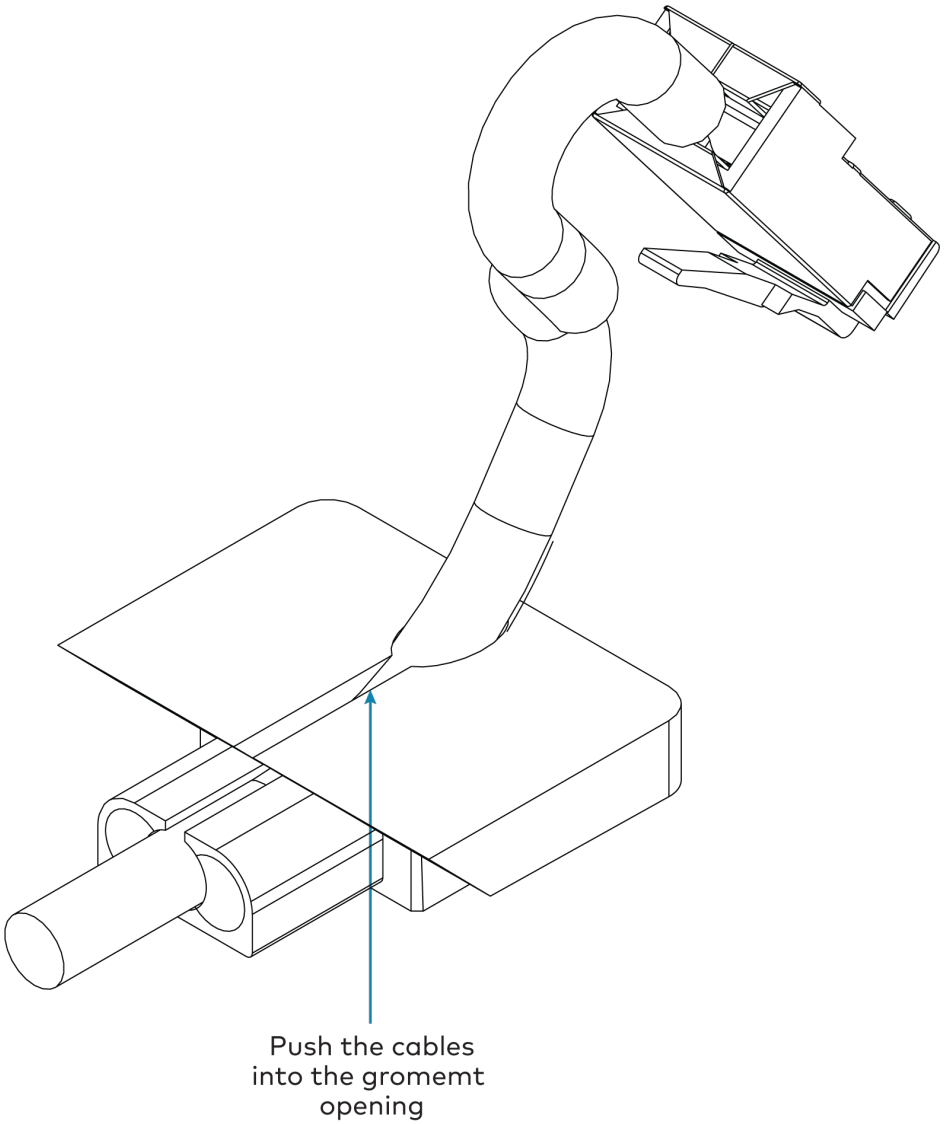
Install the TTK

To install the TTK onto a table or a similar flat surface:

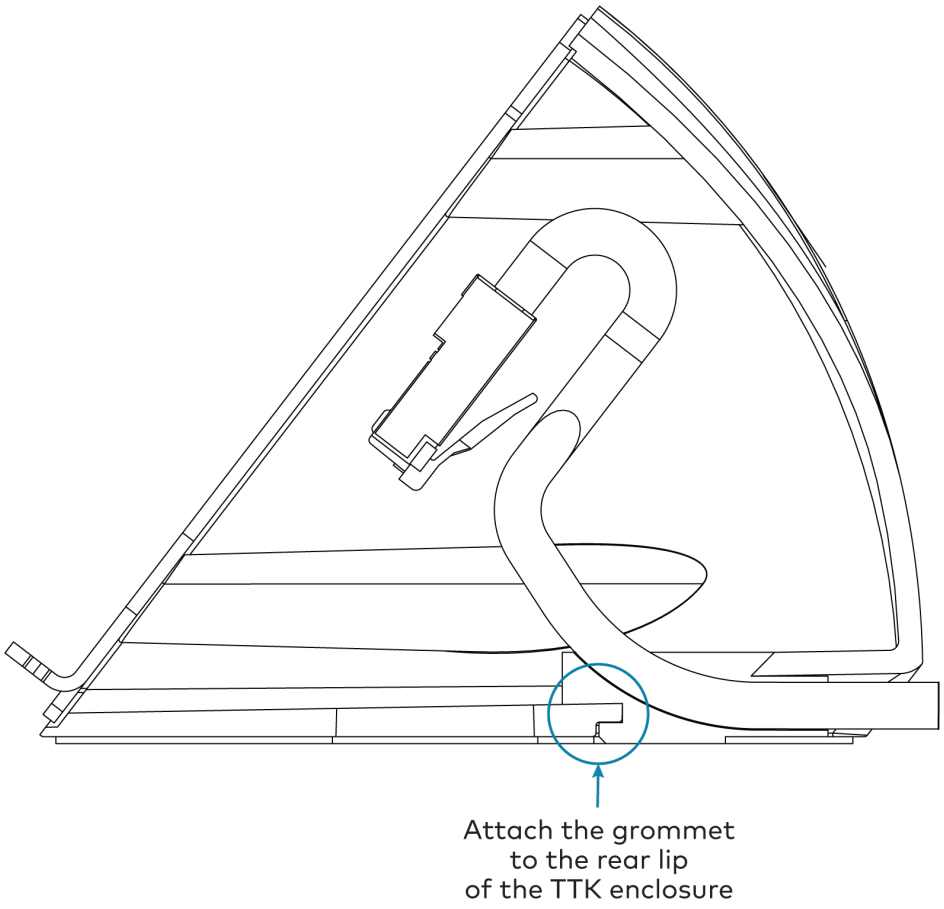
1. Route all necessary cables through the rear opening of the TTK enclosure.

   > **NOTE:** Do not use an Ethernet cable with a strain relief boot when connecting to the touch screen, as the cable end does not provide sufficient bend radius to support installation with the TTK.

2. Push the cables into the opening of the included cable grommet as shown in the following image.

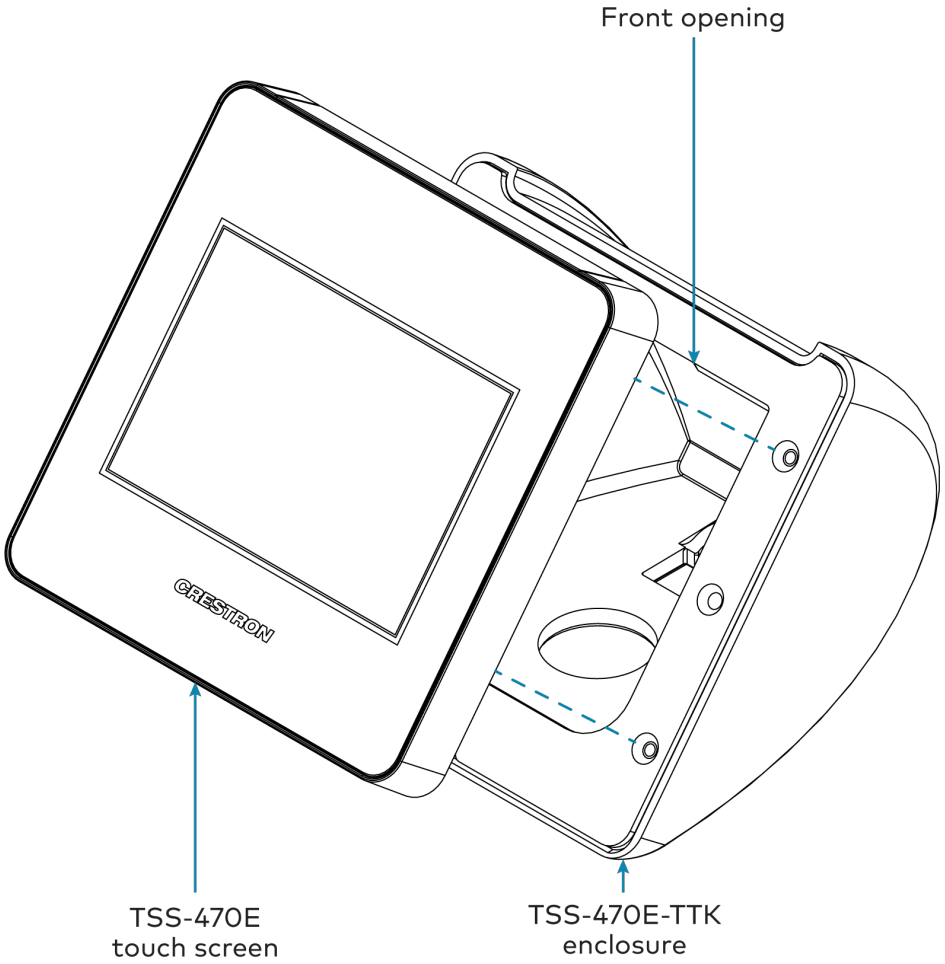


3. Attach the cable grommet to the rear opening of the TTK enclosure so that front slot of the grommet is seated firmly against the bottom rear lip of the TTK enclosure.



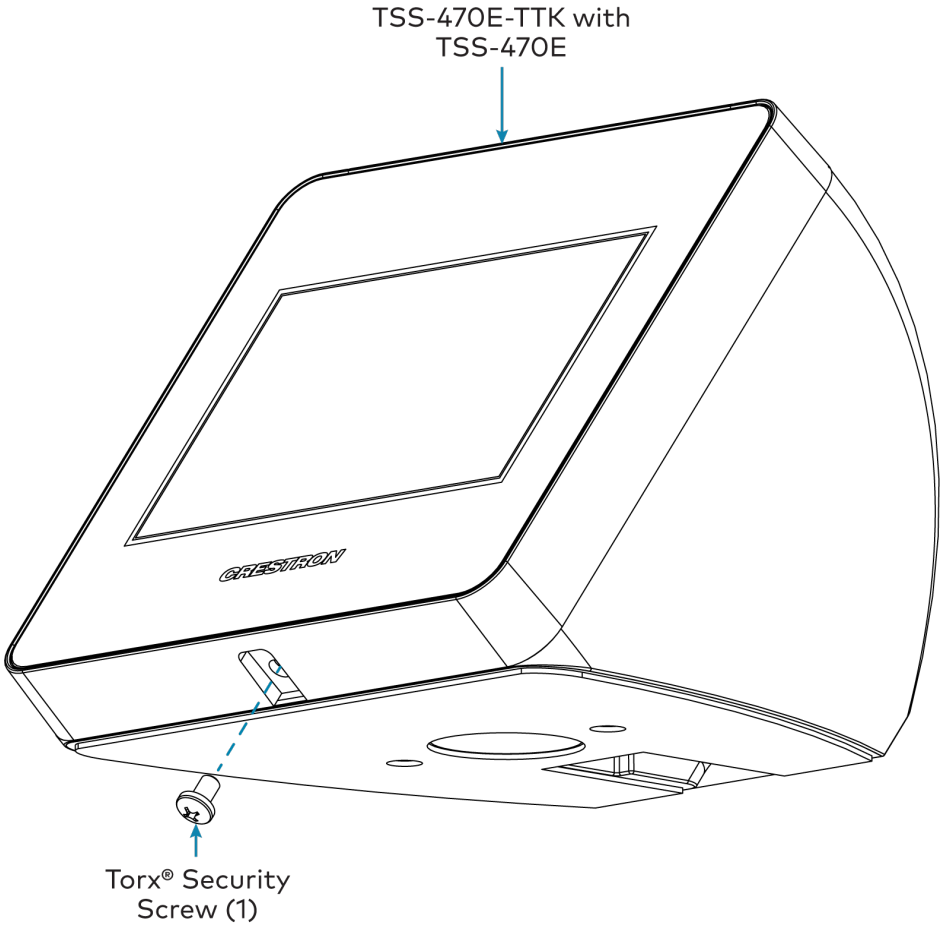
4. Connect all cables to the rear of the touch screen.

5. Attach the touch screen to the front opening of the TTK, top side first, until the touch screen magnetically snaps into place against the rear housing.



6. Route any excess cable length out of the rear of the attached grommet to achieve the desired strain relief.

7. (Optional) Screw either the included 4-40 x 3/16 in. Phillips screw or the Torx® security screw into the bottom of the touch screen to secure it to the TTK.



TSS-470E-WMK Installation

Use the following procedures to install the TSS-470E-WMK.

In the Box

Qty.	Description
1	TSS-470E-WMK, Wall Mount Kit for TSS-470E

	Additional Items
1	Screw, 4-40 x 3/16 in., Torx®, Black (2061048)
1	Screw, 4-40 x 3/16 in., Phillips, Black (2007148)

Install the WMK

Use the following procedures to install the WMK into drywall, paneling, or a tabletop surface.

The following materials (not included) are required for this installation:

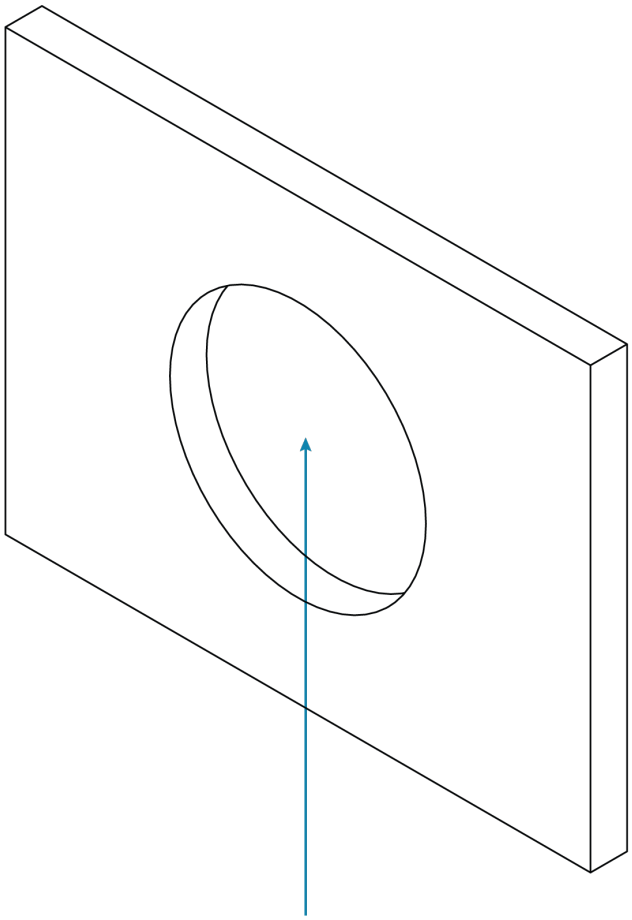
- Level
- 3.5 in. drywall hole saw
- Phillips screwdriver

Prepare the Mounting Surface

To prepare the mounting surface for installation of the WMK:

1. Choose a mounting location that is free of any wiring, studs, or other obstructions. Make a small hole in the surface near the center of the chosen location to verify that it is suitable for mounting.

2. Using a 3.5 in. drywall hole saw, create a cutout in the mounting surface for the WMK.

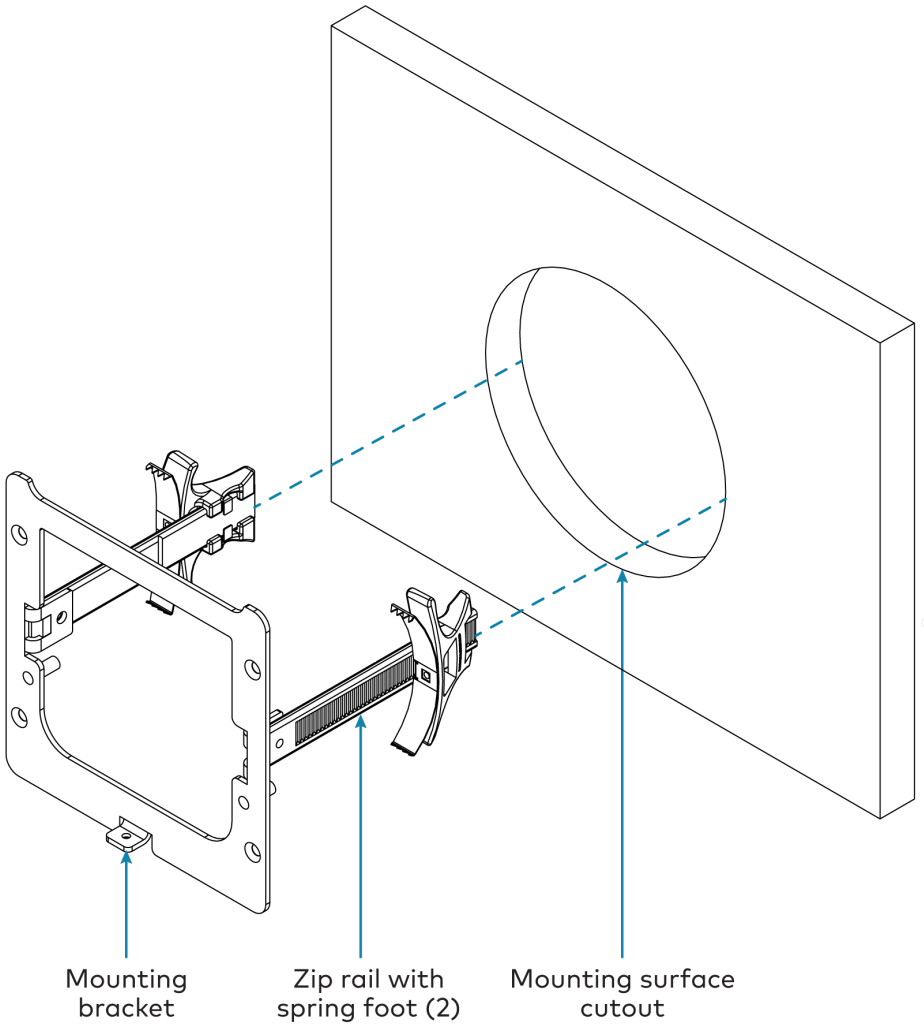


Install the Mounting Bracket

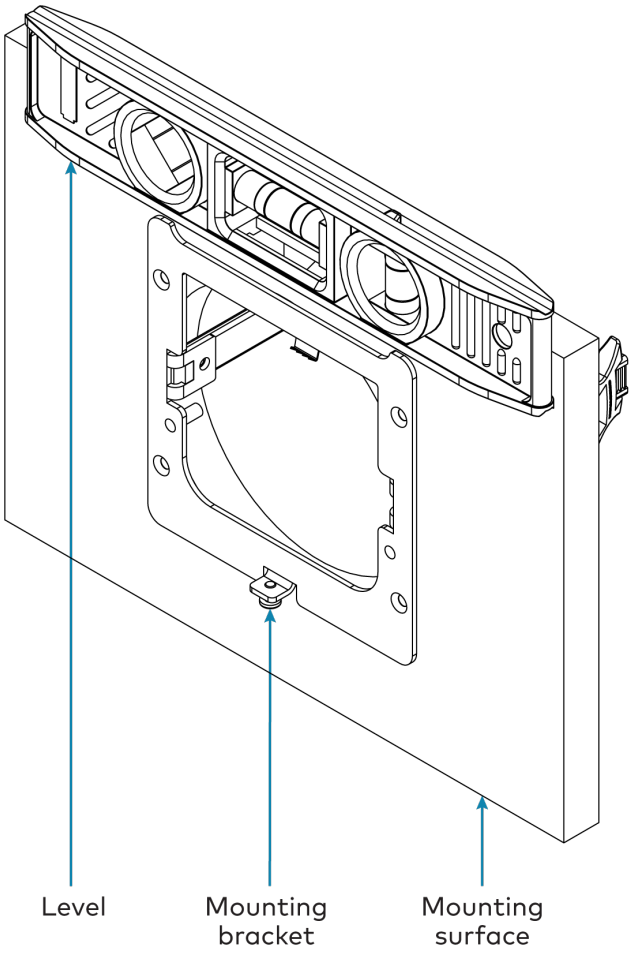
To install the WMK mounting bracket into the mounting surface:

1. Adjust the mounting bracket spring feet so that they are positioned at the rear of their respective zip rails (if they are not located there already). The spring foot position can be adjusted by pressing the release tabs on the inside of each zip rail while pulling the spring foot back. Refer to the following image for the correct spring foot locations.

2. Insert the mounting bracket into the cutout created in Prepare the Mounting Surface on page 39 so that the front of the bracket is flush against the surface and the zip rails and spring feet are seated behind the surface completely. Gently bend the zip rails inward during installation to allow them to pass through the cutout.

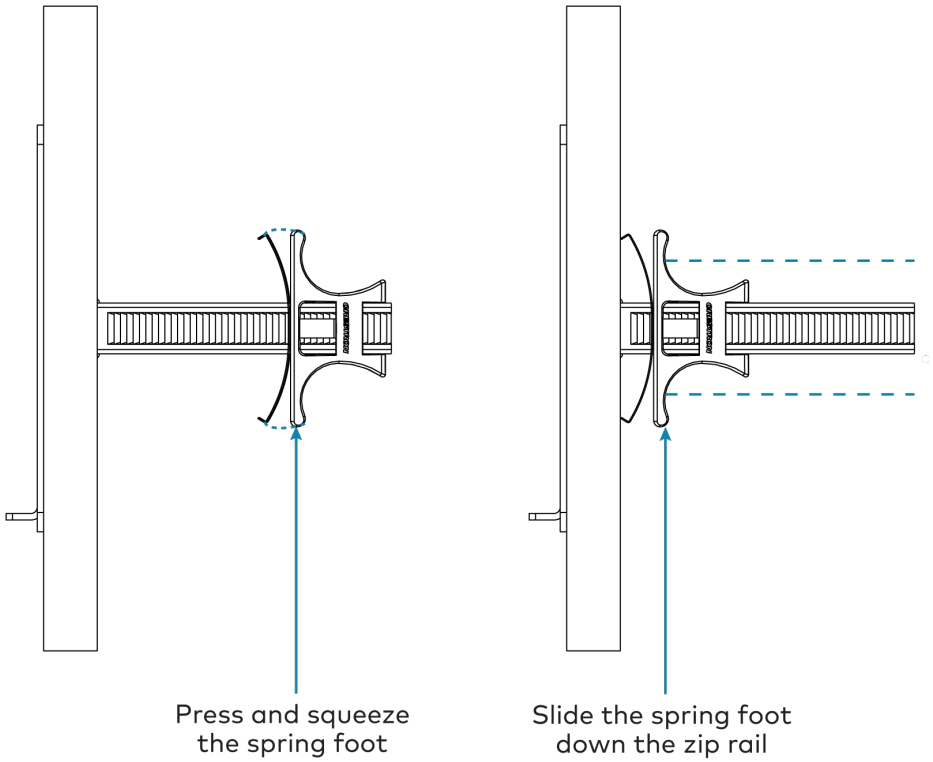


3. Ensure that the mounting bracket is level prior to tightening the spring feet.



4. Press and squeeze each spring foot, then slide it down its respective zip rail until it is firmly seated against the rear of the mounting surface.

> **CAUTION:** Do not overtighten the spring feet to the mounting surface.



NOTES:

- If the mounting bracket needs to be removed or repositioned, press the release tabs on the inside of each zip rail while pulling its attached spring foot back.
- If the WMK will be installed into a table or similar surface with an exposed underside, the zip rails can be trimmed by cutting into the relief located on each rail. Trim the zip rails only after the spring feet have been tightened to the surface.

5. Confirm that the mounting bracket is level before proceeding to attach the touch screen.

Attach the Touch Screen

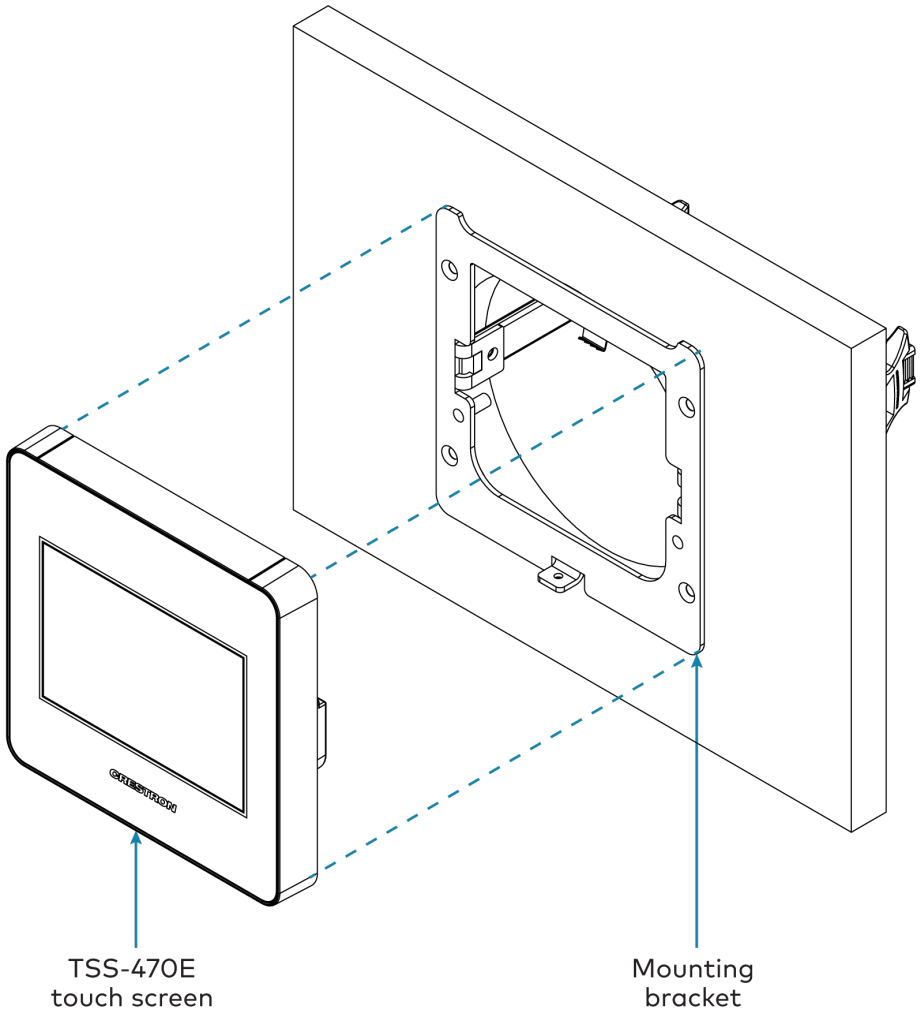
To attach the touch screen to the WMK:

1. Route all necessary cables through the opening in the mounting bracket.

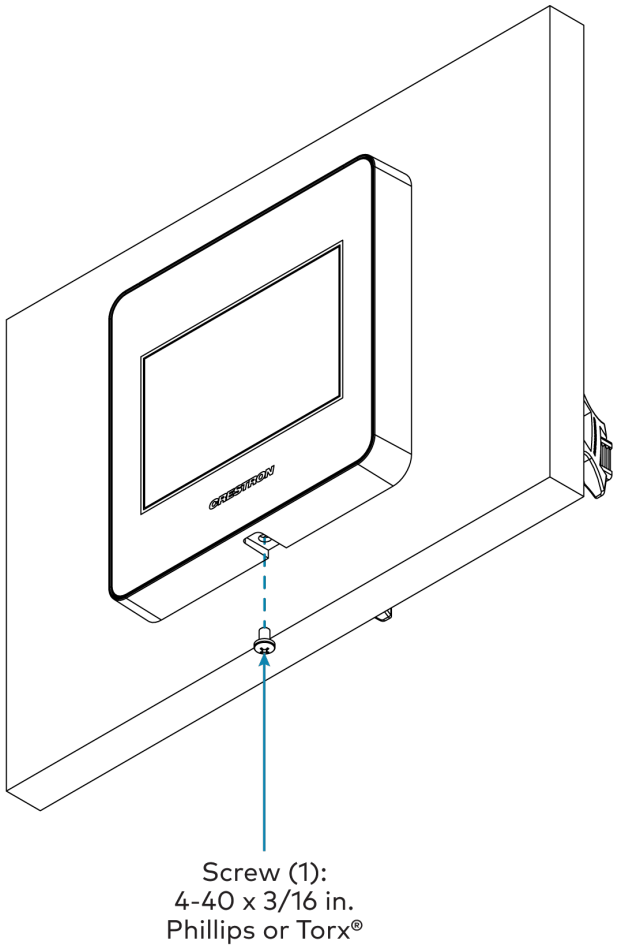
   NOTE: Do not use an Ethernet cable with a strain relief boot when connecting to the touch screen, as the cable end does not provide sufficient bend radius to support installation with the WMK.

2. Connect all cables to the rear of the touch screen.

3. Attach the touch screen to the mounting bracket, top side first, until the touch screen magnetically snaps into place against the mounting bracket.



4. (Optional) Screw either the included 4-40 x 3/16 in. Phillips screw or the Torx® security screw into the bottom of the touch screen to secure it to the WMK.



Configuration

Prior to configuration, ensure the device is running the latest firmware. To update the firmware, refer to Initial Setup on page 47.

This section provides the following information:

- Initial Setup
- Web Configuration
- Local Configuration

Initial Setup

When power is applied for the first time, the touch screen boots with a splash screen indicating that device configuration is required. This splash screen also provides the current IP address for the touch screen (if it is connected to the network over wired Ethernet) and an information button that can be tapped to show the touch screen IP address, MAC address, and serial number.

> **NOTE:** It is recommended to set up the touch screen over a wired Ethernet connection as described in Set Up an Ethernet Connection on page 49 even if it will be deployed using Wi-Fi® communications. If the touch screen must be set up over a wireless connection, the Wi-Fi network settings must first be configured using the local setup screens as described in Wi-Fi Setup on page 103.

This section provides the following information:

- Setup via XiO Cloud Service
- Setup via Device Configuration Interface

Setup via XiO Cloud Service

Use the following procedures to set up one or more TSS-470E touch screens via the XiO Cloud® service.

Connect to the XiO Cloud Service

The XiO Cloud® service allows supported devices across an enterprise to be managed and configured from one central, secure location in the cloud. Crestron Scheduling is also configured and deployed within an XiO Cloud service account. The touch screen is configured to connect to the service by default.

> **NOTE:** An XiO Cloud account is required to use the service. To register for an XiO Cloud account, refer to www.crestron.com/Support/Tools/Licensing-Registration/XiO-Account-Registration.

To connect the touch screen to the XiO Cloud service:

1. Record the MAC address and serial number that are labeled on the shipping box or the touch screen. The MAC address and serial number are required to add the touch screen to the XiO Cloud service.

   > **NOTE:** Use the MAC address that is providing the primary connection (Ethernet or Wi-Fi communications) to the network. The MAC address listed on the shipping box or touch screen is for the Ethernet adapter. The MAC address for the Wi-Fi adapter can be located using the device web configuration interface or local setup pages after a Wi-Fi connection has been established.

2. Log in to your XiO Cloud account at portal.crestron.io.
3. Claim the touch screen to the XiO Cloud service:
   - To mass provision desks or rooms and claim their associated touch screens via a CSV file, refer to XiO Cloud User Guide.
   - To claim one or more touch screens using the standard claiming workflow, refer to the XiO Cloud User Guide.

Once the touch screen is claimed, associate it with a desk or room (if it is not associated already after mass provisioning) to view its status and settings. For more information, refer to XiO Cloud User Guide

Set Up a Network Connection

The touch screen can be configured to use a static IP address over an Ethernet or Wi-Fi network connection as described in the following sections.

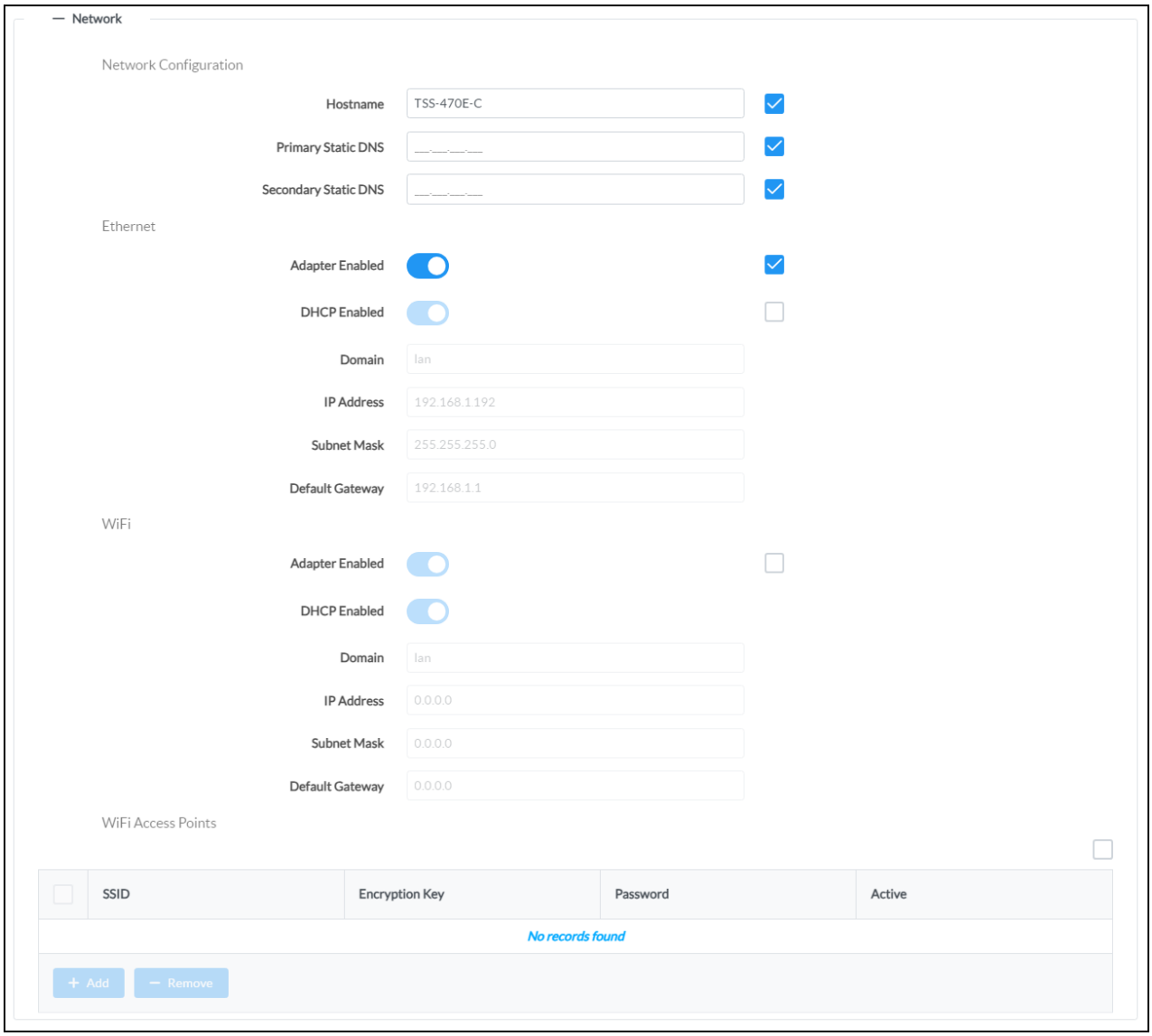
> **NOTE:** The touch screen does not support setting the same static IP address for both the Ethernet and Wi-Fi network connections.

The following sections describe how to set up a network connection using the XiO Cloud. To set up a network connection using the local setup screens, refer to Local Configuration on page 101.

Set Up an Ethernet Connection

The touch screen ships with DHCP turned on by default. To set up an Ethernet connection with a static IP address for the touch screen:

1. Navigate to and select the touch screen from the XiO Cloud environment tree to open its configuration page.
2. Navigate to **Settings** > **System Setup** > **Network** to display network settings for the touch screen.



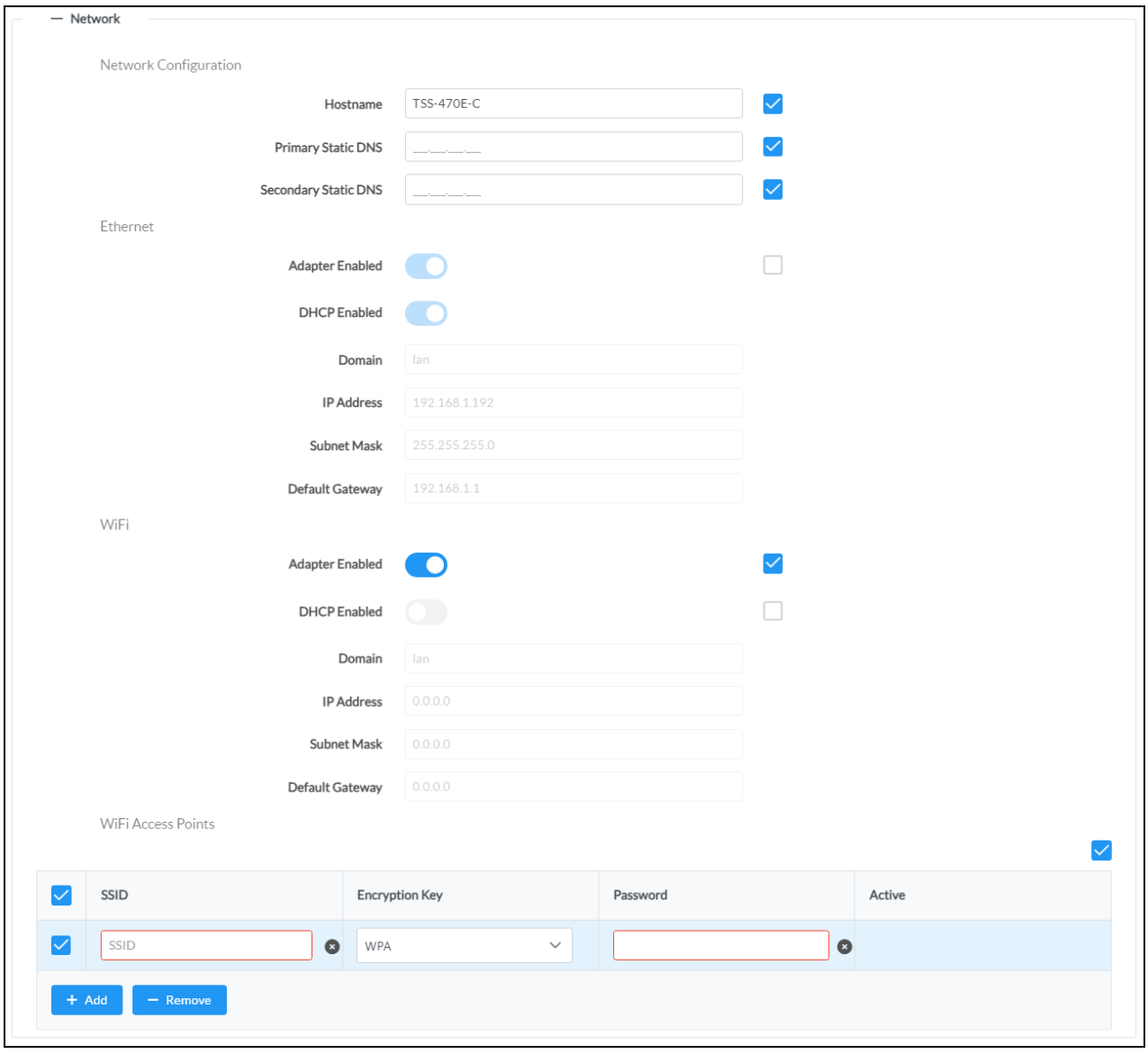
3. Turn on the **Adapter Enabled** toggle in the **Ethernet** subsection.
4. Turn off the **DHCP Enabled** toggle in the **Ethernet** subsection.
5. Enter the appropriate network information in the **Domain**, **IP Address**, **Subnet Mask**, and **Default Gateway** text fields. For more information, refer to Network on page 81.
6. Select **Save Changes** from the **Action** menu to restart the touch screen. The touch screen attempts to connect to the static IP address over the wired Ethernet connection after it restarts.

Set Up a Wi-Fi Network Connection

The touch screen ships with DHCP turned on by default. To set up a Wi-Fi network connection with a static IP address for the touch screen:

> **NOTE:** The touch screen supports the following Wireless LAN channels: 1–11, 36, 38, 40, 42, 44, 46, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165.

1. Navigate to and select the touch screen from the XiO Cloud environment tree to open its configuration page.
2. Navigate to **Settings** > **System Setup** > **Network** to display network settings for the touch screen.



3. Turn on the **Adapter Enabled** toggle in the **Wi-Fi** subsection.
4. Turn off the **DHCP Enabled** toggle in the **Wi-Fi** subsection.

5. Enter the appropriate network information in the **Domain**, **IP Address**, **Subnet Mask**, and **Default Gateway** text fields. For more information, refer to Network on page 81.
6. Add a wireless access point (WAP) to the touch screen:

   > **NOTE:** A WAP can only be added manually in XiO Cloud. Scanning the network for open WAPs can be performed using the device web configuration interface. For more information, refer to Network on page 81.

   a. Select **Add** to create a new entry in the WAP table.
   b. Enter the following information for the WAP in the appropriate fields:
      - **SSID**: Enter or modify the SSID (name) of the WAP.
      - **Encryption Key**: Select the security/encryption type used by the WAP.
      - **Password**: Enter the password used to connect to the WAP.

   > **NOTE:** No more than four WAPs can be assigned to the touch screen at once. An existing WAP must be removed before a new one can be added.

7. Select **Save Changes** from the **Action** menu to restart the touch screen. The touch screen attempts to connect to the static IP address over the selected WAP after it restarts.

Update Firmware

The touch screen firmware should always be updated to the latest version. Firmware can be loaded to the touch screen via the XiO Cloud service.

> **NOTE:** Firmware updates can also be loaded to multiple touch screens at once at the group level.

For more information on updating the touch screen firmware in XiO Cloud, refer to the XiO Cloud User Guide.

Set the Time Zone

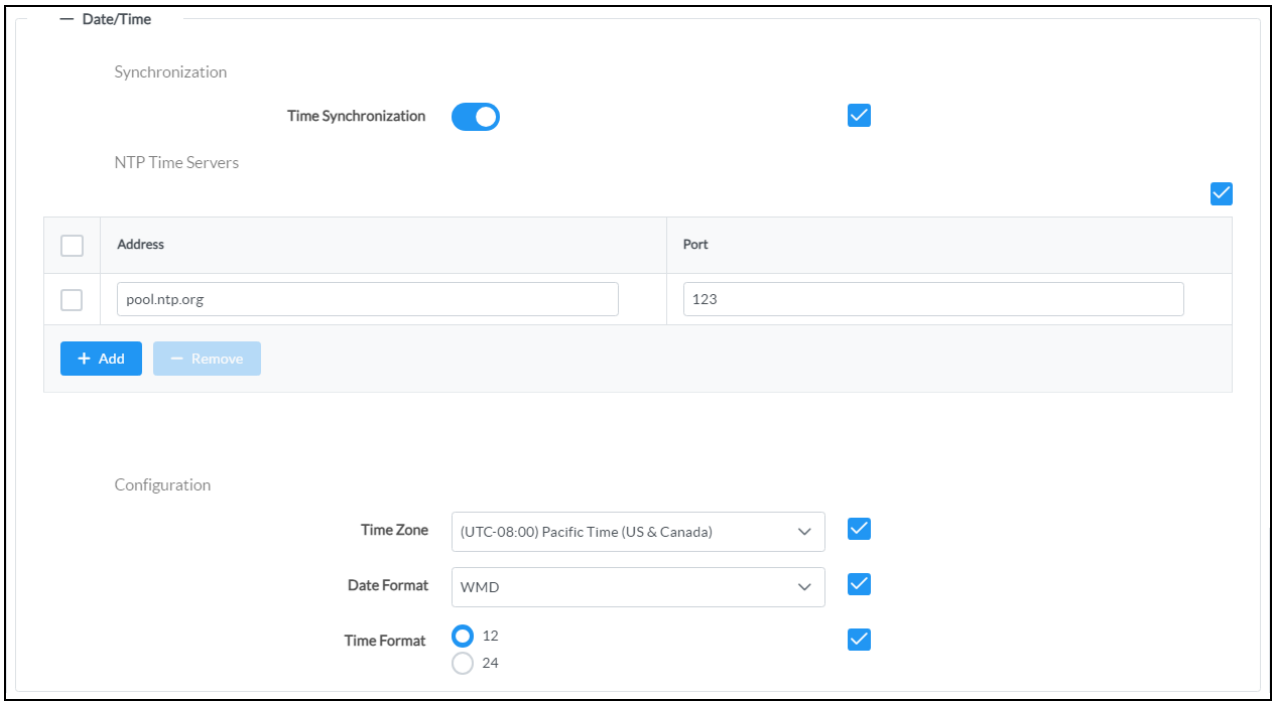
The time zone must be set on the touch screen prior to selecting a scheduling application.

> **NOTE:** Time zone settings can be pushed to multiple touch screens at once at the group level.

To set the time zone:

1. Navigate to and select the touch screen from the XiO Cloud environment tree to open its configuration page.

2. Navigate to **Settings** > **System Setup** > **Date/Time** to display date and time settings for the touch screen.



3. Select the time zone where the touch screen will be used from the **Time Zone** drop-down menu.
4. Select **Save Changes** on the top right of the page.

Select a Scheduling Application

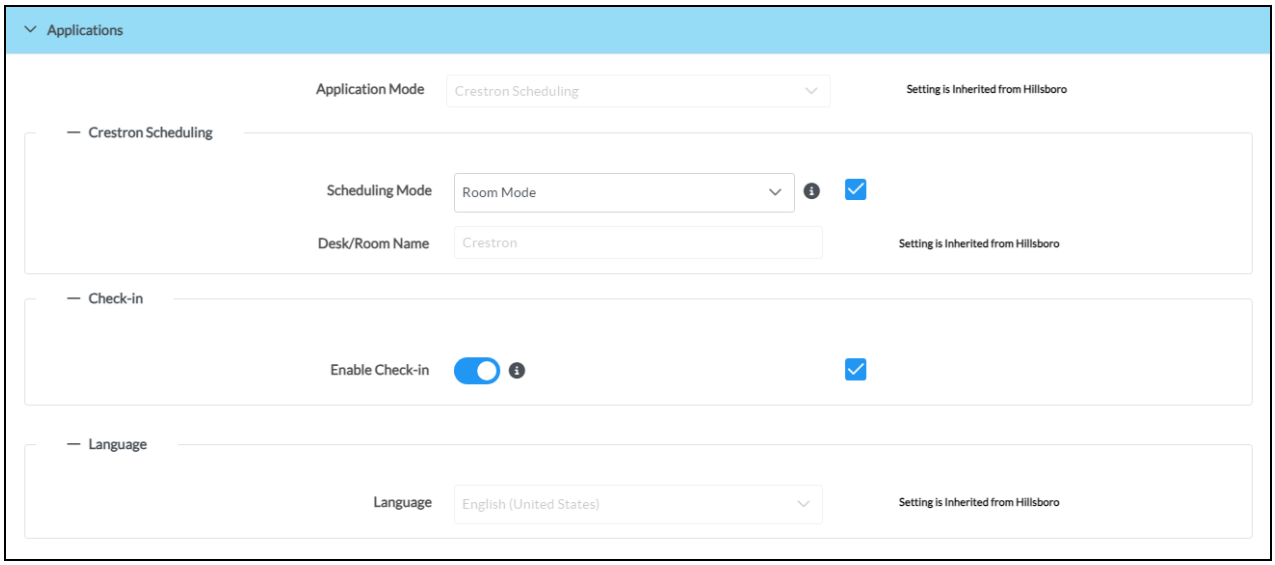
The touch screen ships with various built-in scheduling applications. An application may be selected from the web configuration interface.

> **NOTE:** Application settings can be pushed to multiple touch screens at once at the group level.

To select a scheduling application:

1. Navigate to and select the touch screen from the XiO Cloud environment tree to open its configuration page.

2. Navigate to **Settings** > **Applications** to display application settings for the touch screen.



3. Select the desired scheduling provider from the **Application Mode** drop-down menu.
4. Enter any additional information (such as selecting a language or setting a desk/room name) that is required for connecting to the scheduling provider.

   NOTE: If **Crestron Scheduling** is selected for **Application Mode**, the application can be set to run in desk mode or room mode depending on the desired scheduling use case. For more information on operating these modes, refer to Operation on page 126.

5. Select **Save Changes** on the top right of the page.
6. When prompted, restart the touch screen. The touch screen restarts with the selected scheduling application running.

Connect to a Scheduling Calendar

Use the following procedures to connect the Crestron Scheduling app to a supported scheduling calendar.

NOTE: Certain scheduling calendar settings can be pushed to multiple touch screens at once at the group level.

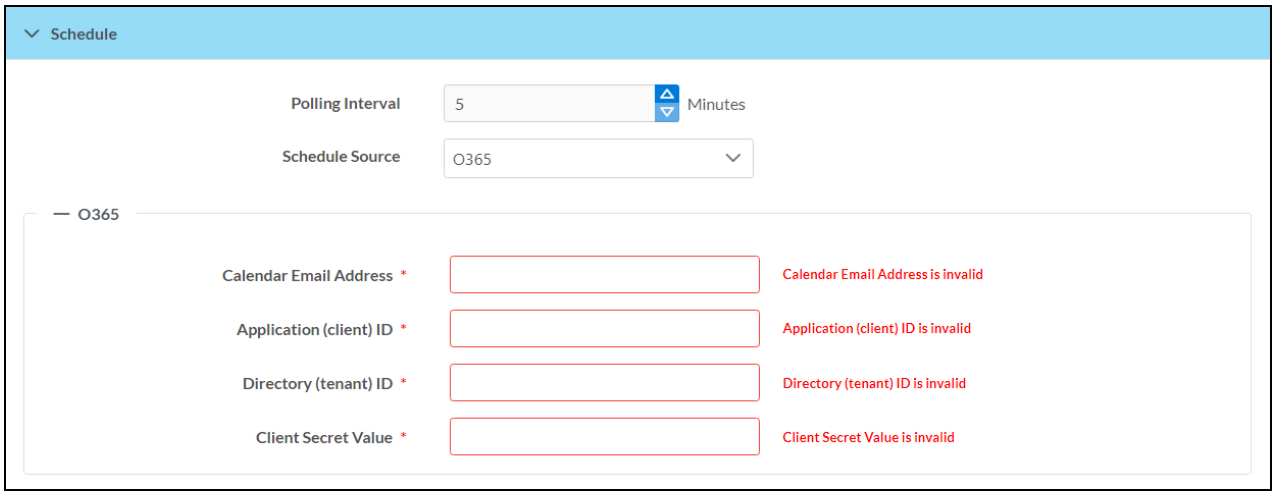
Connect to Office 365 Using Microsoft Graph

To connect to an Office 365 scheduling calendar using Microsoft Graph:

NOTES:

- The Office 365 account and scheduling calendar must be fully configured before the scheduling calendar shows as online. Each touch screen requires its own unique calendar email address.
- Additional registration steps are required in the Microsoft Entra® portal. Refer to Configure Microsoft Graph for Crestron Scheduling on page 110 for more information.
- Only one Microsoft Graph application is required for all touch screens running the Crestron Scheduling app within the same Microsoft Entra tenant. The Microsoft Graph application credentials (outside of the calendar email address) can be reused all touch screens within the same deployment.

1. Navigate to and select the touch screen from the XiO Cloud environment tree to open its configuration page.
2. Navigate to **Settings** > **Schedule** to display scheduling calendar settings for the touch screen.
3. Configure the desired **Polling Interval** settings. For more information, refer to Schedule on page 86.
4. Select **O365** from the **Schedule Source** drop-down menu.



5. Enter the following Office 365 account information:

NOTE: The **Application (client) ID**, **Directory (tenant) ID**, and **Client Secret Value** values are generated within the Microsoft Entra portal for the Microsoft Entra app. For more information, refer to Configure Microsoft Graph for Crestron Scheduling on page 110.

   - Enter the email address associated with the Office 365 scheduling calendar in the **Calendar Email Address** text field.

- Enter the application (client) ID generated for the Microsoft Entra app in the **Application (client) ID** text field.
- Enter the directory (tenant) ID generated for the Microsoft Entra app in the **Directory (tenant) ID** text field.
- Enter the client secret value generated for the Microsoft Entra app in the **Client Secret Value** text field.

6. Select **Save Changes** from the **Action** menu. The Office 365 scheduling calendar connects to the scheduling application without requiring a restart.

Setup via Device Configuration Interface

Use the following procedures to set up an individual TSS-470E using its configuration interfaces.

Access a Configuration Interface

Device settings can be configured using the touch screen's web configuration interface. Additionally, a subset of device settings can be configured using the touch screen's local setup screens.

Access the Web Configuration Interface

To access the web configuration interface using the touch screen IP address:

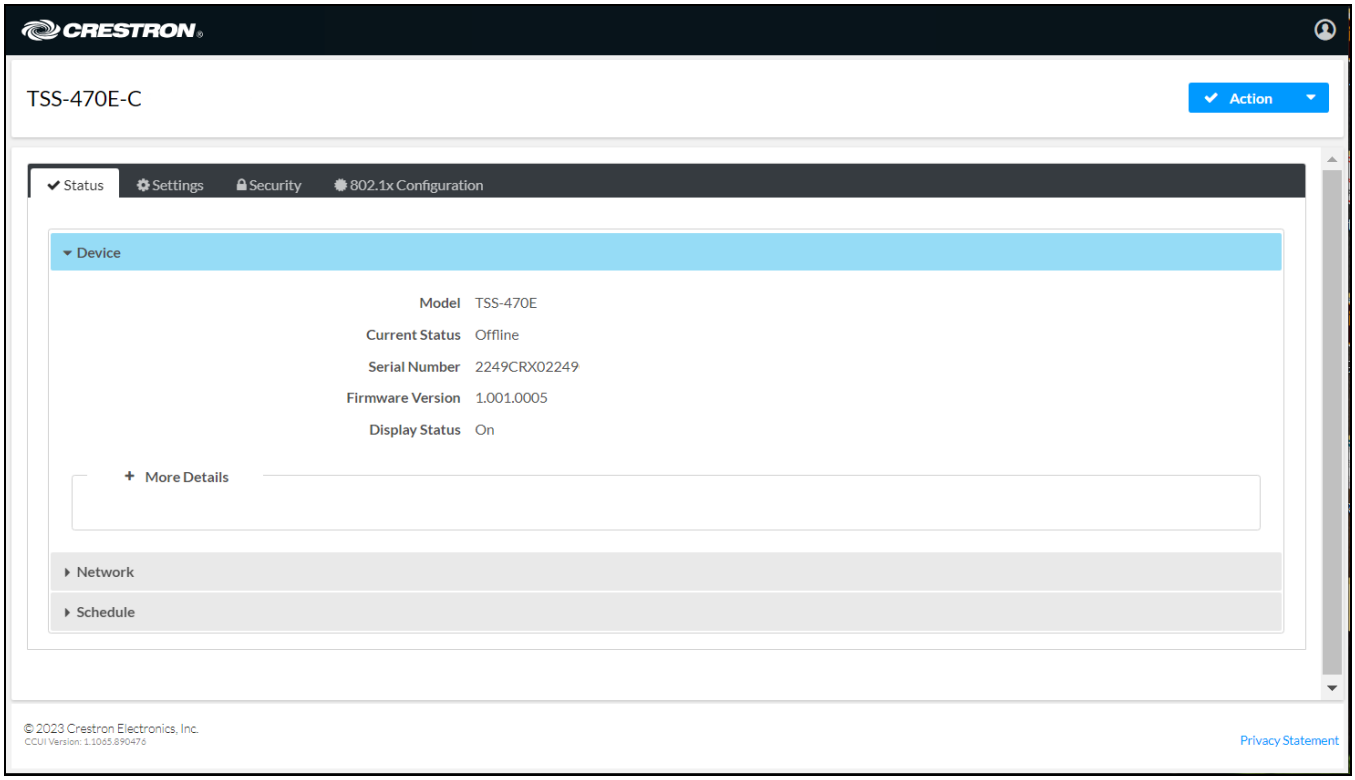
> **NOTE:** The touch screen ships with DHCP turned on. A DHCP server is required to access the web configuration interface via the touch screen IP address. A static IP address can be configured for the touch screen as described in Set Up a Network Connection on page 59.

1. Connect the touch screen to the Ethernet network.
2. Locate the touch screen IP address. The IP address is shown on the splash screen that is displayed after booting the touch screen for the first time. Additionally, the **Device Discovery** tool in Crestron Toolbox™ software can be used to discover the touch screen IP address.

   > **NOTE:** Crestron Toolbox software can only be used to discover the touch screen IP address on the network. The touch screen does not support device configuration or any other related functions via Crestron Toolbox.

3. Enter the touch screen IP address into a web browser.
4. If connecting to the touch screen for the first time, create an admin account as described in Create an Admin Account on page 58.
5. Enter the admin account login credentials when prompted, then select **Sign In**.

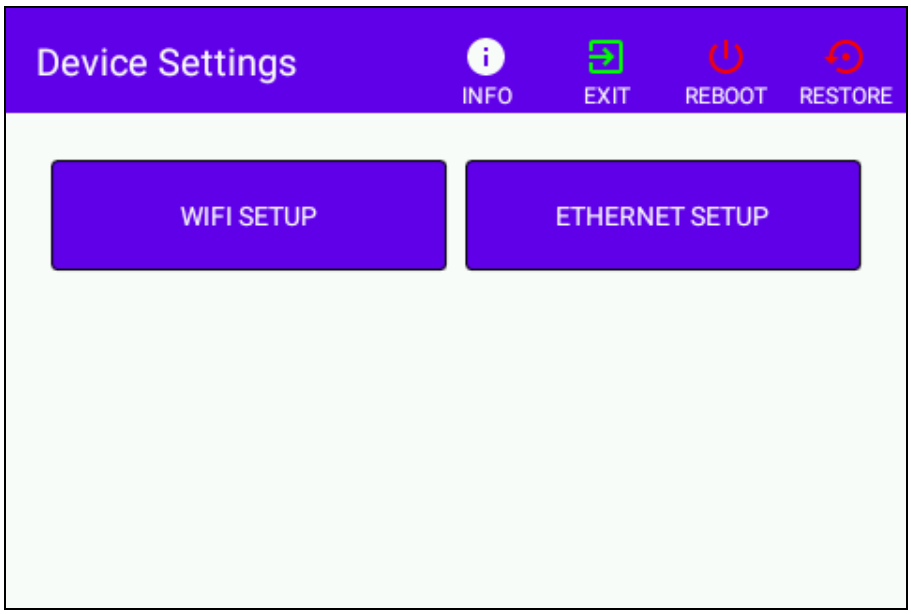
The touch screen web configuration is displayed with the **Status** tab shown and the **Device** accordion open by default. For more information on using the web configuration interface, refer to Web Configuration on page 69.



Access the Local Setup Screens

To access the local setup screens, place three fingers on the touch screen display and hold for 5 seconds.

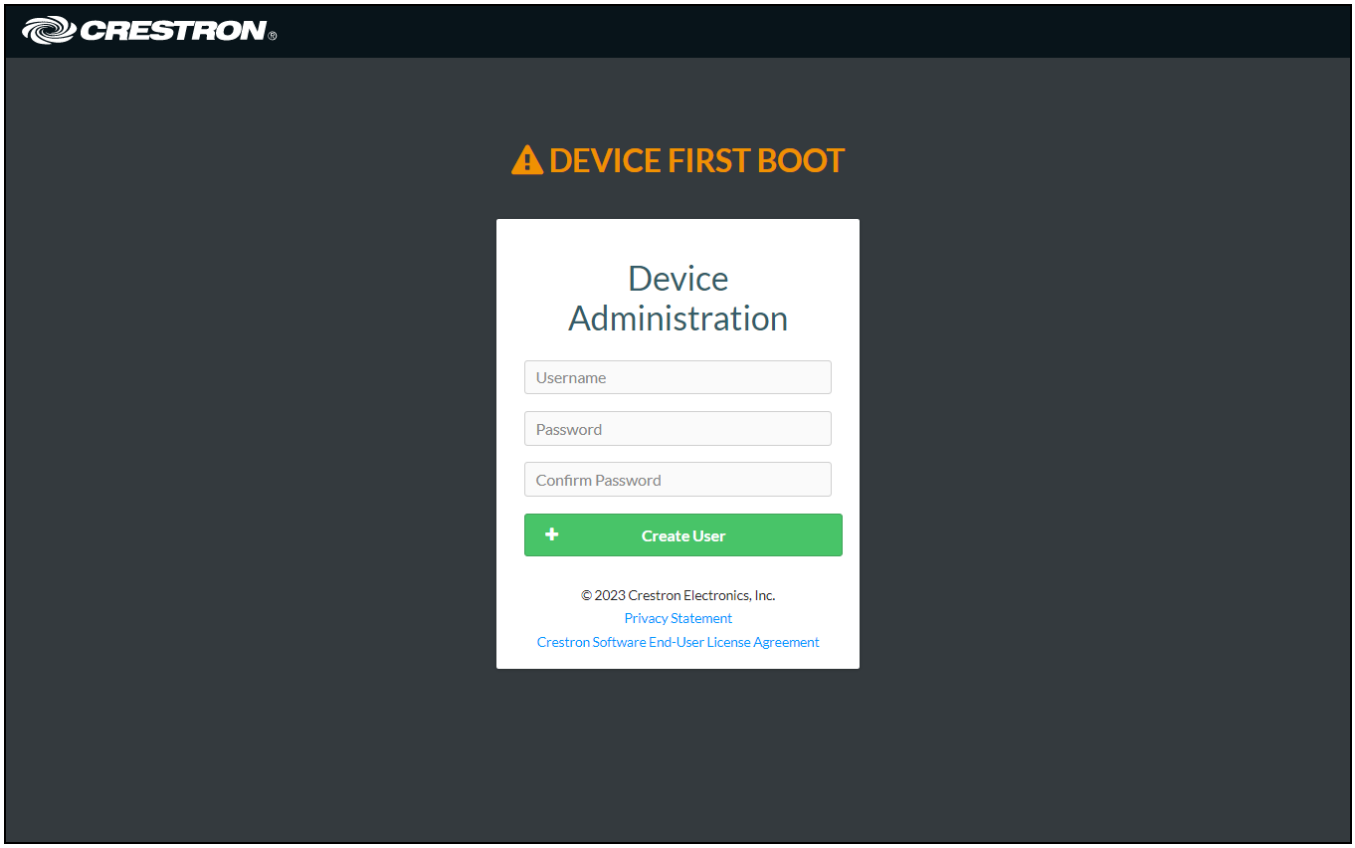
The **Device Settings** screen is displayed. For more information on using the local setup screens, refer to Local Configuration on page 101.



Create an Admin Account

The first time the web configuration interface is accessed, a page is displayed asking the user to create an admin account. A similar prompt is displayed when connecting to the touch screen via the local setup pages or in Crestron Toolbox software if an admin account has not already been created.

> **NOTE:** The admin account for the touch screen is not related to an XiO Cloud admin account.

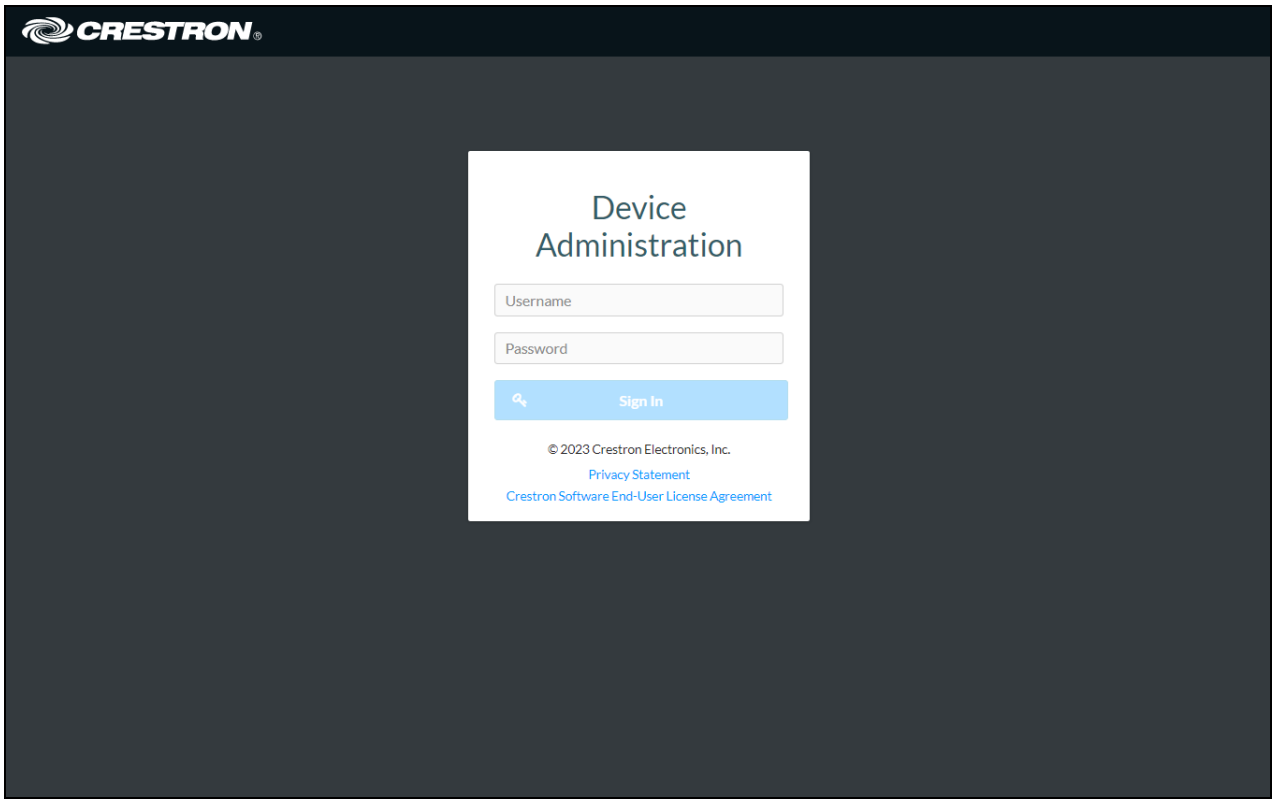


To create an admin account:

1. Enter a username and password for the admin account in the appropriate text fields.

   > **CAUTION:** Do not lose the username and password for the admin account, as the touch screen must be reset to factory settings to regain access.

2. Select **Create User** to create the admin account. The web configuration interface refreshes to show the standard login page.



3. Reenter the credentials created in step 1 and select **Sign In** to access the web configuration interface.

Set Up a Network Connection

The touch screen can be configured to use a static IP address over an Ethernet or Wi-Fi network connection as described in the following sections.

> **NOTE:** The touch screen does not support setting the same static IP address for both the Ethernet and Wi-Fi network connections.

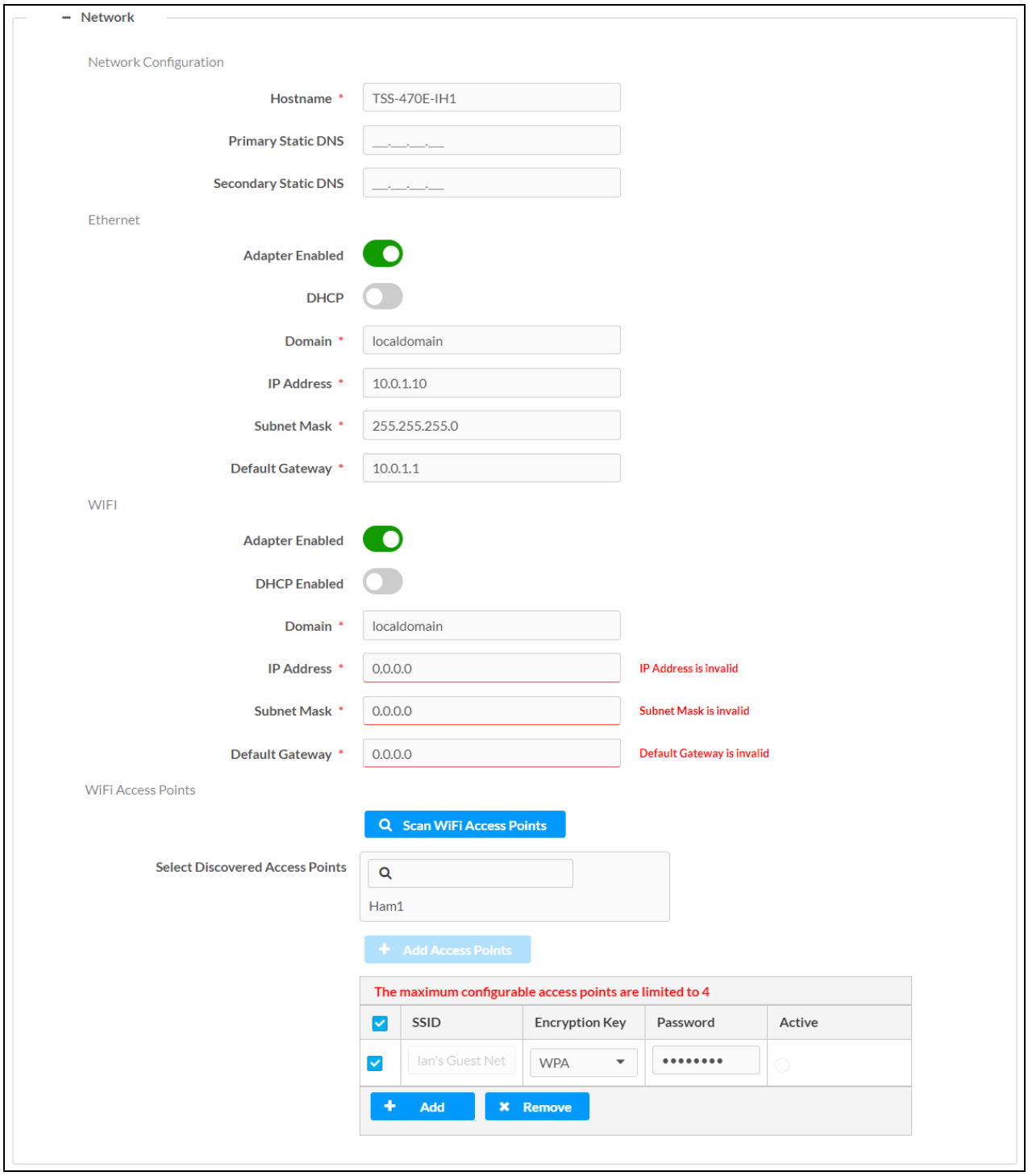
The following sections describe how to set up a network connection using the web configuration interface. To set up a network connection using the local setup screens, refer to Local Configuration on page 101.

Set Up an Ethernet Connection

The touch screen ships with DHCP turned on by default. To set up an Ethernet connection with a static IP address for the touch screen:

1. Access the device configuration interface as described in Setup via Device Configuration Interface on page 56.

2. Navigate to **Settings** > **System Setup** > **Network** to display network settings for the touch screen.



3. Turn on the **Adapter Enabled** toggle in the **Ethernet** subsection.
4. Turn off the **DHCP Enabled** toggle in the **Ethernet** subsection.
5. Enter the appropriate network information in the **Domain**, **IP Address**, **Subnet Mask**, and **Default Gateway** text fields. For more information, refer to Network on page 81.

6. Select **Save Changes** from the **Action** menu to restart the touch screen. The touch screen attempts to connect to the static IP address over the wired Ethernet connection after it restarts.

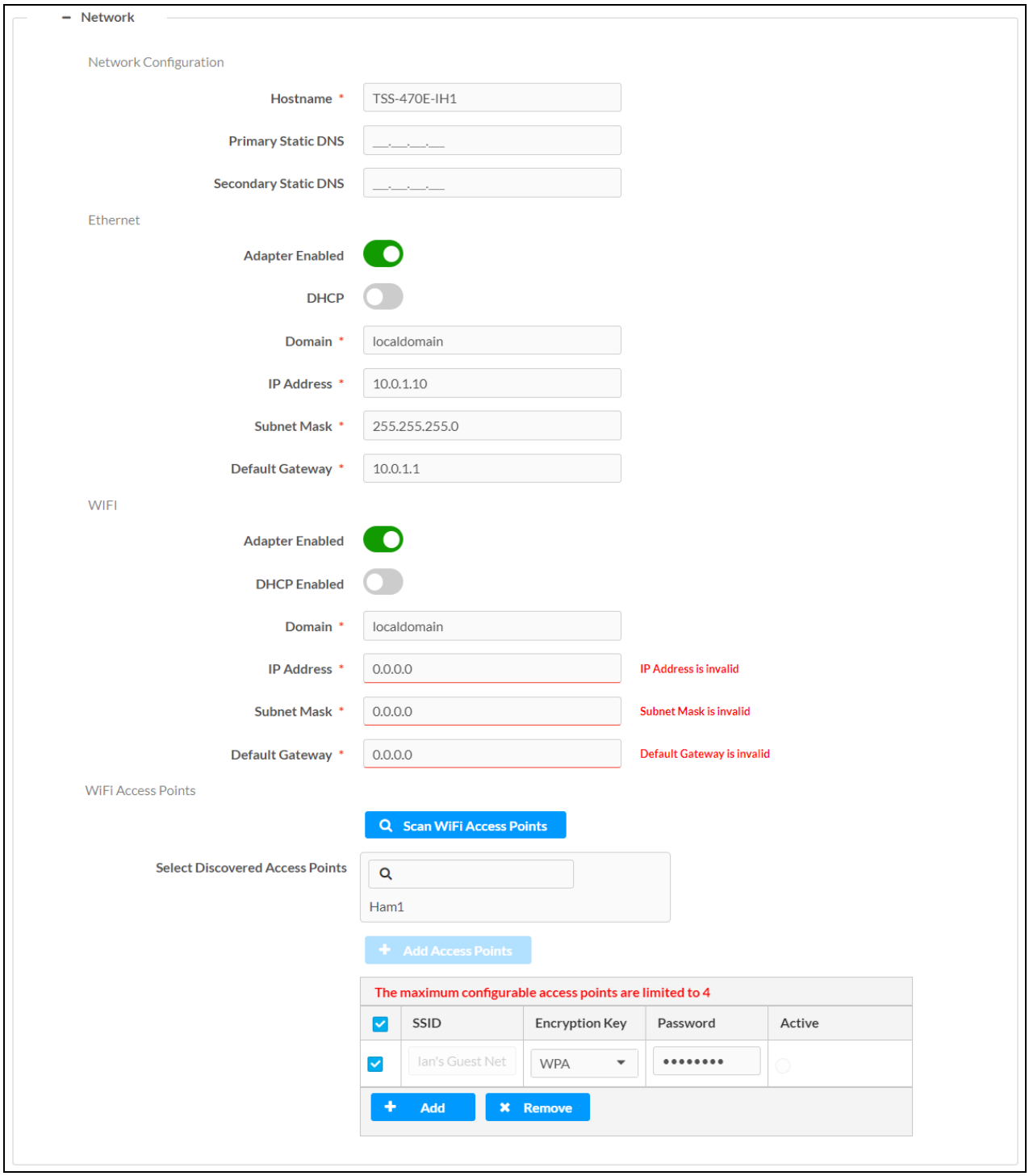
Set Up a Wi-Fi Network Connection

The touch screen ships with DHCP turned on by default. To set up a Wi-Fi network connection with a static IP address for the touch screen:

> **NOTE:** The touch screen supports the following Wireless LAN channels: 1–11, 36, 38, 40, 42, 44, 46, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165

1. Access the device configuration interface as described in Setup via Device Configuration Interface on page 56.

2. Navigate to **Settings** > **System Setup** > **Network** to display network settings for the touch screen.



3. Turn on the **Adapter Enabled** toggle in the **Wi-Fi** subsection.
4. Turn off the **DHCP Enabled** toggle in the **Wi-Fi** subsection.
5. Enter the appropriate network information in the **Domain**, **IP Address**, **Subnet Mask**, and **Default Gateway** text fields. For more information, refer to Network on page 81.

6. Add a wireless access point (WAP) to the touch screen:
    a. Select **Scan Wi-Fi Access Points** in the **Wi-Fi Access Points** subsection to scan the network for open WAPs. All discovered access points are displayed within the **Select Discovered Access Points** menu.
    b. Select a discovered WAP from the **Select Discovered Access Points** menu, and then select **Add Access Point**. The WAP is added to the table below this setting with its **SSID** and **Encryption Key** settings populated.

        > **NOTE:** A WAP can also be manually entered by selecting **Add** below the provided table. For more information, refer to Network on page 81.

    c. Enter the password for the selected WAP in the **Password** text field within the appropriate table row.
7. Select **Save Changes** from the **Action** menu to restart the touch screen. The touch screen attempts to connect to the static IP address over the selected WAP after it restarts.

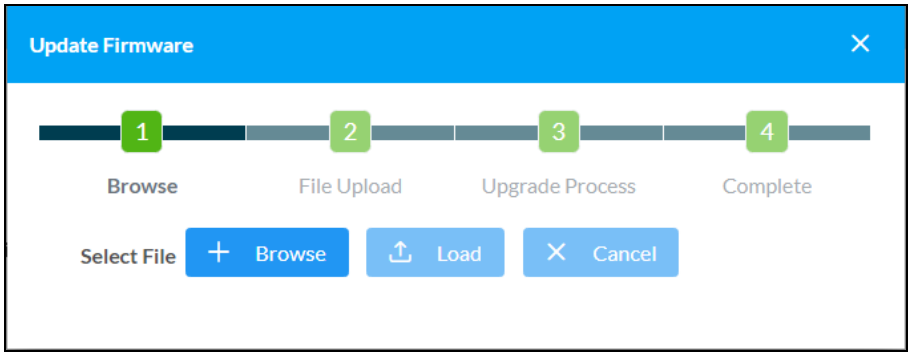
Update Firmware

The touch screen firmware should always be updated to the latest version. Firmware can be loaded to the touch screen via the web configuration interface.

> **NOTE:** Automatic firmware updates can also be configured for the touch screen. For more information, refer to Auto Update on page 85.

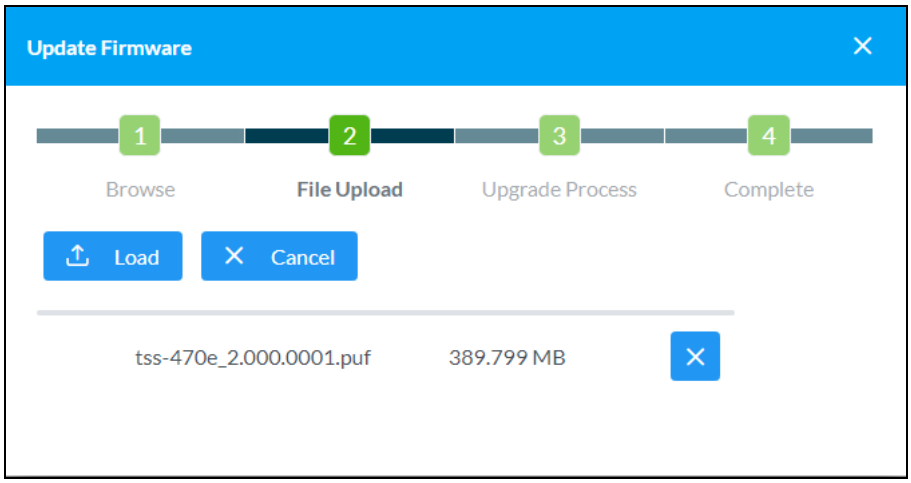
To update the touch screen firmware:

1. Download the latest firmware PUF (package update file) from the TSS-470E product page or www.crestron.com/Support/Resource-Library.
2. Access the web configuration interface as described in Access the Web Configuration Interface on page 56.
3. Select **Update Firmware** from the **Action** drop-down menu on the top right of the page. The **Update Firmware** dialog box is displayed.



4. Select **Browse**, and then navigate to the firmware PUF on the local computer.

5. Select the firmware PUF, and then select **Open**. The PUF is shown in the dialog box.



6. Select **Load** to load the PUF to the touch screen. The load progress is shown in the dialog box. The touch screen begins the firmware update automatically once the PUF is loaded.
7. Once the touch screen has completed the firmware update, select **OK** to close the dialog box.

Select the **x** button to close the **Firmware Update** dialog box at any time during the update. Selecting the **x** button before the PUF is loaded to the touch screen cancels the update.

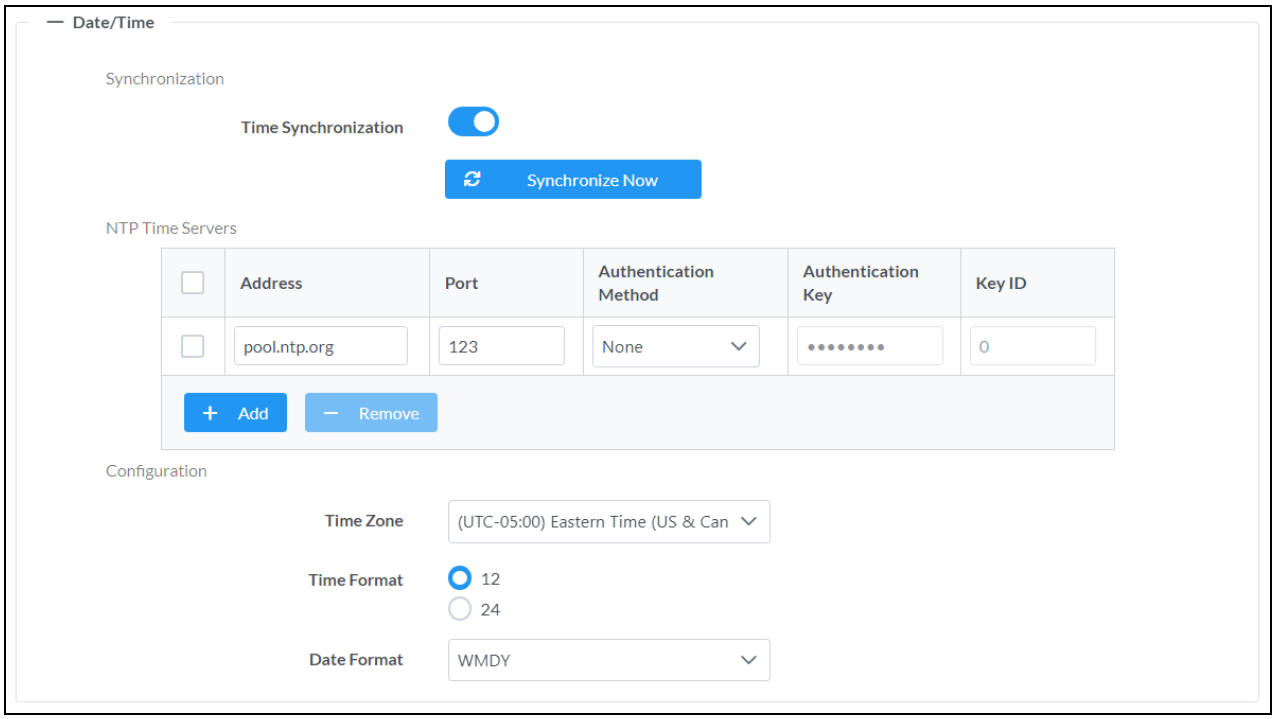
Set the Time Zone

The time zone must be set on the touch screen prior to selecting a scheduling application.

To set the time zone:

1. Access the web configuration interface as described in Access the Web Configuration Interface on page 56.
2. Navigate to **Settings** > **System Setup**.

3. Expand the **Date/Time** subsection to display date and time settings.



4. Select the time zone where the touch screen will be used from the **Time Zone** drop-down menu.
5. Select **Save Changes** on the top right of the page.

Select a Scheduling Application

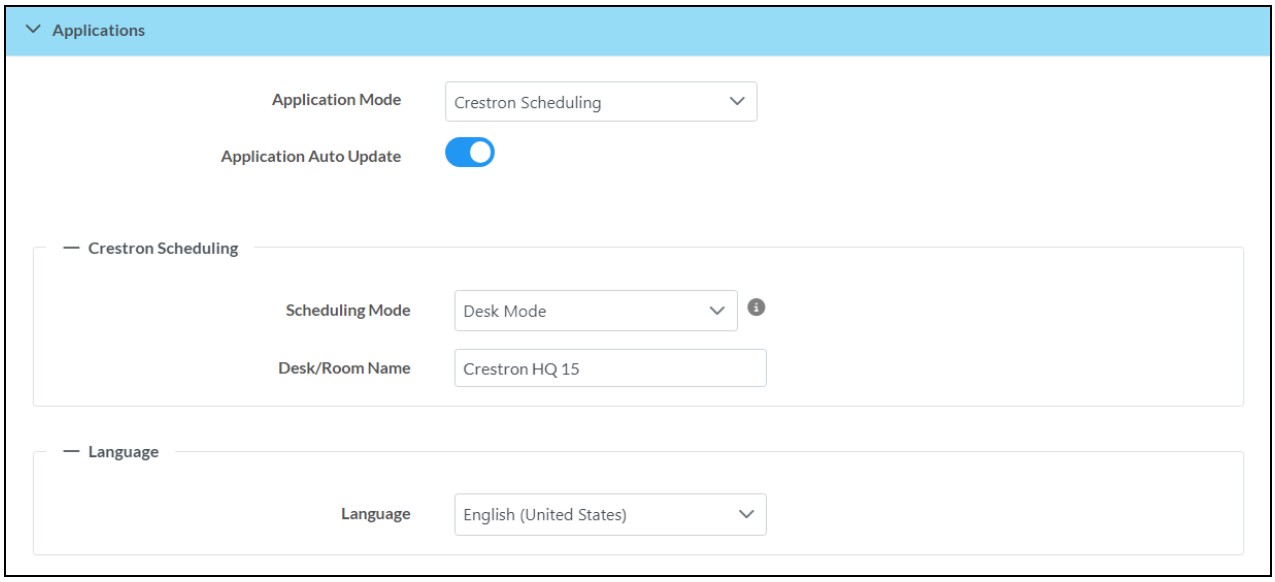
The touch screen ships with various built-in scheduling applications. An application may be selected from the web configuration interface.

> **NOTE:** Applications can be selected and configured from the web configuration interface at any time. For more information, refer to Applications on page 91.

To select a scheduling application:

1. Access the web configuration interface as described in Access the Web Configuration Interface on page 56.

2. Navigate to **Settings** > **Applications**.



3. Select the desired scheduling provider from the **Application Mode** drop-down menu.
4. If desired, turn on the **Application Auto Update** toggle to allow for automatic updates of the selected application.

> **NOTE:** Ensure **Application Auto Update** is turned on before switching to a third-party application. The application may not download to the touch screen if **Application Auto Update** is turned off.

5. Enter any additional information (such as selecting a language or setting a desk/room name) that is required for connecting to the scheduling provider.

> **NOTE:** If **Crestron Scheduling** is selected for **Application Mode**, the application can be set to run in desk mode or room mode depending on the desired scheduling use case. For more information on operating these modes, refer to Operation on page 126.

6. Select **Save Changes** on the top right of the page.
7. When prompted, restart the touch screen. The touch screen restarts with the selected scheduling application running.

Connect to a Scheduling Calendar

Use the following procedures to connect the Crestron Scheduling app to a supported scheduling calendar.

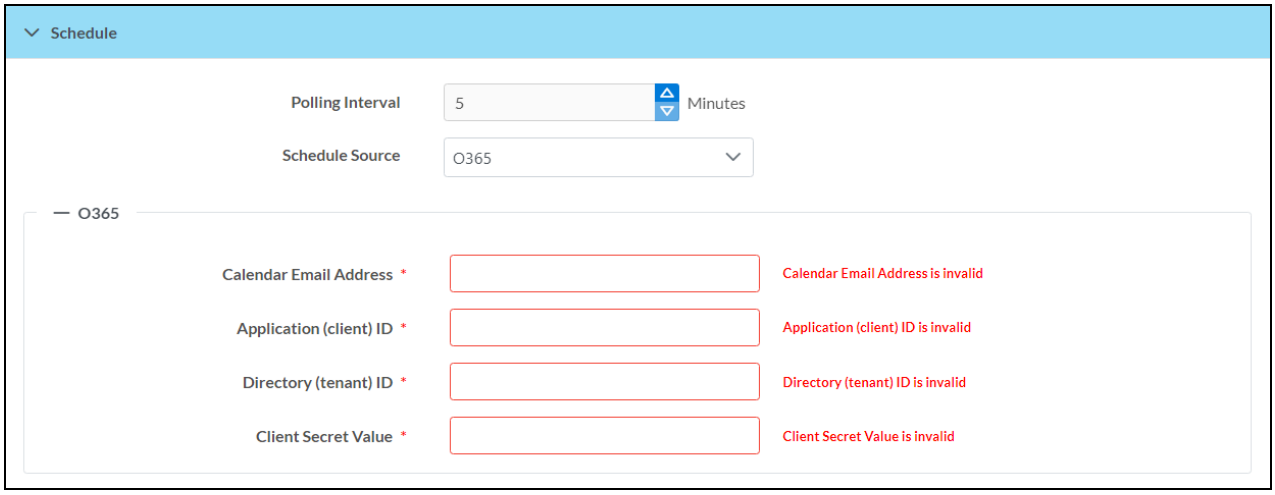
Connect to Office 365 Using Microsoft Graph

To connect to an Office 365 scheduling calendar using Microsoft Graph:

NOTES:

- The Office 365 account and scheduling calendar must be fully configured before the scheduling calendar shows as online. Each touch screen requires its own unique calendar email address.
- Additional registration steps are required in the Microsoft Entra® portal. Refer to Configure Microsoft Graph for Crestron Scheduling on page 110 for more information.
- Only one Microsoft Graph application is required for all touch screens running the Crestron Scheduling app within the same Microsoft Entra tenant. The Microsoft Graph application credentials (outside of the calendar email address) can be reused all touch screens within the same deployment.

1. Navigate to **Settings** > **Schedule**.
2. Configure the desired **Polling Interval** settings. For more information, refer to Schedule on page 86.
3. Select **O365** from the **Schedule Source** drop-down menu.



4. Enter the following Office 365 account information:

NOTE: The **Application (client) ID**, **Directory (tenant) ID**, and **Client Secret Value** values are generated within the Microsoft Entra portal for the Microsoft Entra app. For more information, refer to Configure Microsoft Graph for Crestron Scheduling on page 110.

   - Enter the email address associated with the Office 365 scheduling calendar in the **Calendar Email Address** text field.

- Enter the application (client) ID generated for the Microsoft Entra app in the **Application (client) ID** text field.
- Enter the directory (tenant) ID generated for the Microsoft Entra app in the **Directory (tenant) ID** text field.
- Enter the client secret value generated for the Microsoft Entra app in the **Client Secret Value** text field.

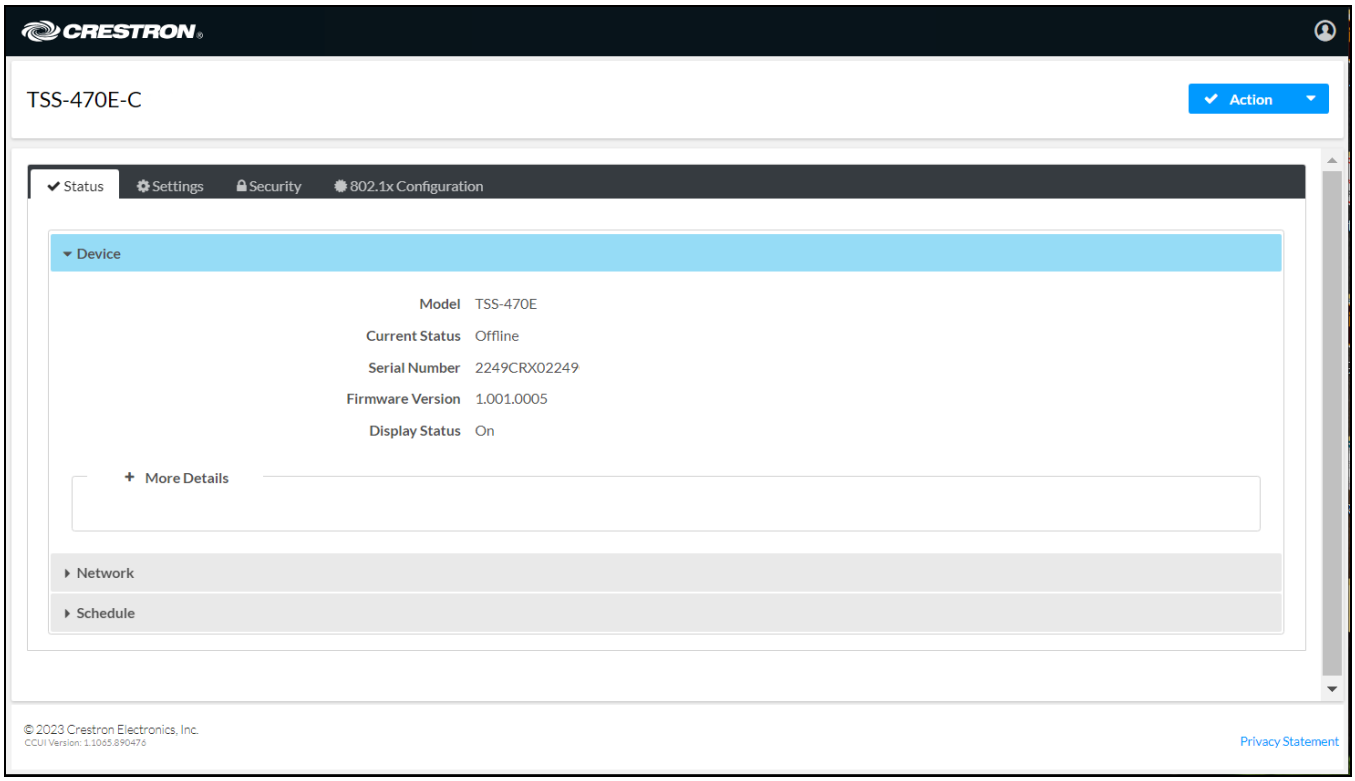
5. Select **Save Changes** from the **Action** menu. The Office 365 scheduling calendar connects to the scheduling application without requiring a restart.

Web Configuration

The touch screen may be monitored and configured using its web configuration interface. The interface can be accessed via the touch screen IP address as described in Access the Web Configuration Interface on page 56.

> **NOTE:** A similar version of the web configuration interface is provided within the XiO Cloud service. Navigate to the desk associated with the touch screen in the XiO Cloud environment tree to view the touch screen status and settings. Additionally, certain settings can be configured for multiple touch screens at once at the group level. For more information, refer to the XiO Cloud User Guide.

The **Status** tab is shown with the **Device** accordion open by default.



The web configuration interface provides the following tabs for navigating the interface:

- **Status**: Select this tab to monitor the status of the touch screen and the scheduling application. For more information, refer to Status on page 74.
- **Settings**: Select this tab to configure settings for the touch screen and the scheduling application. For more information, refer to Settings on page 77.
- **Security**: Select this tab to create touch screen users and groups. For more information, refer to Security on page 93.
- **802.1x Configuration**: Select this tab to configure IEEE 802.1X network authentication for touch screen security. For more information, refer to 802.1x Configuration on page 99.

NOTE: Some device settings may be displayed or hidden depending on the selected application mode.

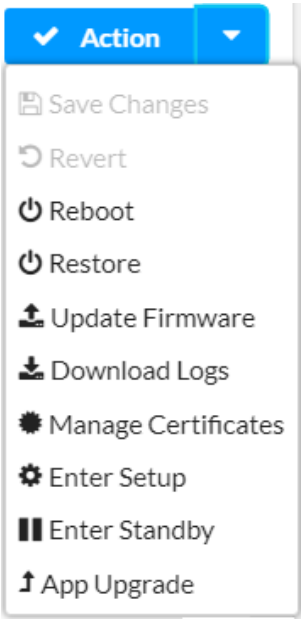
The following controls are also provided on the top right of the web configuration interface:

- Use the **Action** drop-down menu to perform various configuration actions. For more information, refer to Action Menu on page 70.
- Select the profile button to see the active touch screen user and to sign out of the web configuration utility.

Each section of the web configuration interface is described in the sections that follow.

Action Menu

The web configuration interface provides an **Action** drop-down menu on the top right of the page. The **Action** menu may be accessed at any time.



After any changes have been made that require a setting to be saved, the **Action** button changes to a **Save Changes** button. Select **Save Changes** to save the setting. Saving certain changes will require the touch screen to be restarted.

The **Action** menu provides the following selections.

Save Changes

Select **Save Changes** to save any changes made to the configuration settings.

Revert

Select **Revert** to revert the touch screen back to the last saved configuration settings.

Reboot

Select **Reboot** to restart the touch screen.

After **Reboot** is selected, a dialog box is displayed asking whether the touch screen should be restarted. Select **Yes** to restart the touch screen or **No** to cancel the restart.

Restore

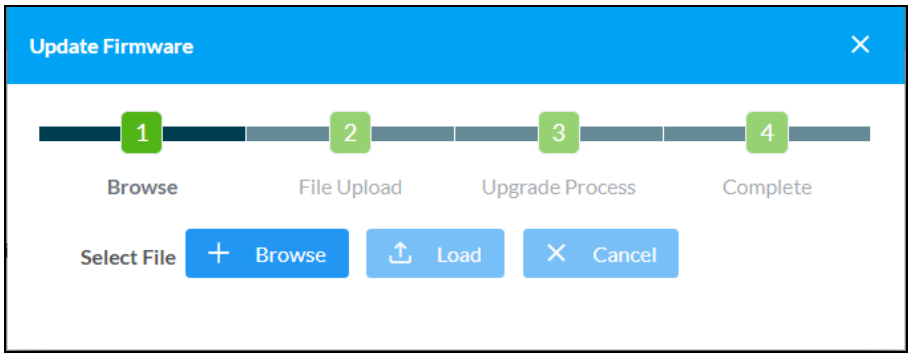
Select **Restore** to restore the touch screen settings to their default values.

After **Restore** is selected, a dialog box is displayed asking whether the touch screen should be restored. Select **Yes** to restore the touch screen or **No** to cancel the restore.

> **CAUTION:** Performing a restore returns all touch screen settings to their default values (except for application settings) but retains any Wi-Fi access points (WAPs) that were previously added. To perform a factory restore that also removes any previously-added WAPs, refer to Perform a Factory Restore on page 125.

Update Firmware

Select **Update Firmware** to update the touch screen firmware manually with a downloaded PUF (package update file). The **Update Firmware** dialog box is displayed.



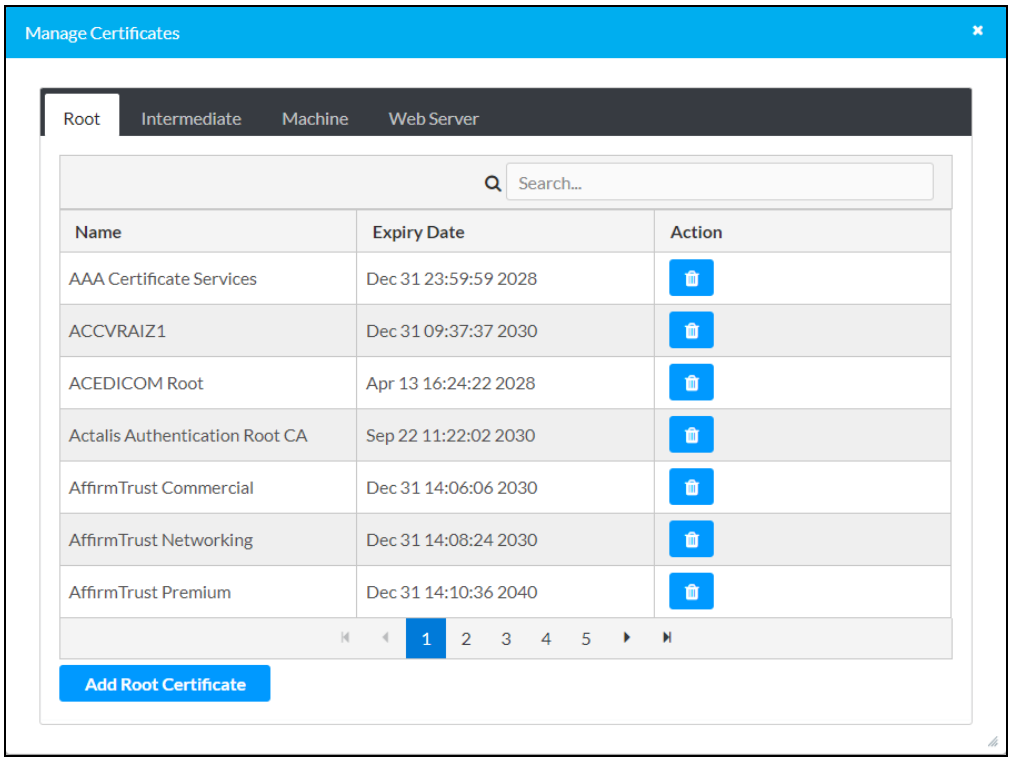
For more information on updating the touch screen firmware, refer to Update Firmware on page 63.

Download Logs

Select **Download Logs** to download the touch screen message logs for diagnostic purposes. The message files download as a compressed .tgz file. Once the compressed file is downloaded, extract the message log files to view them.

Manage Certificates

Select **Manage Certificates** to manage any certificates that are installed on the touch screen. The **Manage Certificates** dialog box is displayed.



Select the tabs near the top of the page to switch between the different types of CAs (**Root**, **Intermediate**, **Machine**, or **Web Server**). The same settings are provided for each type of CA.

The following information is provided for each type of CA:

- **Name**: The CA name
- **Expiry Date**: The date and time that the CA is set to expire

Type a search term into the **Search** text field to search for and display CAs that match the search term. If the CAs span multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page.

An **Action** column is also provided for each CA that allows various actions to be performed. The following selections may be selected from the **Action** column.

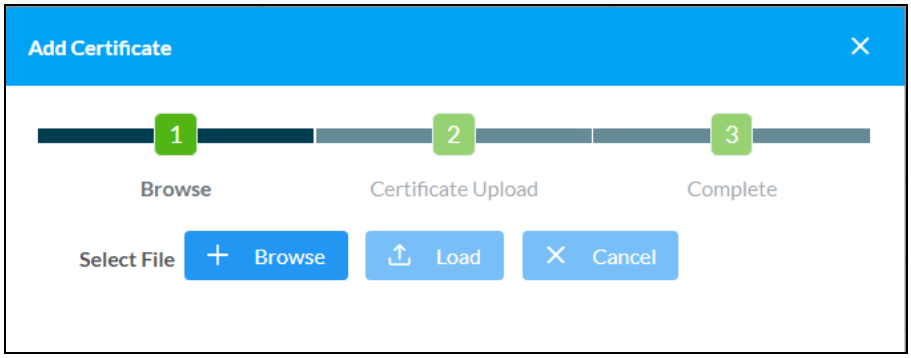
Delete Certificate

Select the trashcan icon in the **Action** column to delete the certificate.

A dialog box is displayed asking whether the certificate should be deleted. Select **Yes** to delete the group or **No** to cancel deleting the group.

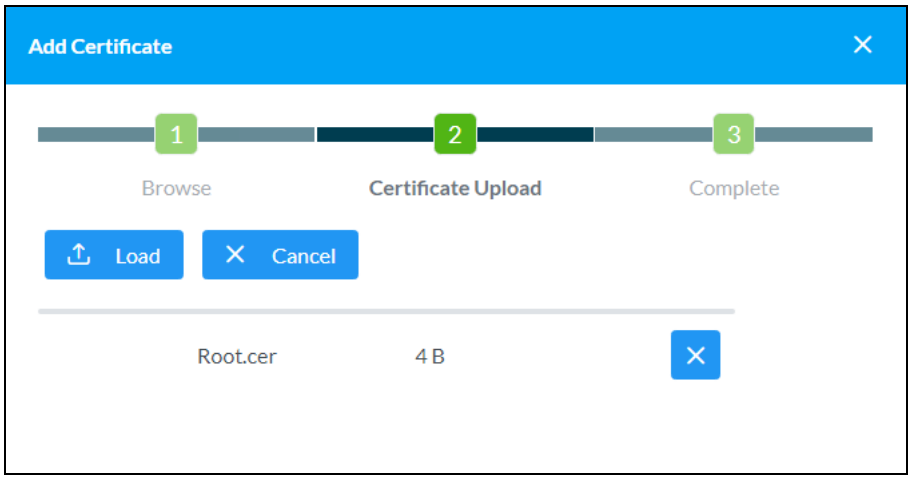
Add Certificate

Select **Add [Type] Certificate** at the bottom of the **Manage Certificates** dialog box to add a CA of one of the four available types (**Root**, **Intermediate**, **Machine**, or **Web Server**). The **Add Certificate** dialog box is displayed.



To add a new certificate:

1. Select **Browse**.
2. Navigate to the CA file on the local computer.
3. Select the CA file, and then select **Open**. The CA file is shown in the dialog box



4. Select **Load** to load the CA file to the touch screen. The upload progress is shown in the dialog box.
5. Once the touch screen has completed the upload, select **OK**.

Select the **x** button to close the **Add Certificate** dialog box at any time during the upload. Selecting the **x** button before the CA file is uploaded to the touch screen cancels the upload.

Select the **x** button to close the **Manage Certificates** dialog box.

For more information on using certificates for 802.1X IEEE authentication, refer to 802.1x Configuration on page 99.

Enter Setup

Select **Enter Setup** to open the local setup screens on the touch screen display.

For more information on configuring the touch screen with its local setup screens, refer to Local Configuration on page 101.

Enter Standby

Select **Enter Standby** to force the touch screen to enter standby timeout mode.

App Upgrade

Select **App Upgrade** to update the currently selected application. The update progress is shown in a pop-up window.

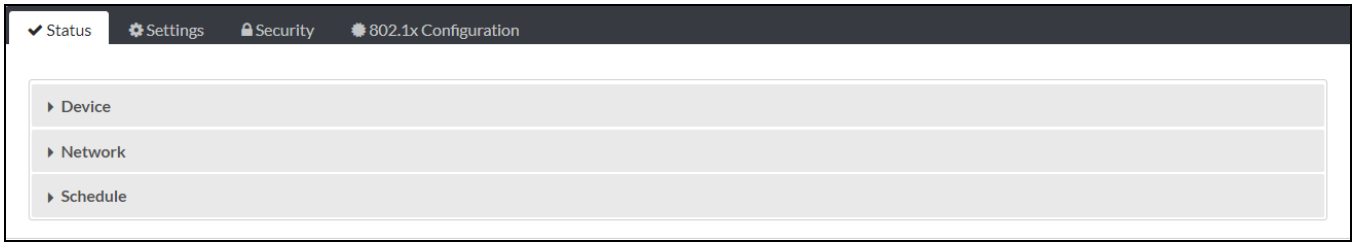
> **NOTE:** This selection is not available if the touch screen is running the Crestron Scheduling App.

Once the update is complete, select **OK** to close the pop-up window.

Status

Select the **Status** tab on the top left of the interface to display accordions for viewing the status of the touch screen and the Crestron Scheduling app (if selected).

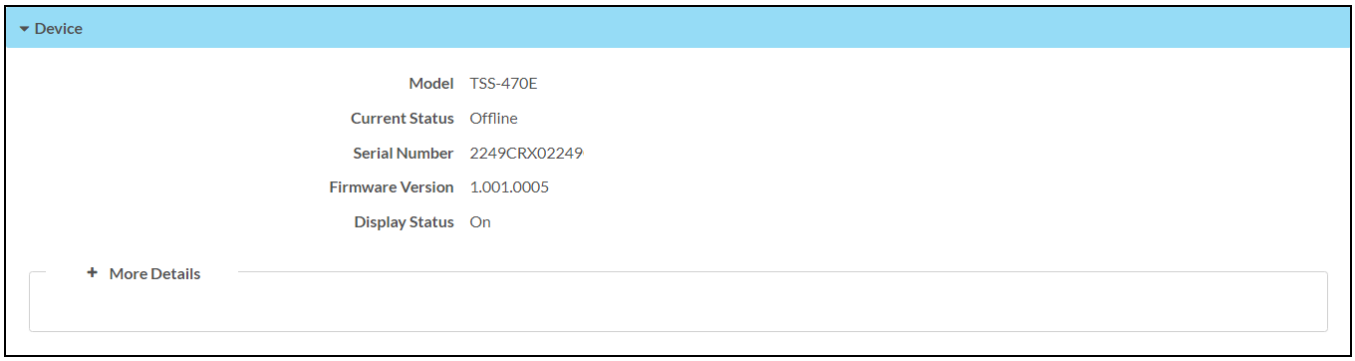
Select an accordion name to expand that accordion. If the accordion is expanded, select the accordion name again to collapse the accordion.



The following **Status** selections are provided.

Device

Select the **Device** accordion to view general device information.



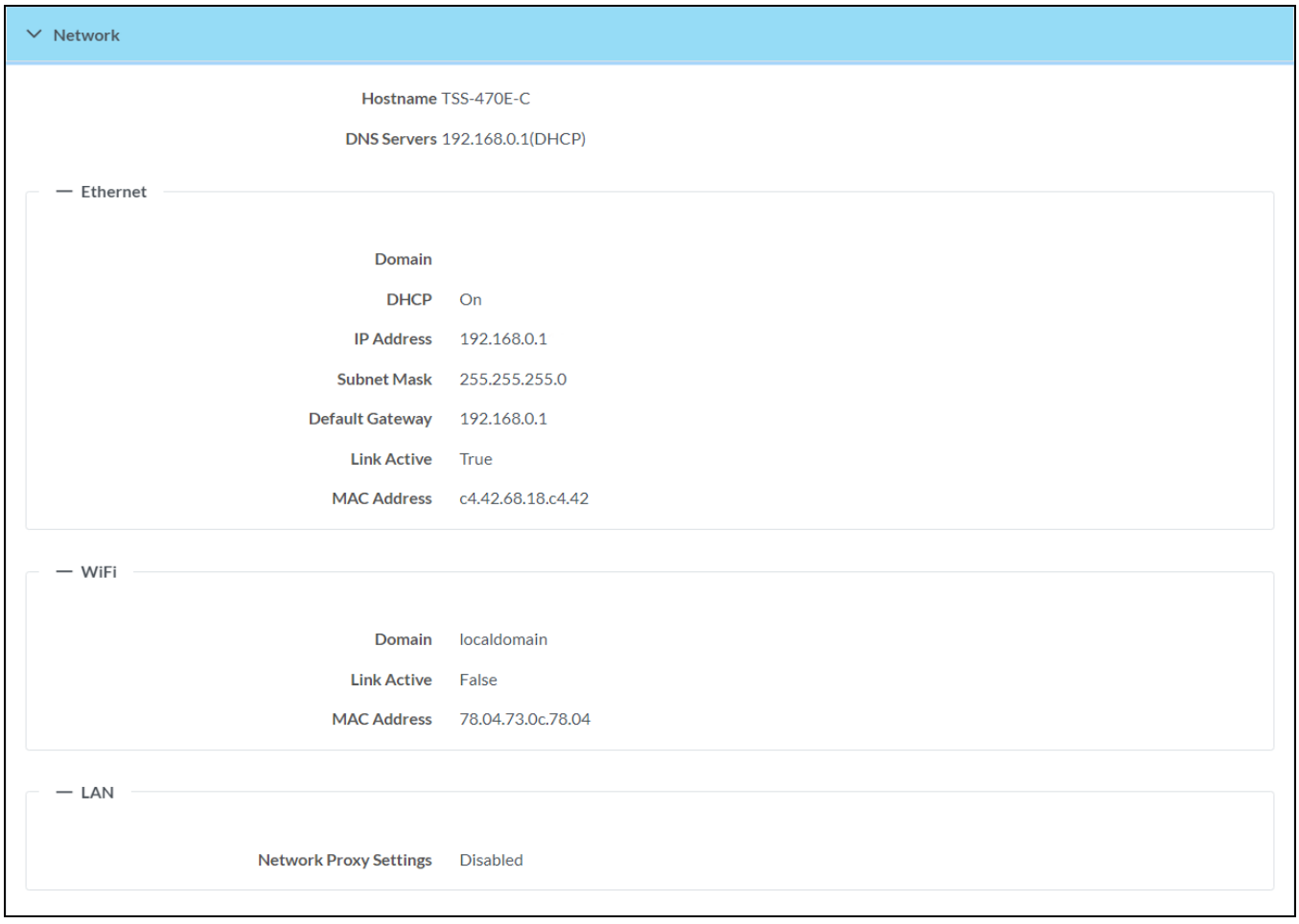
The following **Device** information is displayed:

- **Model**: The touch screen model name
- **Current Status**: The status of the scheduling calendar
- **Serial Number**: The touch screen serial number
- **Firmware Version**: The firmware version loaded onto the touch screen
- **Display Status**: The status of the touch screen display

Select **+ More details** at the bottom of the **Device** tab to display an expanded section that shows additional touch screen information. If **+ More Details** is selected, select **- Less** details to collapse the section.

Network

Select the **Network** accordion to view the status of network settings for the touch screen.



The following **Network** information is displayed:

- **Hostname**: The touch screen host name
- **DNS Servers**: The DNS (domain name server) addresses used to resolve the touch screen domain to an IP address

Select the **+** (plus) icon next to **Ethernet** to display the following Ethernet settings:

- **Domain**: The touch screen domain name
- **DHCP**: Reports whether DHCP is turned on or off for Ethernet IP addressing, shown only if an Ethernet connection is active
- **IP Address**: The touch screen IP address, shown only if an Ethernet connection is active
- **Subnet Mask**: The touch screen subnet mask address, shown only if an Ethernet connection is active
- **Default Gateway**: The gateway router address, shown only if an Ethernet connection is active
- **Link Active**: Reports the status of the Ethernet connection (A **True** message indicates that the Ethernet connection is active, while a **False** message indicates that the Ethernet connection is inactive.)
- **MAC Address**: The unique MAC (media access control) address for the Ethernet adapter

Select the **+** (plus) icon next to **WI-FI** to display the following Wi-Fi network settings:

- **Domain**: The Wi-Fi network domain name
- **DHCP Enabled**: Reports whether DHCP is turned on or off for Wi-Fi IP addressing, shown only if a Wi-Fi network connection is active
- **IP Address**: The touch screen IP address, shown only if a Wi-Fi network connection is active
- **Subnet Mask**: The touch screen subnet mask address, shown only if a Wi-Fi network connection is active
- **Default Gateway**: The gateway router address, shown only if a Wi-Fi network connection is active
- **Link Active**: Reports the status of the Wi-Fi network connection (A **True** message indicates that the Wi-Fi network connection is active, while a **False** message indicates that the Wi-Fi network connection is inactive.)
- **MAC Address**: The unique MAC (media access control) address for the Wi-Fi network adapter.

Select the **+** (plus) icon next to **LAN** to display the following LAN settings:

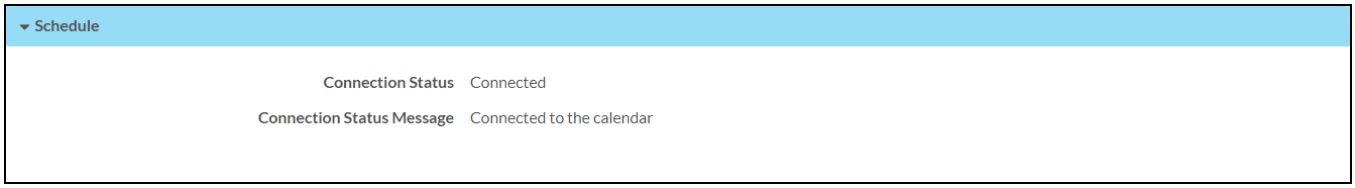
- **Network Proxy Settings**: Reports whether network proxy settings are turned on or off for the touch screen

For more information on configuring network settings, refer to System Setup on page 78.

Schedule

Select the **Schedule** accordion to view the status of the connected scheduling calendar and the current reservation information.

> **NOTE:** The **Schedule** accordion is shown only if **Crestron Scheduling** is selected for **Application Mode**.



The following **Schedule** information is displayed:

- **Connection Status**: Indicates the status of the scheduling calendar connection
- **Connection Status Message**: Displays information about the scheduling calendar connection status

Settings

Select the **Settings** tab on the top left of the interface to display accordions for configuring settings for the touch screens and Crestron Scheduling app (if selected).

> **NOTE:** Settings cannot be updated or saved in the web configuration interface if the local configuration screens are active. Close the local configuration screens prior to opening the web configuration interface.

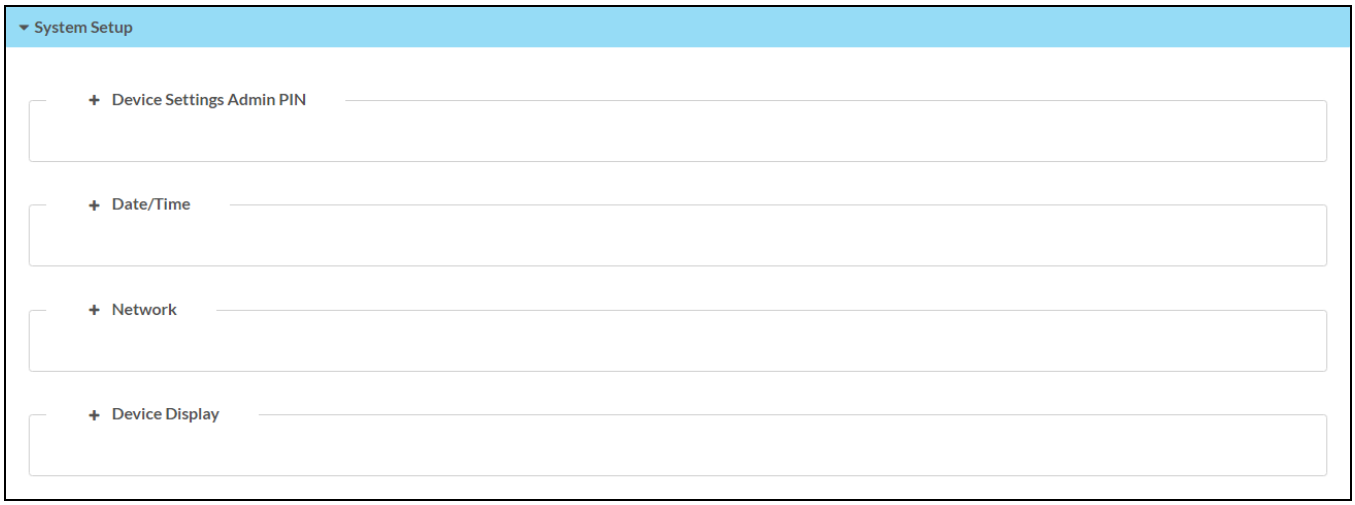
Select an accordion name to expand that accordion. If the accordion is expanded, select the accordion name again to collapse the accordion.

The following **Settings** selections are provided.

> **NOTE:** If an invalid value is entered for a setting, the web configuration interface will not allow changes to be saved until a valid value is entered. Red text is displayed next a setting to indicate an invalid value.

System Setup

Select **System Settings** to configure general network and touch screen settings.



The following **System Settings** configuration settings are provided.

Device Settings Admin PIN

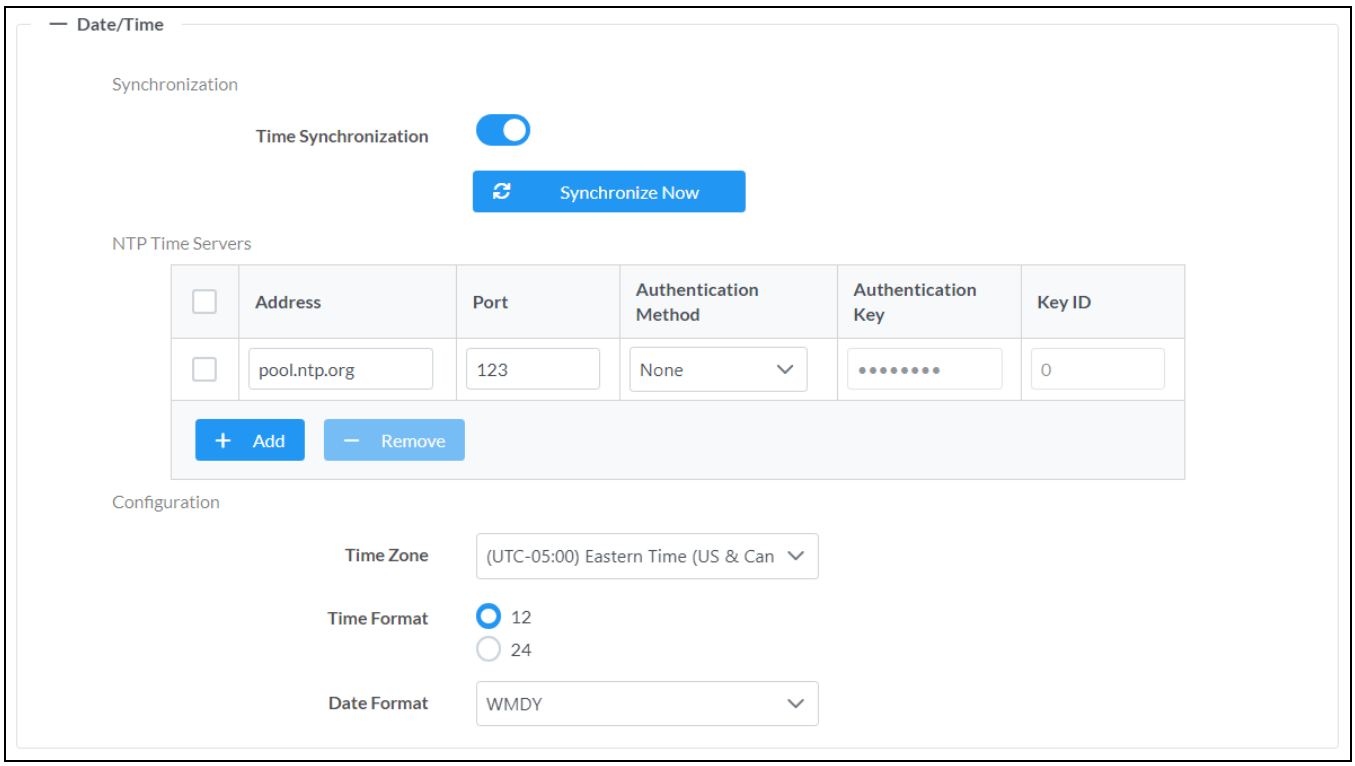
The **Device Settings Admin PIN** subsection is used to configure a security PIN that must be entered before accessing the Ethernet and Wi-Fi configuration settings or restore option in the local configuration interface. For more information, refer to Enter an Admin PIN on page 102.

The following **Device Settings Admin PIN** settings are provided:

- **Enable PIN**: Turn on the toggle to force users to enter a security PIN prior to accessing restricted areas in the local configuration interface.
- **Panel PIN**: Enter a six-digit PIN that must be entered to access restricted areas in the local configuration interface.
- **Confirm Panel PIN**: Confirm the value entered for **Panel PIN**.

Date/Time

The **Date/Time** subsection is used to configure date and time settings for the touch screen.



The following **Date/Time** settings are provided:

- **Synchronization**
  - **Time Synchronization**: Turn on the toggle to use time synchronization via NTP (Network Time Protocol).

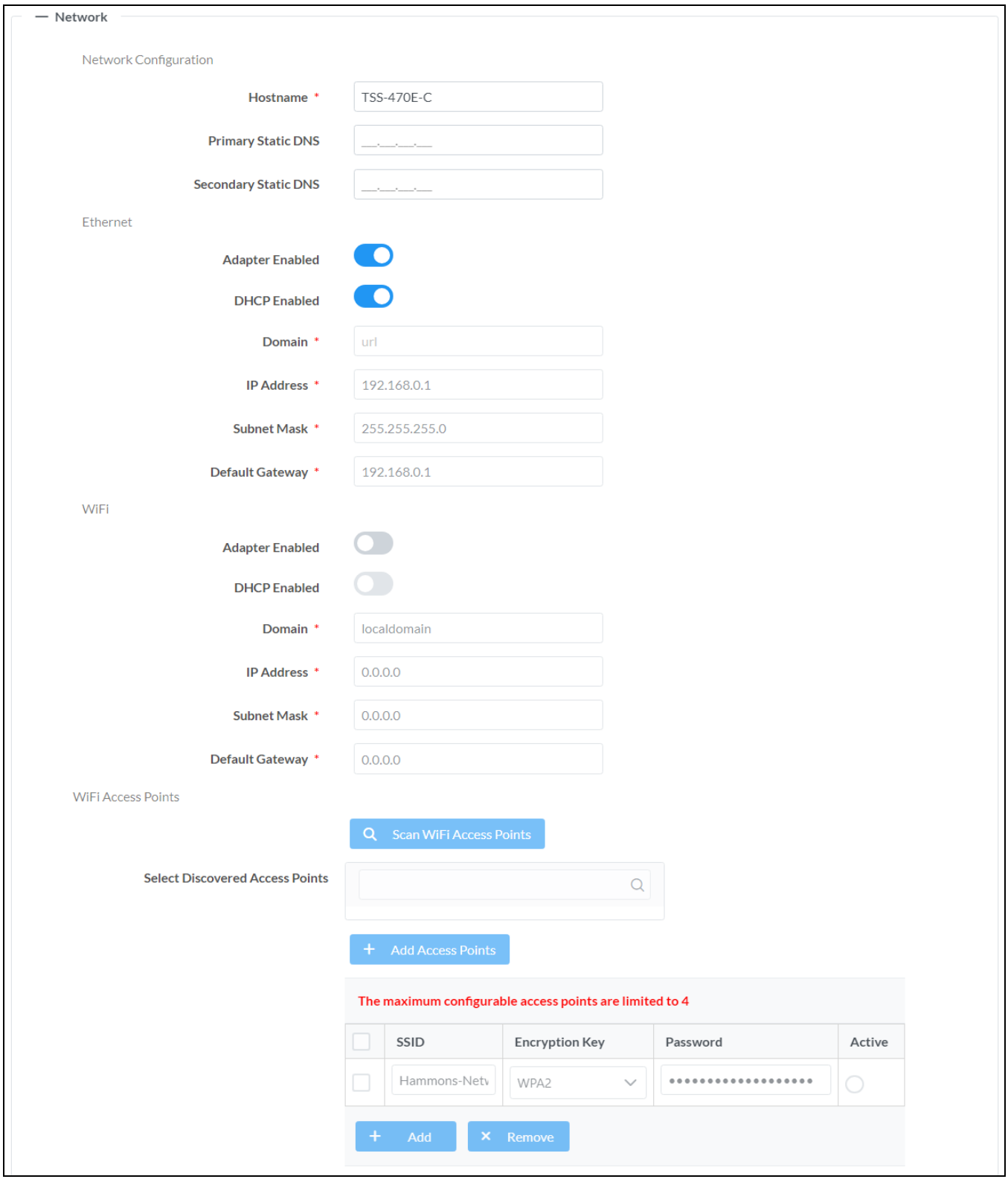
    > **NOTE:** It is recommended that **Time Synchronization** is turned on to ensure accurate scheduling calendar data is pushed to the touch screen.

  - **Synchronize Now**: With **Time Synchronization** turned on, select **Synchronize Now** to synchronize the touch screen with the NTP server(s) entered in the **NTP Time Servers** table. Time synchronization could take up to two minutes to complete.
- **NTP Time Servers**: With **Time Synchronization** turned on, use the provided table to enter information regarding the NTP server(s) used to synchronize the date and time for the touch screen.
  - Select **Add** to add a new NTP server entry into the table.
  - Enter the following information for each entry:
    - Enter the NTP server address into the **Address** text field.
    - Enter the NTP server port into the **Port** text field.
    - Use the **Authentication Method** drop-down menu to select the authentication method used to access the NTP server (if one exists).

        - If an authentication method is selected, enter the key used to authenticate against the NTP server into the **Authentication Key** text field.
        - If an authentication method is selected, enter the ID for the key used to authenticate against the NTP server into the **Key ID** text field.
    - To remove an entry, fill the checkbox to the left of the table entry, and then select **Remove**.
- **Configuration**
    - **Time Zone**: Select a time zone for the touch screen using the drop-down menu.
    - **Date**: If **Time Synchronization** is turned off, select the date for the touch screen using the pop-up calendar that is displayed.
    - **Time Format**: Select the format that the time will display on the touch screen (12 hour or 24 hour).
    - **Date Format**: Select the format that the date will display on the touch screen using the drop-down menu.
    - **Time**: If **Time Synchronization** is turned off, select the time for the touch screen (in 24-hour format) using the pop-up menu that is displayed.

Network

The **Network** subsection is used to configure network settings for the touch screen.



The following **Network** settings are provided:

> **NOTE:** The **Domain**, **IP Address**, **Subnet Mask**, and **Default Gateway** fields are required only if DHCP is turned off for Ethernet or Wi-Fi network connections.

- **Network Configuration**
  - **Hostname**: Enter the touch screen host name.
  - **Primary Static DNS**: Enter the primary DNS address used to resolve the touch screen domain to an IP address.
  - **Secondary Static DNS**: Enter the secondary DNS address used to resolve the touch screen domain to an IP address.
- **Ethernet**
  - **Adapter Enabled**: Turn on the toggle to use the touch screen Ethernet adapter, which allows the touch screen to make an Ethernet connection.
  - **DHCP Enabled**: Turn on the toggle to use DHCP for the Ethernet connection.

    > **NOTE:** If DHCP is turned on, IP does not function until a reply has been received from the server. The touch screen broadcasts requests for an IP address periodically.

  - **Domain**: Enter the fully qualified domain name for the Ethernet connection.
  - **IP Address**: Enter a static touch screen IP address for the Ethernet connection.
  - **Subnet Mask**: Enter a touch screen subnet mask address for the Ethernet connection.
  - **Default Gateway**: Enter the gateway router address on the network.
- **Wi-Fi**
  - **Adapter Enabled**: Turn on the toggle to use the touch screen Wi-Fi adapter, which allows the touch screen to make a Wi-Fi network connection.
  - **DHCP**: Turn on the toggle to use DHCP for the Wi-Fi network connection.

    > **NOTE:** If DHCP is turned on, IP does not function until a reply has been received from the server. The touch screen broadcasts requests for an IP address periodically.

  - **Domain**: Enter the fully qualified domain name for the Wi-Fi network connection.
  - **IP Address**: Enter a static touch screen IP address for the Wi-Fi network connection.
  - **Subnet Mask**: Enter a touch screen subnet mask address for the Wi-Fi network connection.
  - **Default Gateway**: Enter the gateway router address on the network.
- **Wi-Fi Access Points**

  > **NOTE:** The Ethernet adapter must be turned off before a Wi-Fi connection can be established.

  - **Scan Wi-Fi Access Points**: Scans the network for open Wi-Fi access points (WAPs) that are in range of the touch screen. All discovered access points are displayed in the **Select Discovered Access Points** menu.

> **NOTE:** Not all nearby WAPs may be discovered during a scan. If a desired WAP is still not discovered after multiple scans, it must be added manually using the WAP table below this setting.

- **Select Discovered Access Points**: Select an access point after completing a scan. Enter text in the search field to search for a specific WAP name.
- **Add Access Points**: Adds the chosen access point entry from the **Select Discovered Access Points** field to the table below.

  Each added WAP is displayed in a table that contains the following information:

  > **NOTE:** The **SSID** and **Encryption Key** fields are populated automatically when a discovered WAP is selected. This information must be entered manually when adding a new WAP.

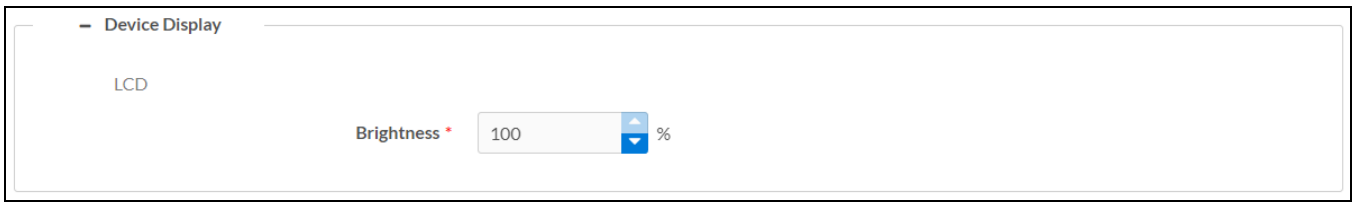
  - **SSID**: Enter or modify the SSID (name) of the WAP.
  - **Encryption Key**: Select the security/encryption type used by the WAP.
  - **Password**: Enter the password used to connect to the WAP.
  - **Active Access Point**: Indicates whether a connection to the WAP.

  Select **Add** to add a new entry to the WAP table. After selecting one more entries in the WAP table, select **Remove** to delete the selected entries.

  > **NOTE:** No more than four WAPs can be assigned to the touch screen at once. An existing WAP must be removed before a new one can be added.

Device Display

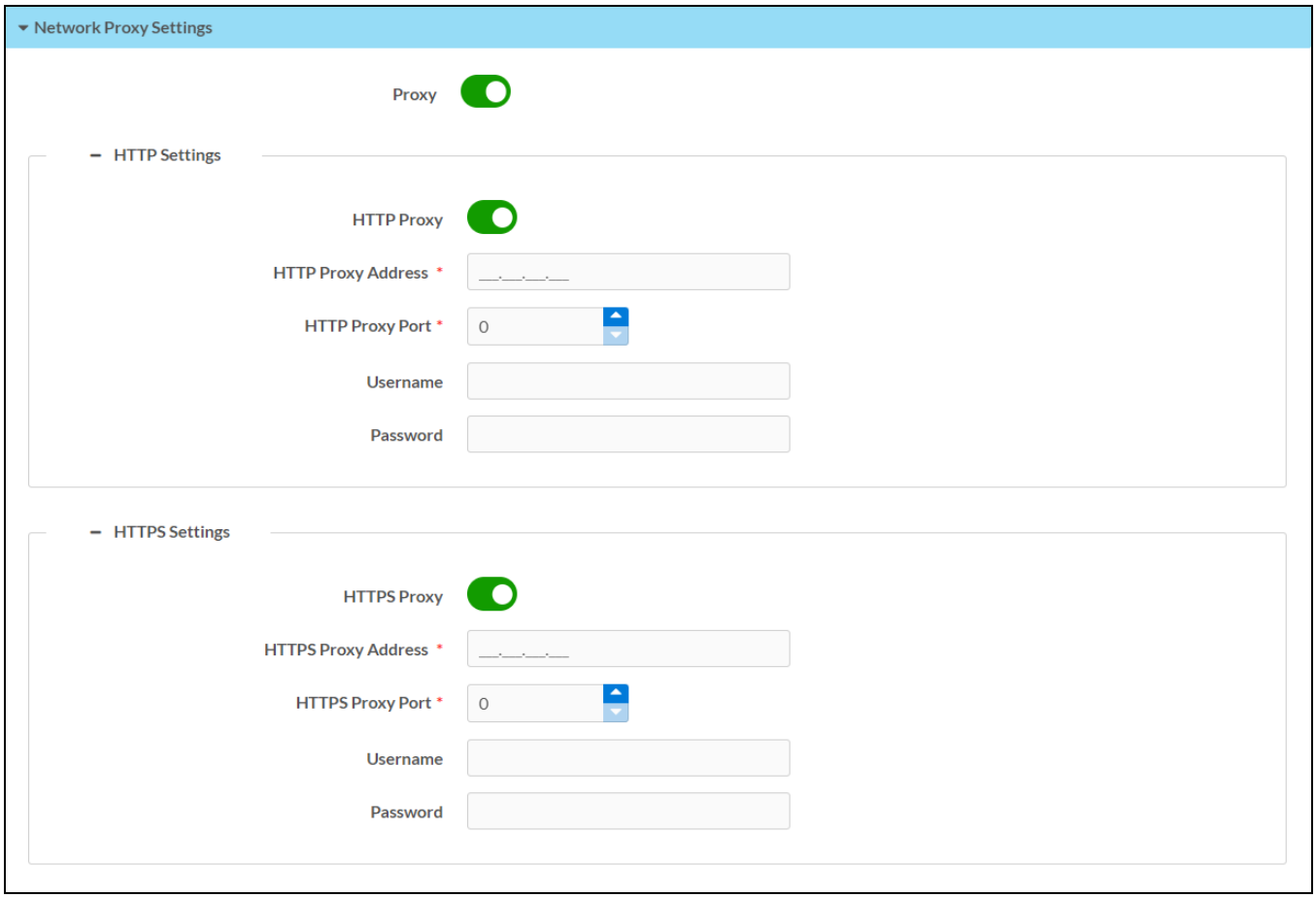
The **Device Display** subsection is used to configure device display settings for the touch screen.



Enter a value (1–100%) for the LCD display brightness in the **Brightness** text field.

Network Proxy Settings

Select **Network Proxy Settings** to configure network proxy settings for the touch screen.



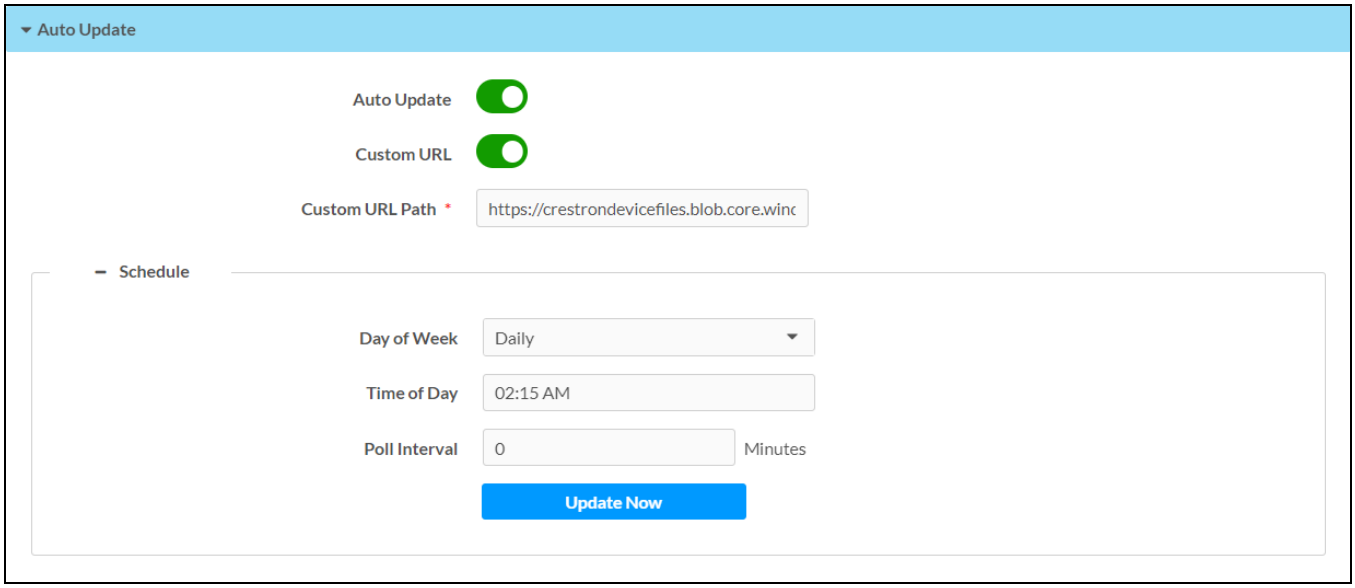
The following **Network Proxy Settings** settings are provided:

- **Proxy**: Turn on the toggle to configure the touch screen for use with a proxy server.
- **HTTP Settings**
  - **HTTP Proxy**: Turn on the toggle to use an HTTP proxy server.
  - **HTTP Proxy Address**: Enter the IP address of the HTTP proxy server.
  - **HTTP Proxy Port**: Enter the port number of the HTTP proxy server.
  - **Username**: Enter the username required for the HTTP proxy server.
  - **Password**: Enter the password required for the HTTP proxy server.
- **HTTPS Settings**
  - **HTTPS Proxy**: Turn on the toggle to use an HTTPS proxy server.
  - **HTTPS Proxy Address**: Enter the IP address of the HTTPS proxy server.
  - **HTTPS Proxy Port**: Enter the port number of the HTTPS proxy server.
  - **Username**: Enter the username required for the HTTPS proxy server.
  - **Password**: Enter the password required for the HTTPS proxy server.

Auto Update

Select **Auto Update** to configure automatic firmware updates for the touch screen.

> **NOTE:** The **Auto Update** accordion can be used to configure auto update settings for firmware only. Automatic application updates are not affected by these settings.



The following **Auto Update** settings are provided:

- **Auto Update**: Turn on the toggle to use automatic firmware updates.
- **Custom URL**: Turn on the toggle use a custom update server URL. If turned off, the server URL will default to the standard Crestron update sever.
- **Custom URL Path**: If **Custom URL Path** is turned on, enter the custom URL path for the update server.

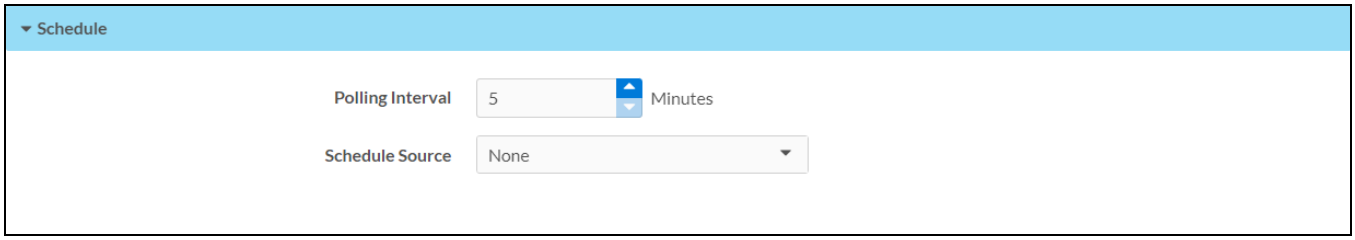
  > **NOTE:** When entering a custom URL path that uses Secure File Transfer Protocol (SFTP), ensure that the path explicitly includes the user's home directory. Otherwise, the root directory will be used by default.

- **Day of Week**: Select the day of week when the touch screen will check for updates. Select **Daily** to have the touch screen check for updates every day.
- **Time of Day**: Enter a time of day (in 24-hour format) when the touch screen will check updates on the scheduled day.
- **Poll Interval**: Enter the polling interval (in hours) for when the touch screen will poll the server for updates.
- Select **Update Now** to check the update server for new firmware and to update the touch screen immediately if new firmware is available.

Schedule

Select **Schedule** to choose the scheduling calendar provider for the Crestron Scheduling app and to configure scheduling integration settings.

> **NOTE:** The **Schedule** accordion is shown only if **Crestron Scheduling** is selected for **Application Mode**.



The following **Schedule** settings are provided:

- **Polling Interval**: Enter the interval (in minutes) that the scheduling application waits to poll the network for scheduling calendar data if changes are not pushed to the application.

  > **NOTE:** To override the current polling interval from the Crestron Scheduling app and fetch the latest scheduling calendar data, double tap the QR code displayed in the UI. From more information on the Crestron Scheduling app UI, refer to Operation on page 126.

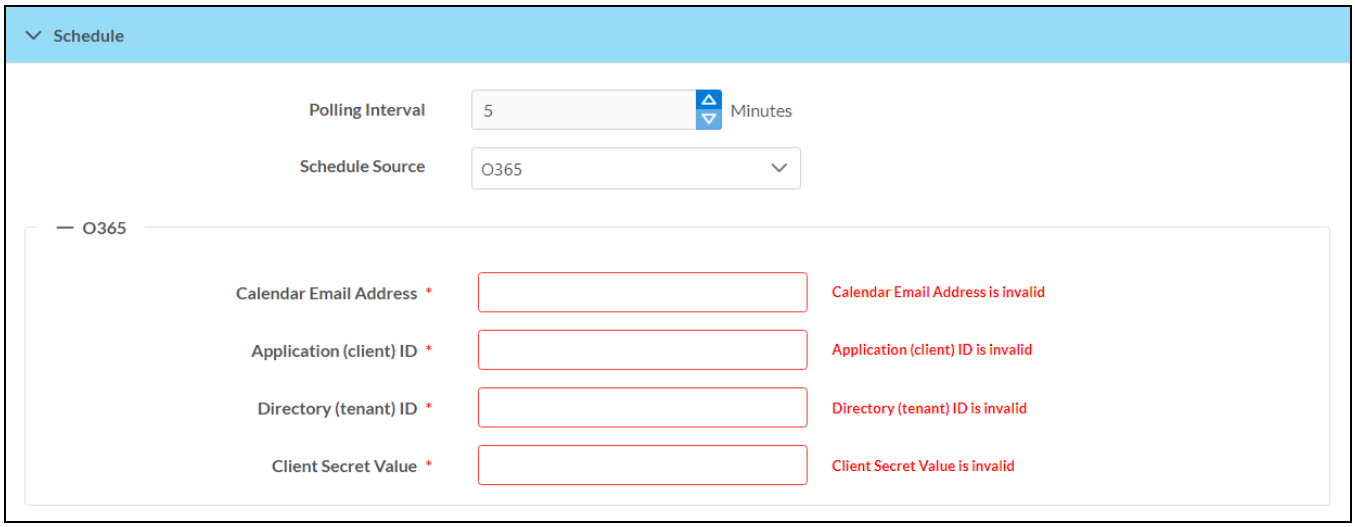
- **Schedule Source**: Select the scheduling calendar source from the drop-down menu that provides scheduling information to the application.

Depending on the scheduling calendar source that is selected for **Schedule Source**, the following subsections are displayed.

O365

Select **O365** under **Schedule Source** to display options for integrating a Microsoft Exchange account with the scheduling application using Microsoft Graph.

For more information on connecting to a Microsoft Exchange account, refer to Connect to Office 365 Using Microsoft Graph on page 67.



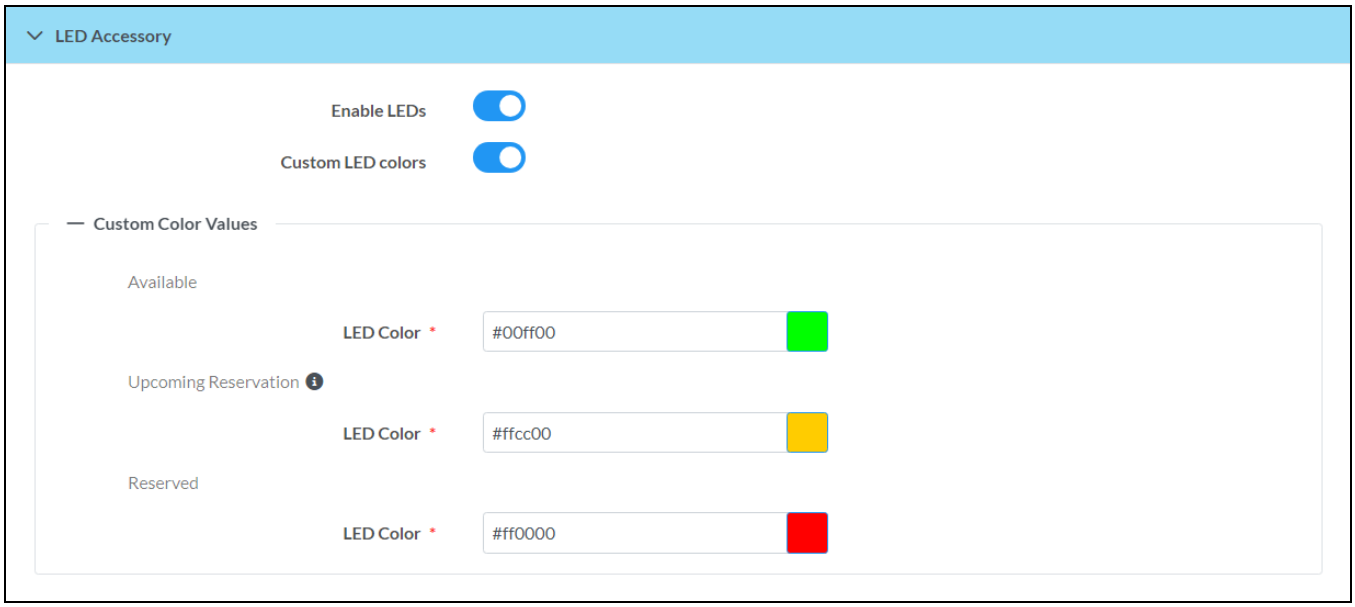
NOTE: The **Application (client) ID**, **Directory (tenant) ID**, and **Client Secret Value** values are generated within the Microsoft Entra portal for the Microsoft Entra app. For more information, refer to Configure Microsoft Graph for Crestron Scheduling on page 110.

- Enter the email address associated with the Microsoft Exchange scheduling calendar in the **Calendar Email Address** text field.
- Enter the application (client) ID generated for the Microsoft Entra app in the **Application (client) ID** text field.
- Enter the directory (tenant) ID generated for the Microsoft Entra app in the **Directory (tenant) ID** text field.
- Enter the client secret value generated for the Microsoft Entra app in the **Client Secret Value** text field.

LED Accessory

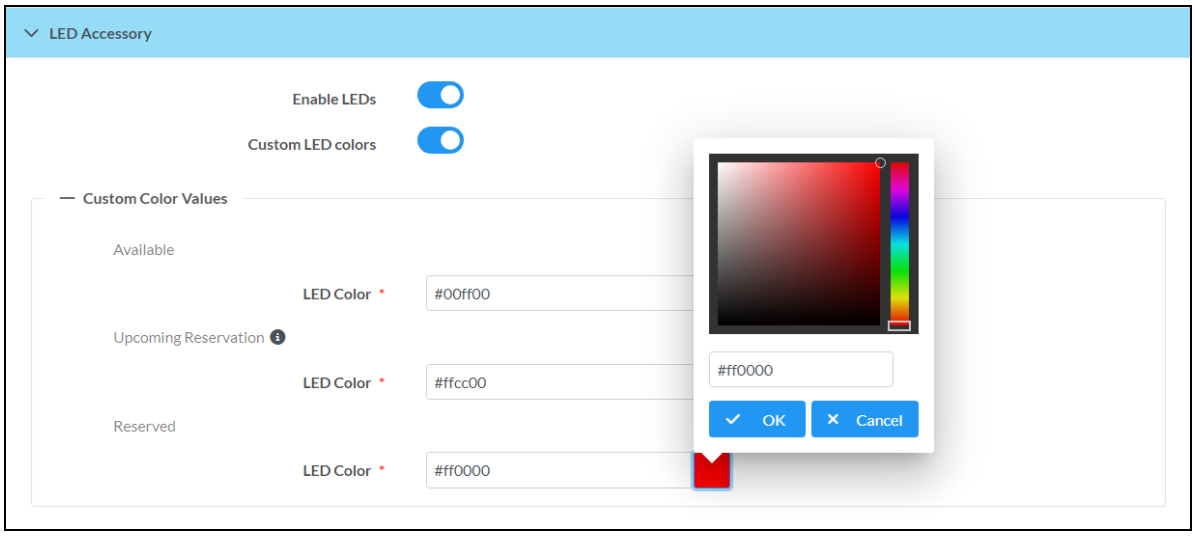
Select **LED Accessory** to customize the LED colors of the integrated light bar.

NOTE: The **LED Accessory** accordion is shown only if **Crestron Scheduling** is selected for **Application Mode**.



The following **LED Accessory** settings are provided:

- **Enable LEDs**: Turn on the toggle to use the light bar with the Crestron Scheduling app.
- **Custom LED Colors**: Turn on the toggle to use custom colors for the light bar.
- Expand **Custom Color Values** to configure custom colors for the light bar (if **Custom LED colors** is turned on):
  - Select the color swatch buttons to the right of the **LED Color** text fields to display color pickers for each occupancy state (**Available**, **Upcoming Reservation**, and **Reserved**). Select the desired color using the color picker, and then select **OK**.



  - Alternately, enter a hexadecimal color value in the **LED Color** text field to use the closest color supported by the light bar.

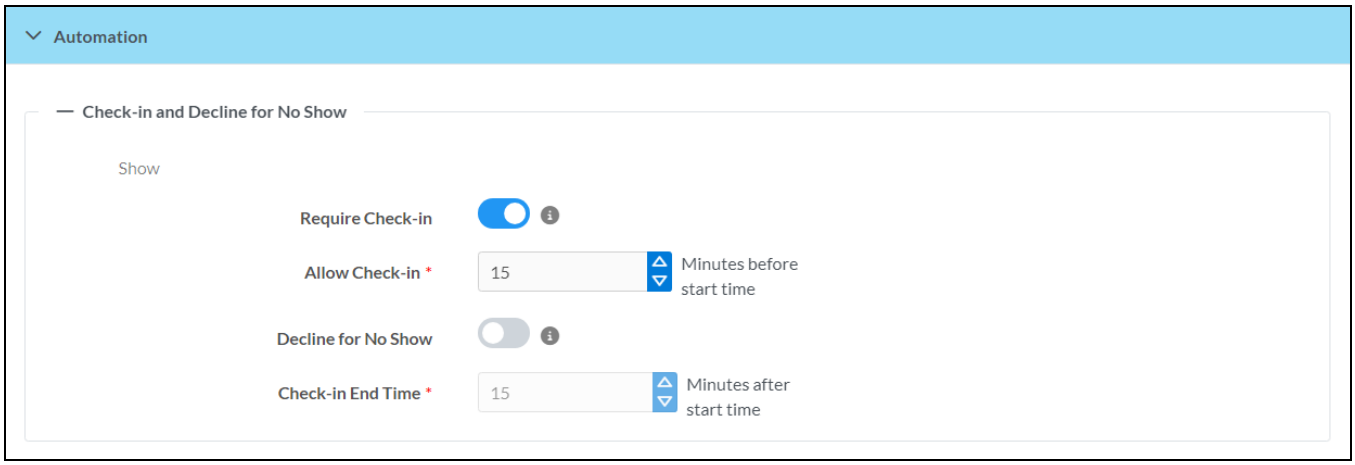
NOTES:

- The light bar LEDs do not support all possible hexadecimal color values. If an unsupported color value is entered in the **LED Color** text field, the closest supported color value will be used instead.
- The hexadecimal color values shown in the image above are the default values for the touch screen.

Automation

Select **Automation** to configure automated settings for the scheduling application.

NOTE: The **Automation** accordion is shown only if **Crestron Scheduling** is selected for **Application Mode**.



The **Automation** accordion provides different settings depending on whether desk mode or room mode was selected for the Crestron Scheduling application. For more information on changing the operating mode, refer to Applications on page 91.

The following **Automation** settings are provided when the Crestron Scheduling application is in desk mode (as shown in the image above):

NOTE: For detailed information about check-in and decline for no show behavior in desk mode, refer to Operation on page 126.

- **Require Check-In**: Turn on the toggle to require a user to check in to the reservation from the touch screen before the reservation begins.
- **Allow Check-In**: Enter the duration (in minutes) when a check in button becomes available on the touch screen before a reservation begins.

> **NOTE:** If the check in button from the prior reservation is still active and has not been pressed, the check in button for the next reservation does not appear until the previous reservation expires.

- **Decline for No Show**: If **Check-In** is turned on, turn on the toggle to allow reservations to be declined automatically in the event of a no show.

  > **NOTE:** When **Decline for No Show** is turned on, a user must tap the check in button on the touch screen within a specified period after the reservation begins. If the user does not check in during this period, the reservation will be removed from the scheduling calendar.

- **Check-in End Time**: Enter the duration (in minutes) when the check button will be available on the touch screen after a reservation begins.

  > **NOTE:** If the length of a reservation is shorter than the **Check-in End Time** value, the **Check-in End Time** duration is limited to the length of the reservation, and the reservation will not be canceled.

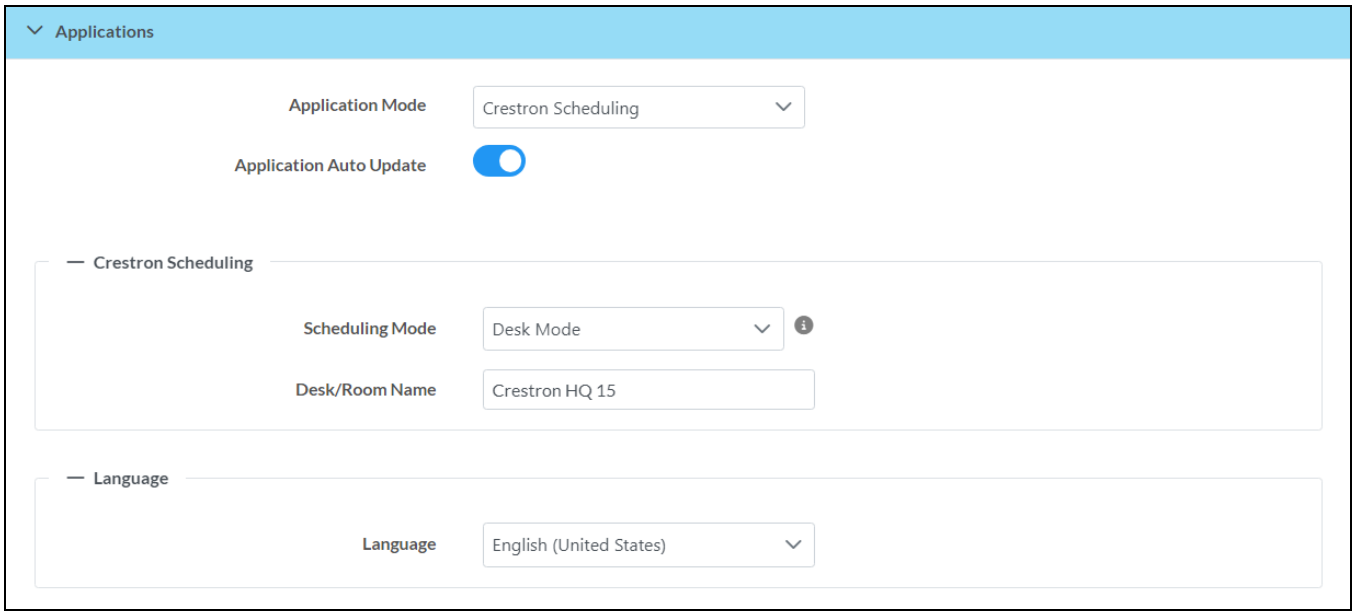
The following **Automation** settings are provided when the Crestron Scheduling application is in room mode:

Turn on the **Enable check-in** toggle to allow a user to check in to the reservation from the touch screen before the reservation begins.

> **NOTE:** For information about check-in behavior in room mode, refer to Operation on page 126. The decline for no show functionality is not provided in room mode.

Applications

Select **Applications** to select a scheduling application to run on the touch screen.



The following **Applications** settings are provided:

- **Application Mode**: Use the drop-down menu to select a scheduling application from the available selections.

  Once a new application is selected, select **Save Changes** from the **Actions** menu. A pop-up message is displayed stating that the touch screen must be restarted for the new application to take effect. Select **Yes** to restart the touch screen now or **No** to restart the touch screen later. The touch screen restarts with the new application running.

  > **NOTE:** Each application uses a unique setup procedure for registering and configuring the application. For more information on supported applications, refer to Application Selection on page 109.

- **Application Auto Update**: Turn on the toggle to update the selected application automatically when an update is made available to the touch screen.

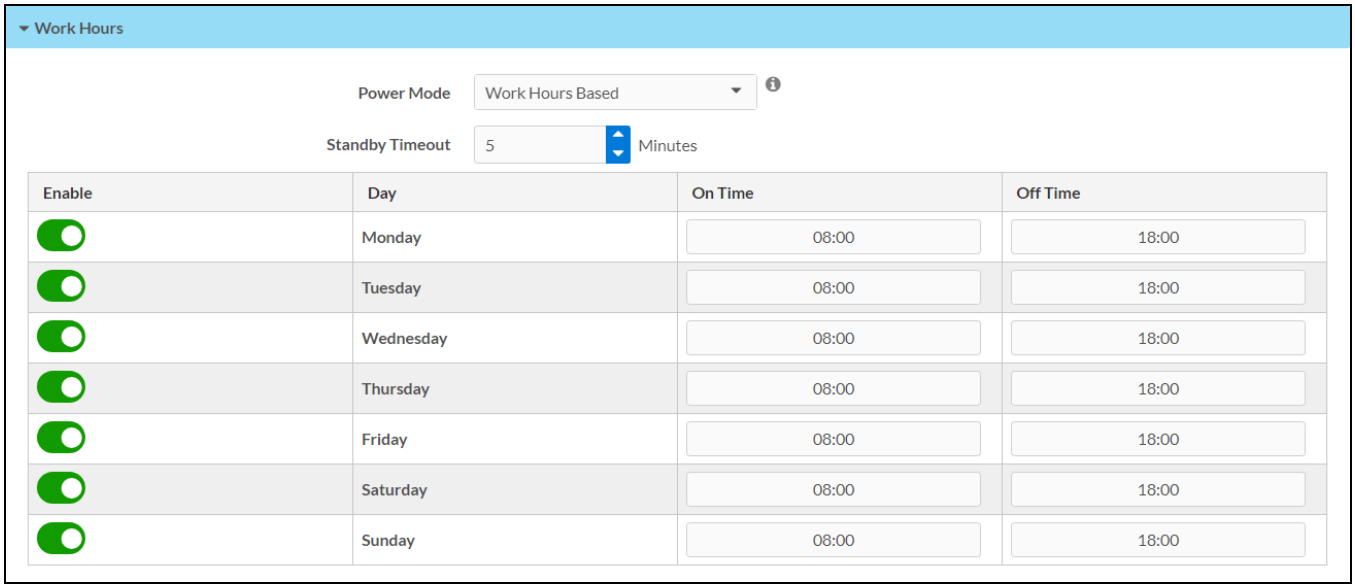
  > **NOTE:** Ensure **Application Auto Update** is turned on before switching to a third-party application. The application may not download to the touch screen if **Application Auto Update** is turned off.

- The following additional settings are provided if **Crestron Scheduling** is selected for **Application Mode**:
    - **Scheduling Mode**: Use the drop-down menu to switch between **Desk Mode** and **Room Mode**. For more information on operating these modes, refer to Operation on page 126.
    - **Desk/Room Name**: Enter a custom name for the desk or room. This custom name overwrites the calendar name on the application user interface.
    - **Language**: Use the drop-down menu to select the language that will be used by the scheduling application.

Work Hours

Select **Work Hours** to configure power mode settings for the touch screen, which are controlled by a day and time range.

> **NOTE:** The **Work Hours** accordion is shown only if **Crestron Scheduling** is selected for **Application Mode**.



The following **Work Hours** settings are provided:

- **Power Mode**: Use the drop-down menu to set the power mode settings for the touch screen display:
    - **Always On**: The touch screen display is always turned on and will not enter standby timeout mode regardless of scheduled work hours.
    - **Work Hours Based**: The touch screen display is turned on only during scheduled work hours and be placed in standby timeout mode during nonworking hours. The touch screen display can be tapped to wake it from standby timeout mode.
- **Standby Timeout**: If **Work Hours Based** is selected for **Standby**, enter a standby timeout duration (0–120 minutes) for the touch screen. If the touch screen display is tapped during nonworking hours, it will remain on for the specified duration before returning to standby timeout mode. Select "0" to always have the touch screen display turned on when using work hours.

NOTE: Work hours also control when all-day reservations will be declined if the decline for no show functionality has been configured for the touch screen. It is recommended to set the work hours **On Time** to reflect when most users in your organization typically start their work day.

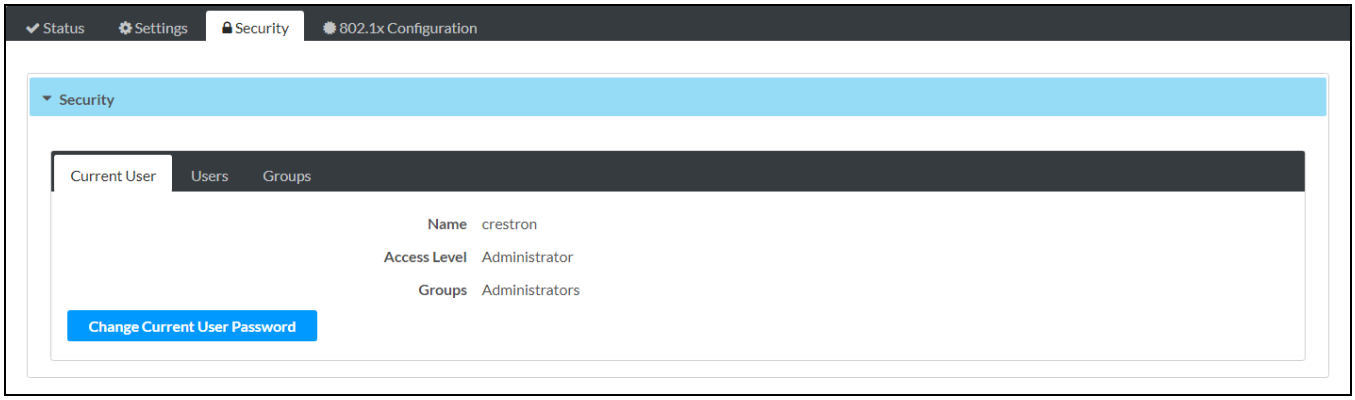
The following settings may be also configured for each day of the week listed in the corresponding **Day** column.

- **Enable**: Turn on the toggle to use power mode controls for the chosen day of the week. The touch screen display does not turn on for any day that is not selected by turning on the **Enable** toggle.
- **On Time**: Enter the time (in 24-hour format) when the connected touch screen display is turned on automatically for the chosen day of the week. The **On Time** value is also used to set when all day reservations will begin.
- **Off Time**: Enter the time (in 24-hour format) when the connected touch screen display is turned off automatically for the chosen day of the week. The **Off Time** value is also used to set when all day reservations will end.

During the set date and time range, the touch screen display remains on regardless of whether any reservations are scheduled.

Security

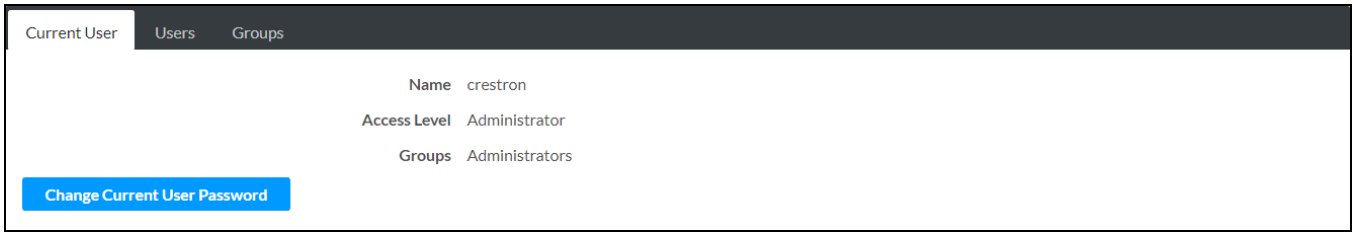
Select the **Security** tab on the top left of the interface to display selections for configuring user and group authentication settings for the touch screen.



Use the following **Security** settings to add, delete, and edit touch screen users and groups.

Current User

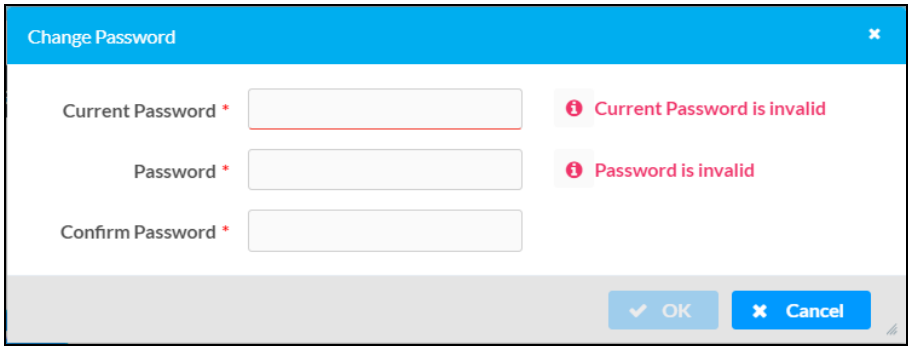
Select the **Current User** tab to view and edit information for the current touch screen user.



The following settings are displayed for the current user:

- **Name**: The chosen username
- **Access Level**: The access level granted to the user (**Administrator**, **Programmer**, **Operator**, **User**, or **Connect**)
- **Groups**: Lists any groups that contain the user

Select **Change Current User Password** to change the password for the current user. The **Change Password** dialog box is displayed.

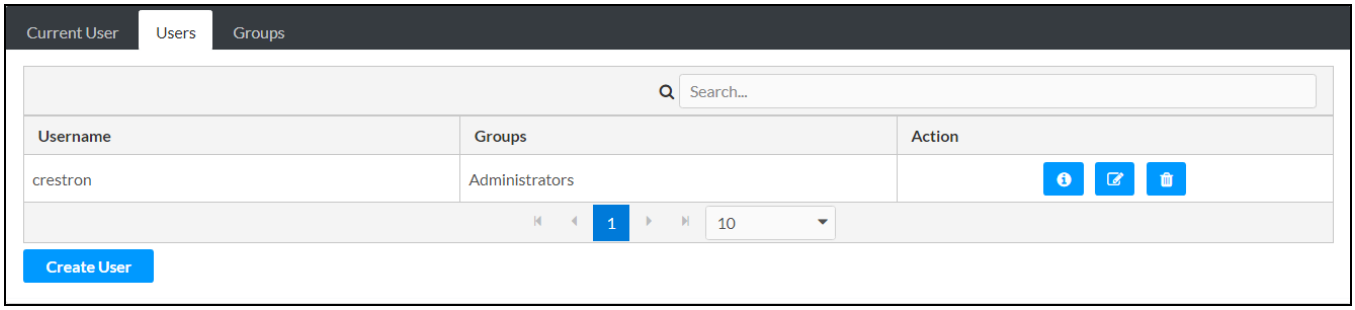


Enter the existing password in the **Current Password** field. Then, enter a new password in the **Password** field, and reenter the password in the **Confirm Password** field.

Select **OK** to save the new password, or select **Cancel** to cancel the change.

Users

Select the **Users** tab to view and edit information for the touch screen users.



Enter text into the **Search** field to find and display users that match the search term(s).

Touch screen users are listed in table format. The following information is displayed for each touch screen user:

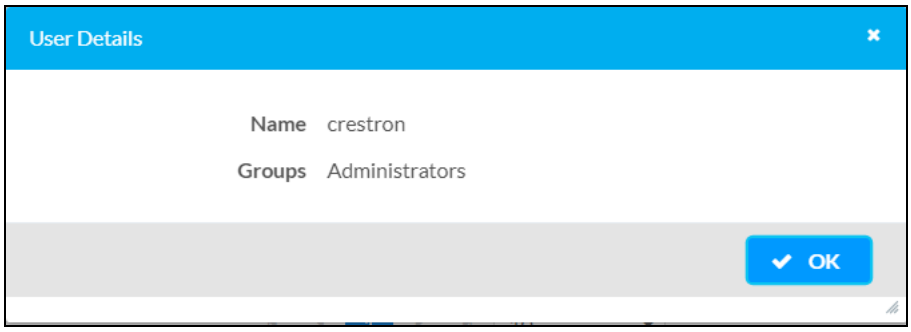
- **Username**: The chosen username
- **Groups**: Lists any groups that contain the user

If the touch screen users span multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page. Additionally, the number of users displayed on each page may be set to 5, 10, or 20 users.

An **Action** column is also provided for each user that allows various actions to be performed. The following selections may be selected from the **Action** column.

User Details

Select the information button in the **Action** column to view information for the selected user. The **User Details** dialog box is displayed.



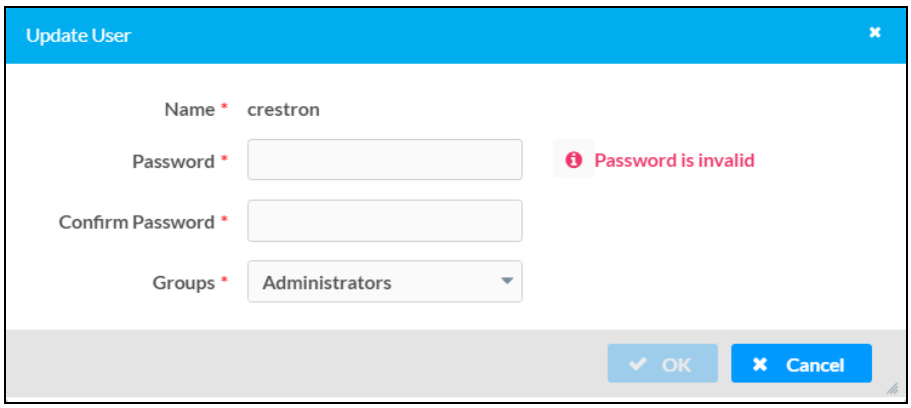
The following settings are displayed for the current user:

- **Name**: The chosen username
- **Groups**: Lists any groups that contain the user

Select **OK** to close the dialog box.

Update User

Select the pencil button in the **Action** column to edit settings for the selected user. The **Update User** dialog box is displayed.



The following **Update User** settings may be viewed or configured:

- **Name**: The chosen username.
- **Password**: Enter a new password for the selected user.
- **Confirm Password**: Reenter the password provided in the **Password** field.
- **Groups**: Add the user to one or more groups. For more information, refer to Groups on page 97.

Select **OK** to save any changes and close the dialog box. Select **Cancel** to cancel any changes.

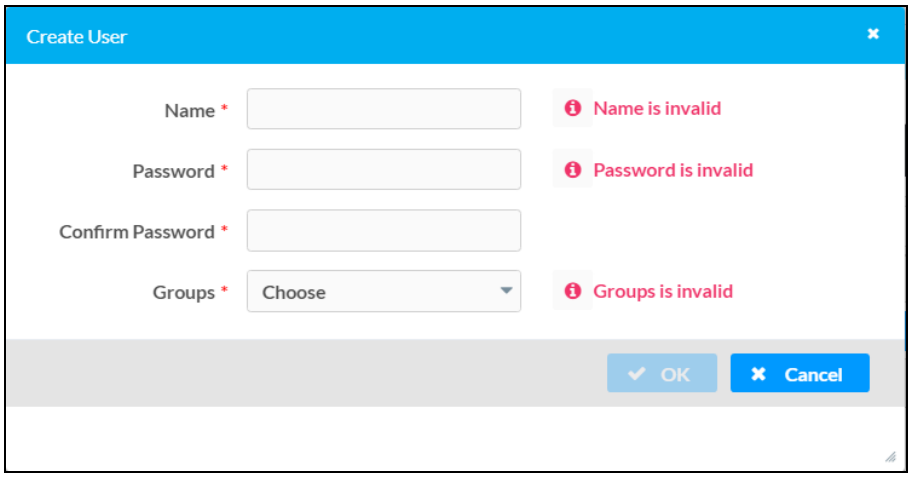
Delete User

Select the trashcan icon in the **Action** column to delete the user.

A dialog box is displayed asking whether the user should be deleted. Select **Yes** to delete the user or **No** to cancel deleting the user.

Create User

Select **Create User** at the bottom of the page to create a new touch screen user. The **Create User** dialog box is displayed.



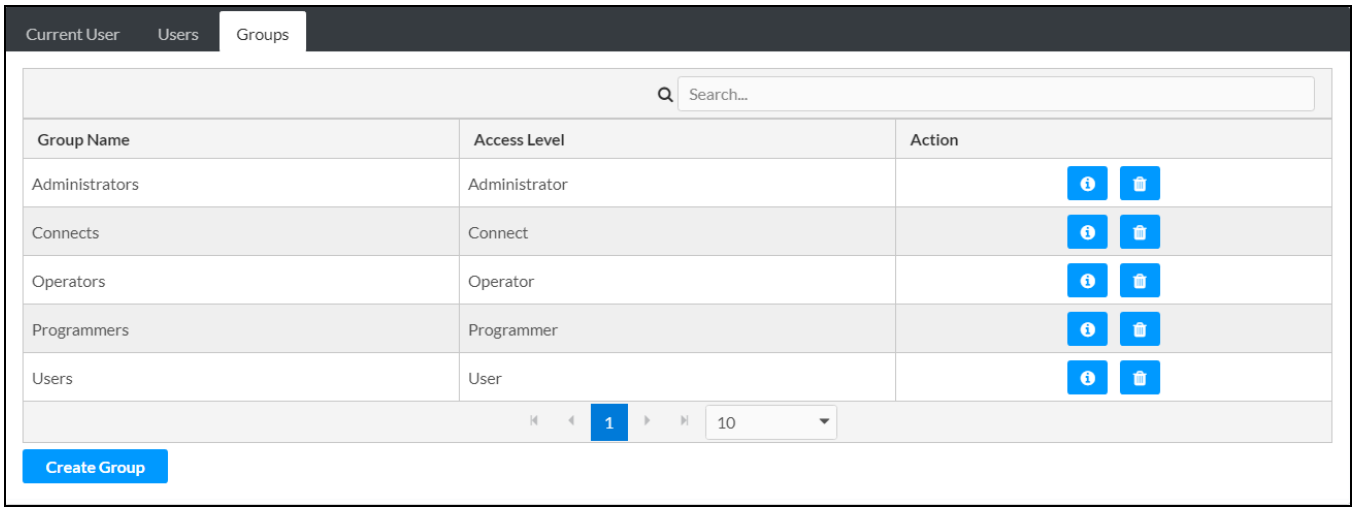
Use the following settings to create a new user:

- **Name**: Enter a username.
- **Password**: Enter a password for the user.
- **Confirm Password**: Reenter the password provided in the **Password** field.
- **Groups**: Add the user to one or more groups. For more information, refer to Groups on page 97.

Select **OK** to save any changes and close the dialog box. Select **Cancel** to cancel creating a new user.

Groups

Select the **Groups** tab to view and edit settings for touch screen groups. Touch screen groups are used to group users by access level and Active Directory authentication settings.



Enter text in to the **Search** field to find and display groups that match the search term(s).

Touch screen groups are listed in table format. The following information is displayed for each touch screen group:

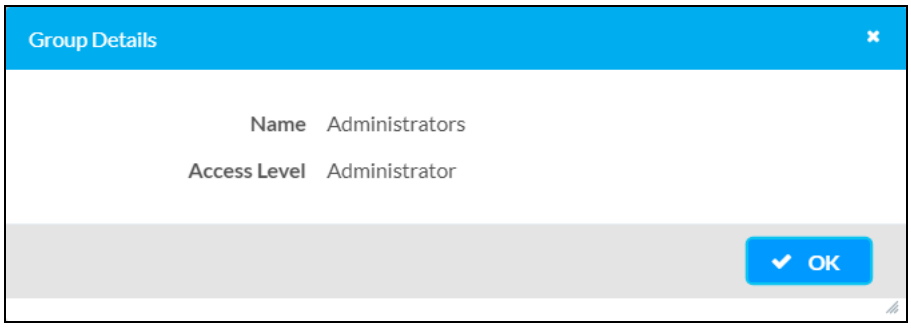
- **Group Name**: The chosen group name
- **Access Level**: The access level for the selected group (**Administrator**, **Programmer**, **Operator**, **User**, or **Connect**)

If the touch screen groups span multiple pages, use the navigation arrows on the bottom of the page to move forward or backward through the pages, or select a page number to navigate to that page. Additionally, the number of groups displayed on each page may be set to 5, 10, or 20 users.

An **Action** column is also provided for each group that allows various actions to be performed. The following selections may be selected from the **Action** column.

Group Details

Select the information button in the **Action** column to view information for the selected group. The **Group Details** dialog box is displayed.



The following settings are displayed for the current group:

- **Name**: The chosen group name
- **Access Level**: The access level of the group and its users

Select **OK** to close the dialog box.

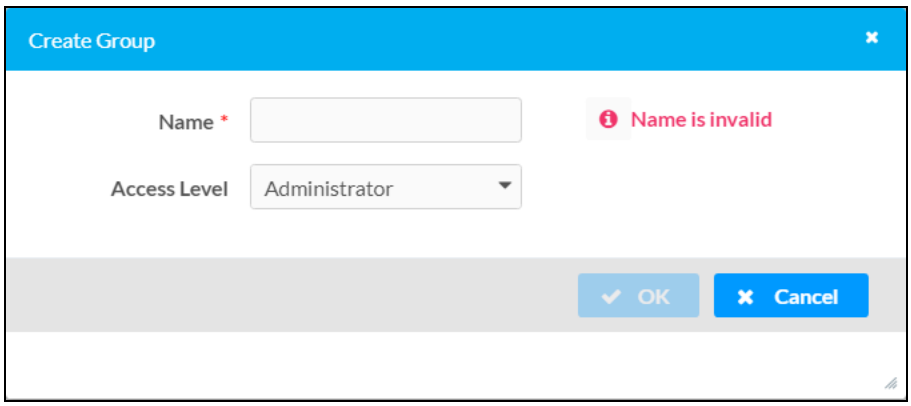
Delete Group

Select the trashcan icon in the **Action** column to delete the group.

A dialog box is displayed asking whether the group should be deleted. Select **Yes** to delete the group or **No** to cancel deleting the group.

Create Group

Select **Create Group** at the bottom of the page to create a new touch screen group. The **Create Group** dialog box is displayed.



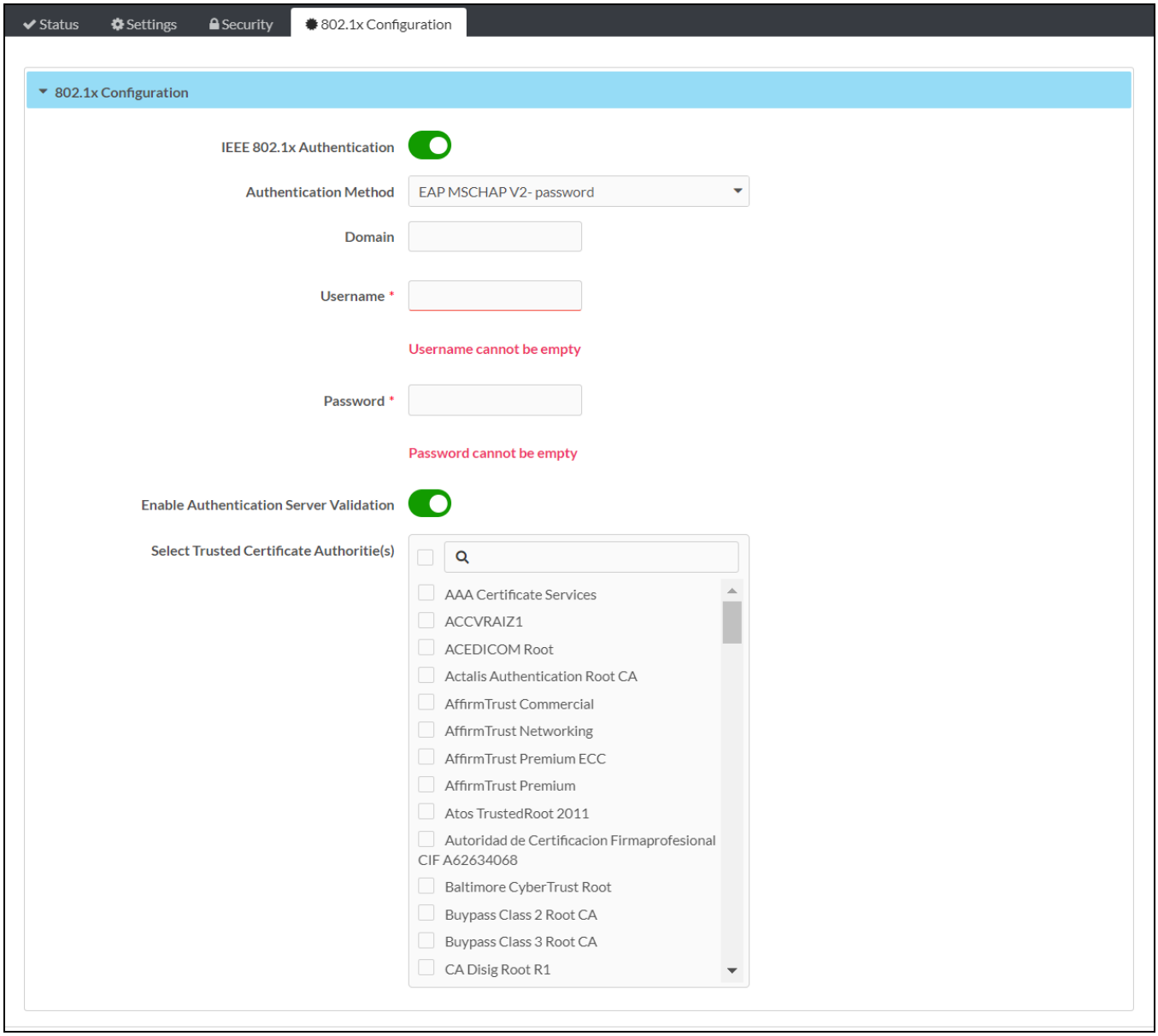
Use the following settings to create a new group:

- **Name**: Enter a group name.
- **Access Level**: Select an access level for the group and its users from the drop-down menu.

Select **OK** to save any changes and close the dialog box. Select **Cancel** to cancel creating a new group.

802.1x Configuration

Select the **802.1x Configuration** tab on the top left of the interface to display selections for configuring IEEE 802.1X network authentication for touch screen security.



Use the following **802.1x Configuration** settings to configure IEEE 802.1X network authentication:

Expand the **802.1x Configuration** accordion to configure the following settings:

- **IEEE 802.1x Authentication**: Turn on the toggle to use 802.1X authentication for the touch screen.
- **Authentication Method**: Select an 802.1X authentication method (**EAP-TLS Certificate** or **EAP MSCHAP V2- password**) from the drop-down menu.

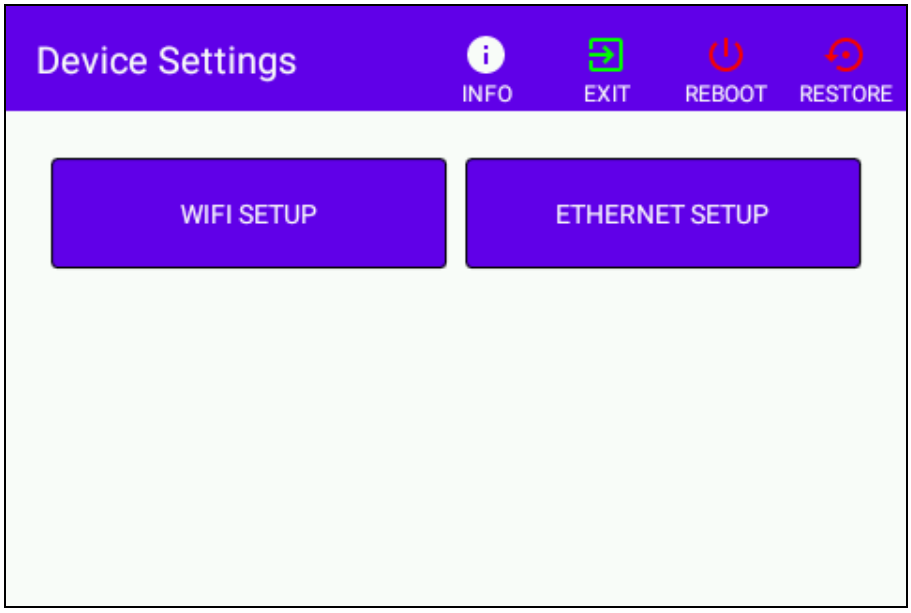
- **Domain**: If **EAP MSCHAP V2- password** is selected for **Authentication Method**, enter a domain name that is required for authentication.
- **Username**: If **EAP MSCHAP V2- password** is selected for **Authentication Method**, enter a username that is required for authentication.
- **Password**: If **EAP MSCHAP V2- password** is selected for **Authentication Method**, enter a password that is required for authentication.
- **Enable Authentication Server Validation**: Turn on the toggle to use server validation for increased security.
- **Select Trusted Certificate Authorities**: Select trusted CAs (Certificate Authorities) from the provided CAs to be used for server validation:
    - Select the check box to the left of a CA to select it as a trusted CA.
    - Enter a search term into the text field at the top of the CA menu to search for and display CAs that match the search term.
    - Select the check box to the left of the search field at the top of the CA menu to select all CAs as trusted CAs.

For more information on managing certificates for use with 802.1X IEEE authentication, refer to Manage Certificates on page 72.

Local Configuration

Certain touch screen settings may be monitored and configured using its local configuration interface. The interface can be accessed as described in Access the Local Setup Screens on page 57.

The **Device Settings** screen is displayed.



The **Device Settings** screen provides the following menu selections:

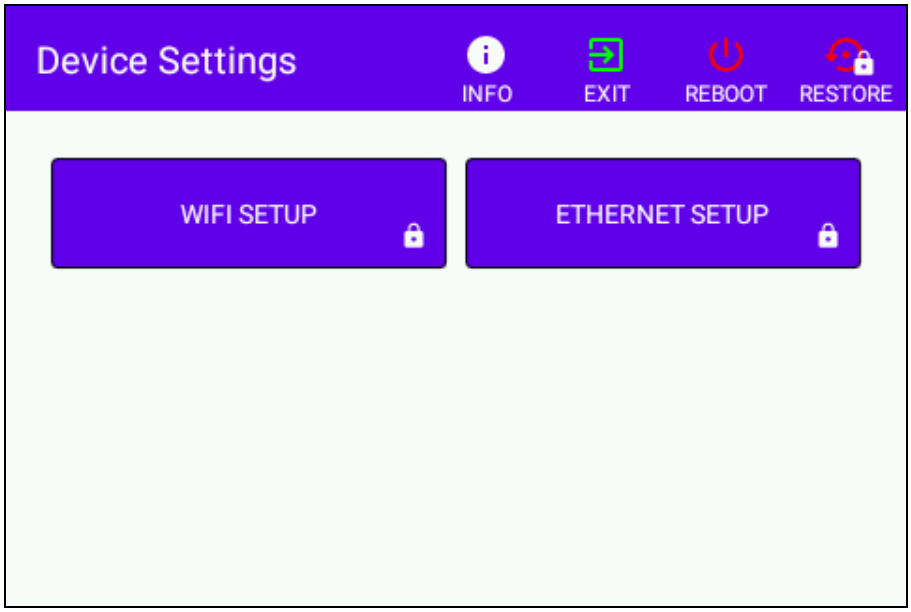
- Tap **Info** to display information about the touch screen and its network connection.
- Tap **Exit** to exit the local setup screens and to return to the application running on the touch screen.
- Tap **Reboot** to restart the touch screen. Tap **OK** when prompted by the touch screen to confirm the restart.
- Tap **Restore** to restore the touch screen to its factory default settings. Tap **OK** when prompted by the touch screen to confirm the restore.

  CAUTION: Performing a restore returns all touch screen settings to their default values (except for application settings) but retains any Wi-Fi access points (WAPs) that were previously added. To perform a factory restore that also removes any previously-added WAPs, refer to Perform a Factory Restore on page 125.

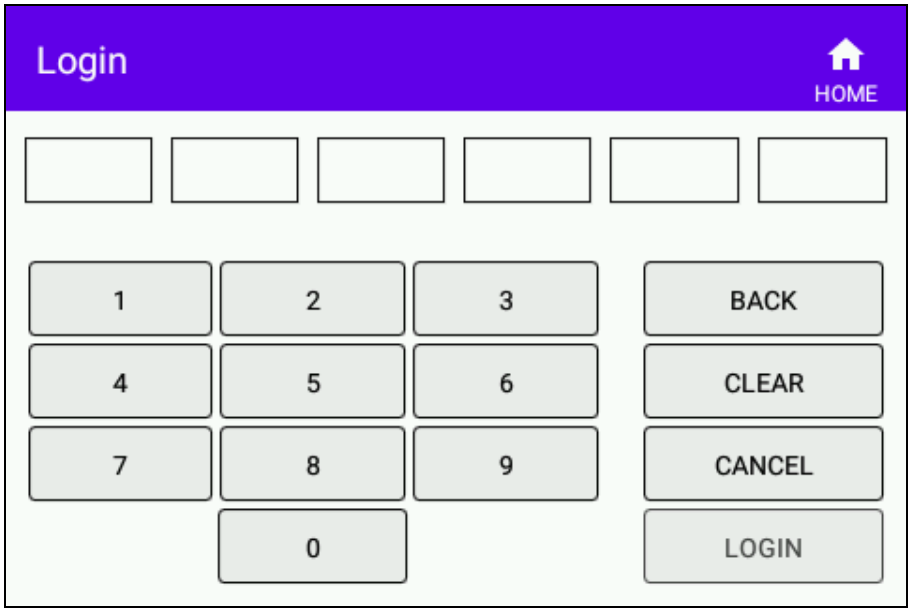
Additionally, selections for configuring a Wi-Fi® network connection or Ethernet connection are provided. Each selection is described in the following sections.

Enter an Admin PIN

If a device settings admin PIN has been configured for the touch screen, the **Restore**, **Wi-Fi Setup**, and **Ethernet Setup** selections will display a lock icon.



If one of these selections are made, a **Login** screen is displayed.



Use the numeric keypad to enter the six-digit admin PIN that has been created for the touch screen. The following controls are also provided:

- Tap **BACK** to delete the last number entered.
- Tap **CLEAR** to clear all entered numbers.
- Tap **CANCEL** to return to the **Device Settings** screen without entering a PIN.

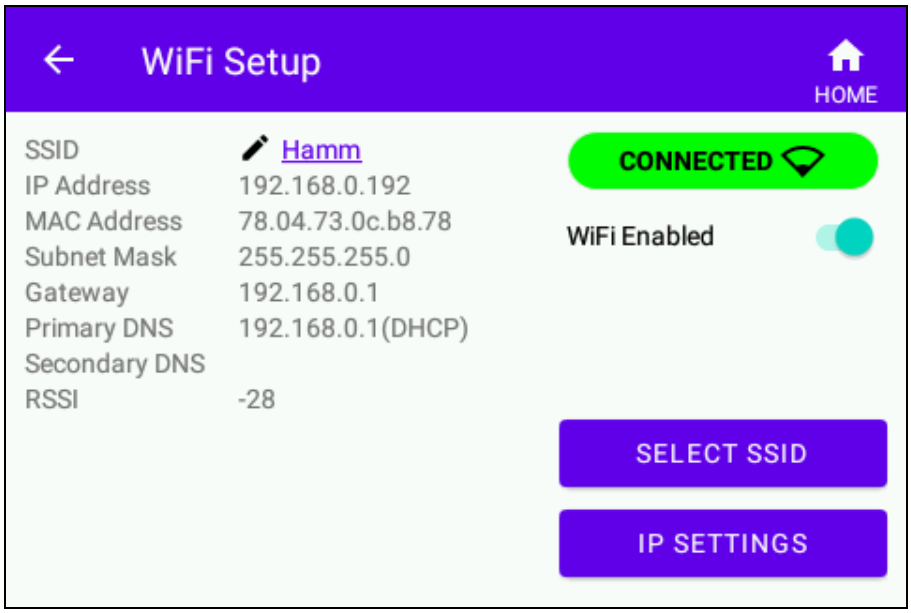
- Tap **LOGIN** to log into the touch screen using the six-digit PIN. This selection is only available after entering all six digits of the PIN.

If the login is successful, the lock icons are cleared from the **Device Settings** screen and the selections can be accessed. The current session times out after three minutes of inactivity, after which the PIN must be reentered.

For more information on configuring a device settings admin PIN, refer to Device Settings Admin PIN on page 78.

Wi-Fi Setup

Tap **Wi-Fi Setup** on the **Device Settings** screen to display the **Wi-Fi Setup** screen.



Use the **Wi-Fi Setup** screen to view the Wi-Fi network SSID, IP and MAC addresses, subnet mask address, default router address, primary and secondary DNS addresses, and various details about the Wi-Fi connection. A status bar is provided to indicate the status of the Wi-Fi connection (**Connected** or **Not Connected**).

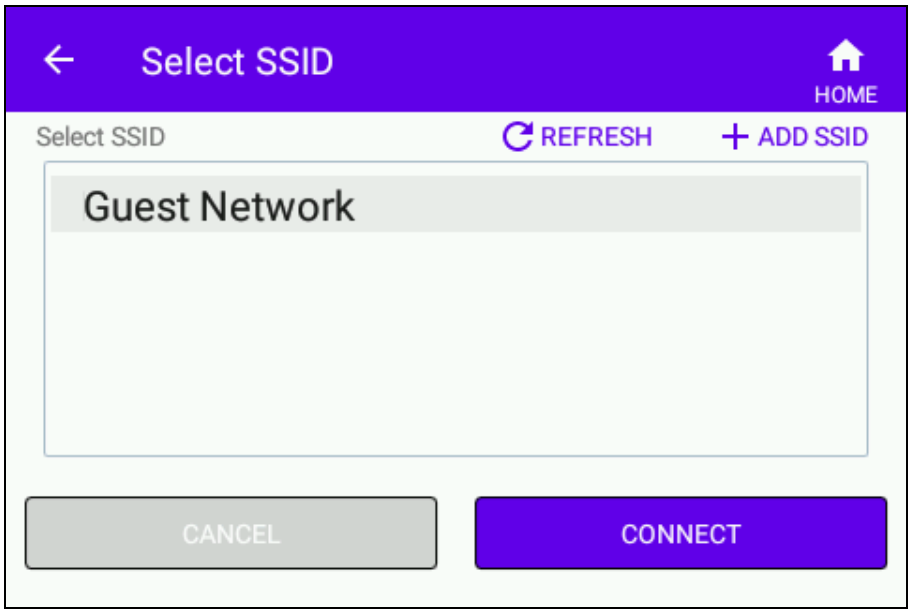
> **NOTE:** The touch screen Ethernet adapter must be turned off before a Wi-Fi connection can be established.

Turn on the **Wi-Fi Enabled** toggle to turn on the Wi-Fi adapter. If the **Wi-Fi Enabled** toggle is turned off, Wi-Fi will not function and an Ethernet connection can be established.

Tap the **Home** button at the top of the screen at any time to return to the **Device Settings** screen.

Configure a Wi-Fi Access Point

On the **Wi-Fi Setup** screen, tap **Select SSID**. The **Select SSID** screen is displayed.



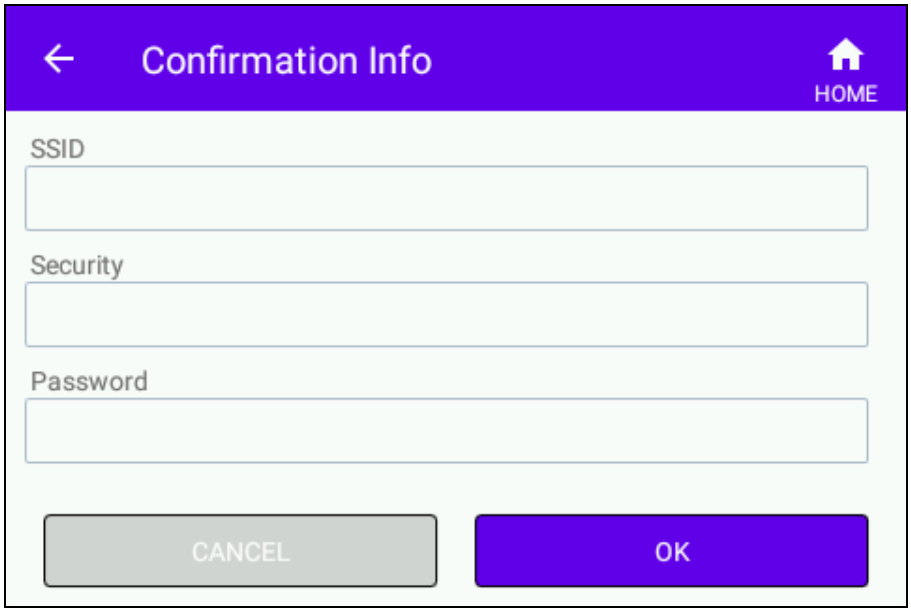
Use the **Select SSID** screen to connect the touch screen to an existing WAP that is in range or to configure a new WAP. Any WAPs that are in range and discoverable are displayed within this screen upon successful discovery. Select **Refresh** to refresh the listed of discovered WAPs.

NOTES:

- Not all nearby WAPs may be discovered during a scan. If a desired WAP is still not discovered after multiple scans, it must be added manually using the **+Add SSID** function.
- Only one WAP can be configured for the touch screen using the local configuration screens, while up to four WAPs can be configured using the web configuration interface. Attempting to configure a WAP using the local configuration screens will delete any additional WAPs that were previously added using the web configuration interface.

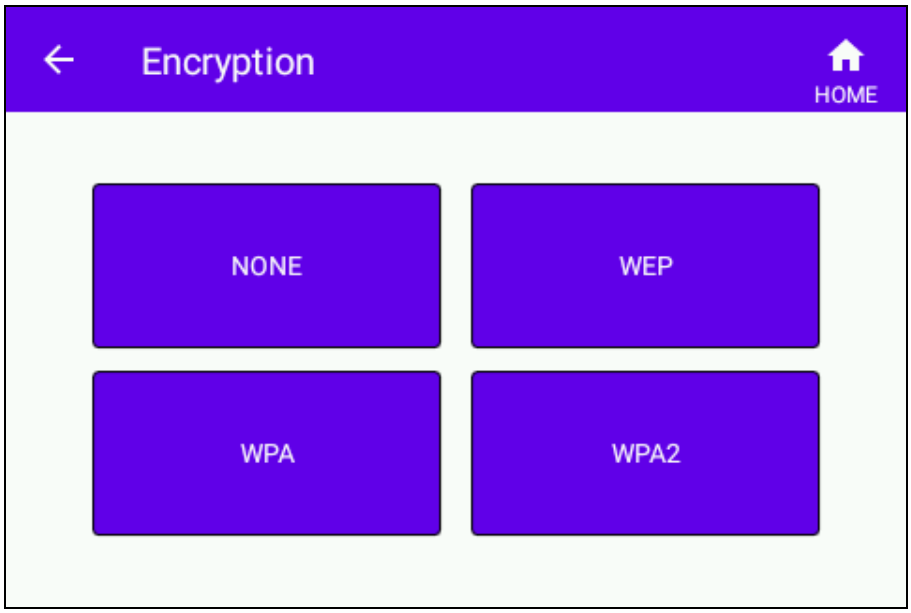
To set up a Wi-Fi network connection:

1. Select the desired WAP from the **Select SSID** screen. If the desired WAP is not shown, tap **+Add SSID**. The **Confirmation Info** screen is displayed.



> **NOTE:** The **SSID** and **Security** fields are populated automatically when a discovered WAP is selected. This information must be entered manually when adding a new WAP.

2. Tap the **SSID** text field to display an on-screen keyboard.
3. Enter or modify the WAP name if necessary.
4. Tap the **Security** text field to display the **Encryption** screen.

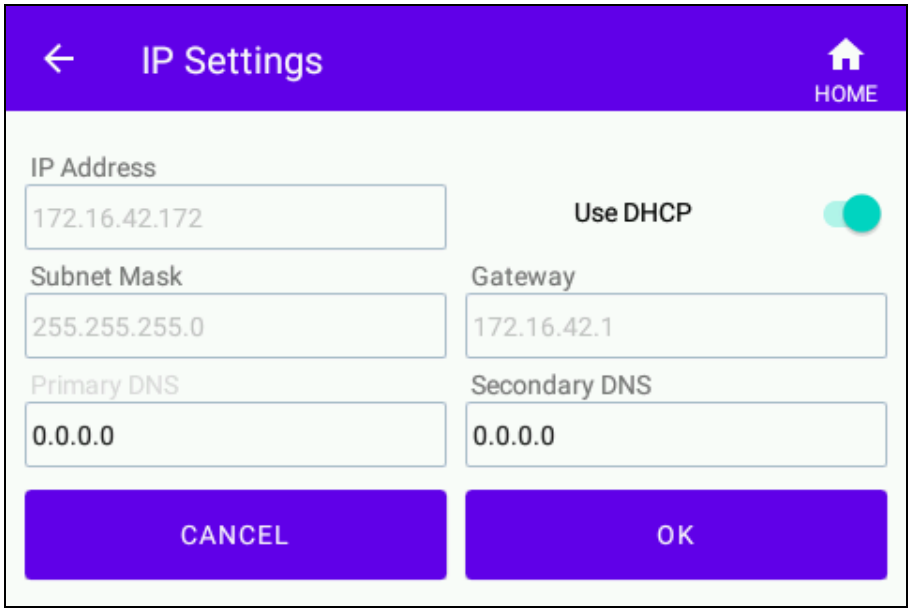


5. Tap the appropriate encryption type used by the WAP to populate the setting in the **Confirmation Info** screen.
6. Tap the **Password** text field to display an on-screen keyboard.
7. Enter the password used to connect to the WAP.
8. Tap **OK**.

The touch screen attempts to connect to the WAP using the provided credentials. If a connection is established, the **Wi-Fi Setup** page updates to show a **Connected** status and information about the Wi-Fi connection.

Configure IP Settings

Tap **IP Settings** to display the **IP Settings** screen.



Use the **IP Settings** screen to configure DHCP and to set a static IP address if DHCP is turned off.

> **NOTE:** DHCP is turned on by default for the Wi-Fi network connection.

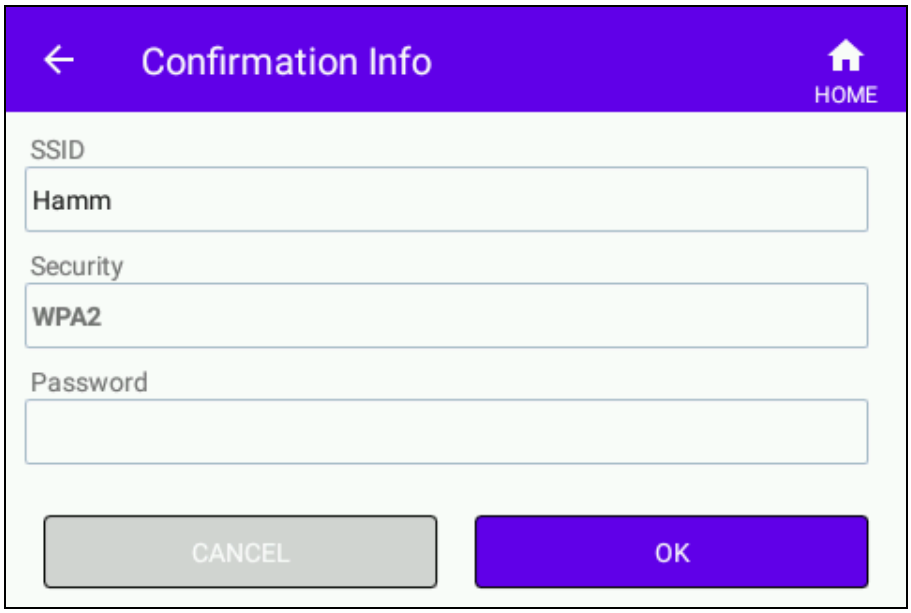
- Turn on the **Use DHCP** toggle to turn on DHCP for the Wi-Fi network connection.
- If **Use DHCP** is turned off, static IP addresses can be entered manually. Tap the text fields under **IP Address**, **Subnet Mask**, **Gateway**, **Primary DNS**, or **Secondary DNS** to display an on-screen keyboard for editing the respective setting.

After any changes have been made, select **OK** to apply the new settings and restart the touch screen (if required). Select **Cancel** to cancel the changes.

Select the back arrow button to return to the **Wi-Fi Setup** screen.

Edit the Active Wi-Fi Access Point

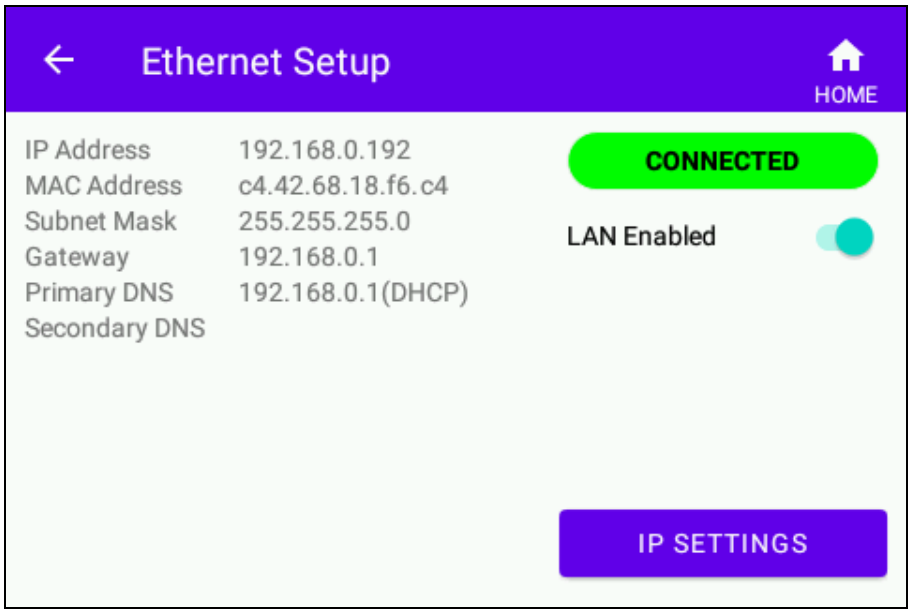
Tap the **SSID** name on the **Wi-Fi Setup** screen to display the **Confirmation Info** screen for the active WAP.



Tap the **SSID**, **Security**, and **Password** fields to edit their respective settings. After any changes have been made, select **OK** to apply the settings. Select **Cancel** to cancel the changes.

Ethernet Setup

Tap **Ethernet Setup** on the **Device Settings** screen to display the **Ethernet Setup** screen.



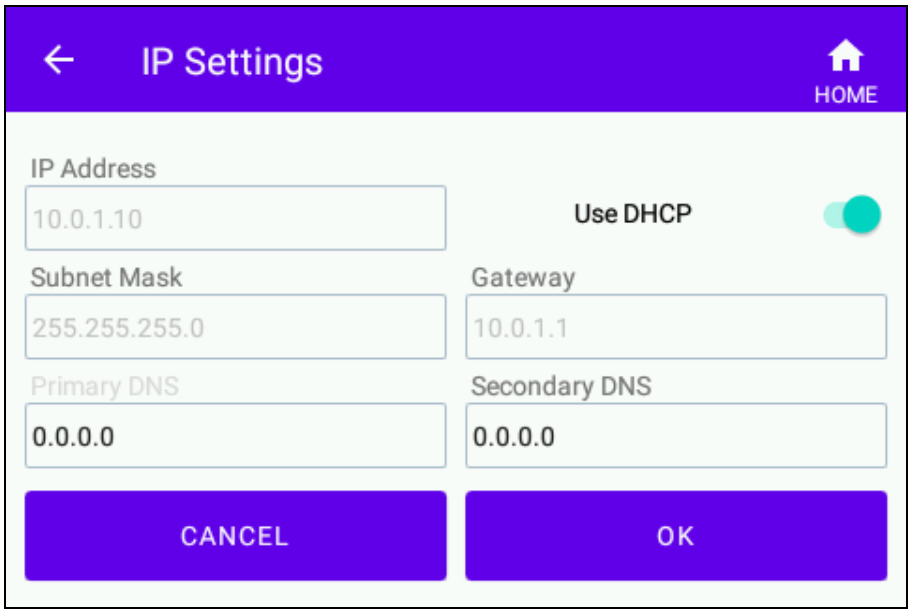
Use the **Ethernet Setup** screen to view the Ethernet IP and MAC addresses, subnet mask address, default router address, and primary and secondary DNS addresses. A status bar is provided to indicate the status of the Ethernet connection (**Connected** or **Not Connected**).

Turn on the **LAN Enabled** toggle to turn on the Ethernet adapter. If the **LAN Enabled** toggle is turned off, Ethernet will not function and a Wi-Fi network connection can be established.

Tap the **Home** button at the top of the screen at any time to return to the **Device Settings** screen.

Configure IP Settings

Tap **IP Settings** to display the **IP Settings** screen.



Use the **IP Settings** screen to configure DHCP and to set a static IP address if DHCP is turned off.

> **NOTE:** DHCP is turned on by default for the Ethernet connection.

- Turn on the **Use DHCP** toggle to turn on DHCP for the Ethernet connection.
- If **Use DHCP** is turned off, static IP addresses can be entered manually. Tap the text fields under **IP Address**, **Subnet Mask**, **Gateway**, **Primary DNS**, or **Secondary DNS** to display an on-screen keyboard for editing the respective setting.

After any changes have been made, select **OK** to apply the new settings and restart the touch screen (if required). Select **Cancel** to cancel the changes.

Select the back arrow button to return to the **Ethernet Setup** screen.

Application Selection

The touch screen ships with a variety of preinstalled applications that provide out-of-the-box functionality. Once an application has been selected, it downloads from the cloud and installs on the touch screen automatically.

The following applications ship with the touch screen:

- Crestron Scheduling application
- Appspace® workplace management application
- Tango Reserve by AgilQuest® workplace management application

> **NOTE:** Support for additional applications will be provided by future firmware updates.

The touch screen runs only one app, which is selected at setup. Only the apps approved and delivered by Crestron may run on the touch screen.

> **NOTE:** Additional subscriptions and/or licenses may be required. Refer to each provider's website for details about the capabilities and requirements of its scheduling application and services.

For more information on using and setting up each application, refer to the provider's website.

Configure Microsoft Graph for Crestron Scheduling

This topic describes how to configure Microsoft Graph support for the Crestron Scheduling app when using the Office 365® scheduling calendar.

Microsoft Graph is provided by the Microsoft Entra® service to allow access to Microsoft Cloud service resources. Once Microsoft Graph is configured, the Crestron Scheduling app uses this access method to provide heightened user authentication.

> **NOTE:** If access has not been granted for Microsoft Graph configuration or if account has not been provided to access the Microsoft Entra tenant, contact the tenant administrator within your organization's IT department.

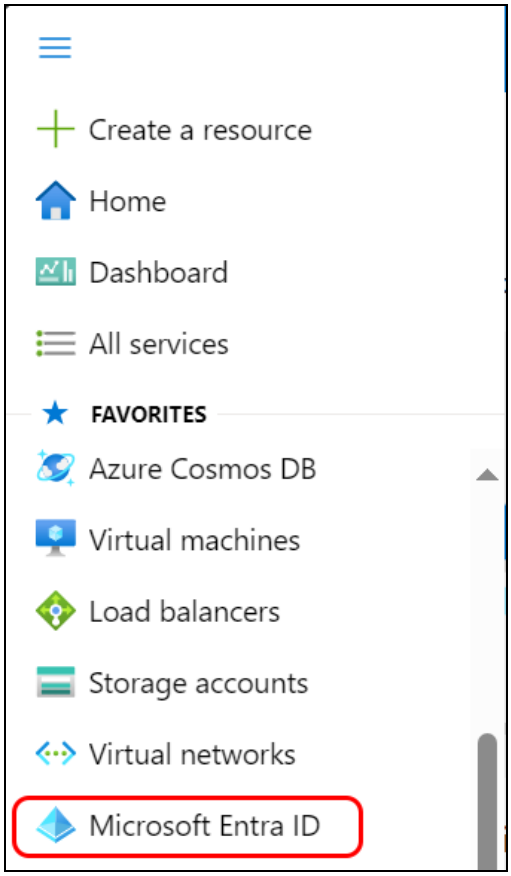
Configure the Crestron Scheduling App

Use the following procedures to define a new application in Microsoft Entra.

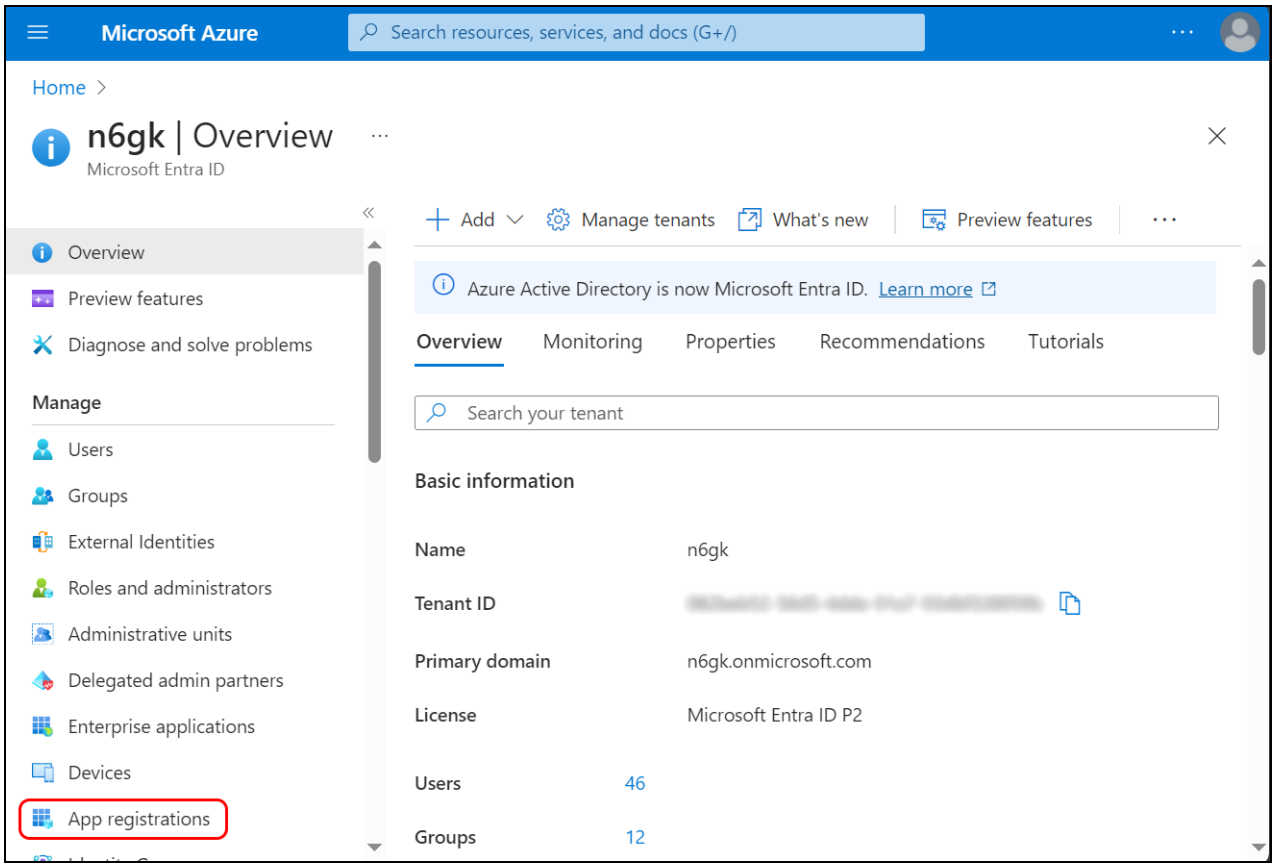
> **NOTE:** Only one Microsoft Graph application is required for all touch screens running the Crestron Scheduling app within the same Microsoft Entra tenant. The Microsoft Graph application credentials (outside of the calendar email address) can be reused for all touch screens within the same deployment.

Create the Crestron Scheduling App

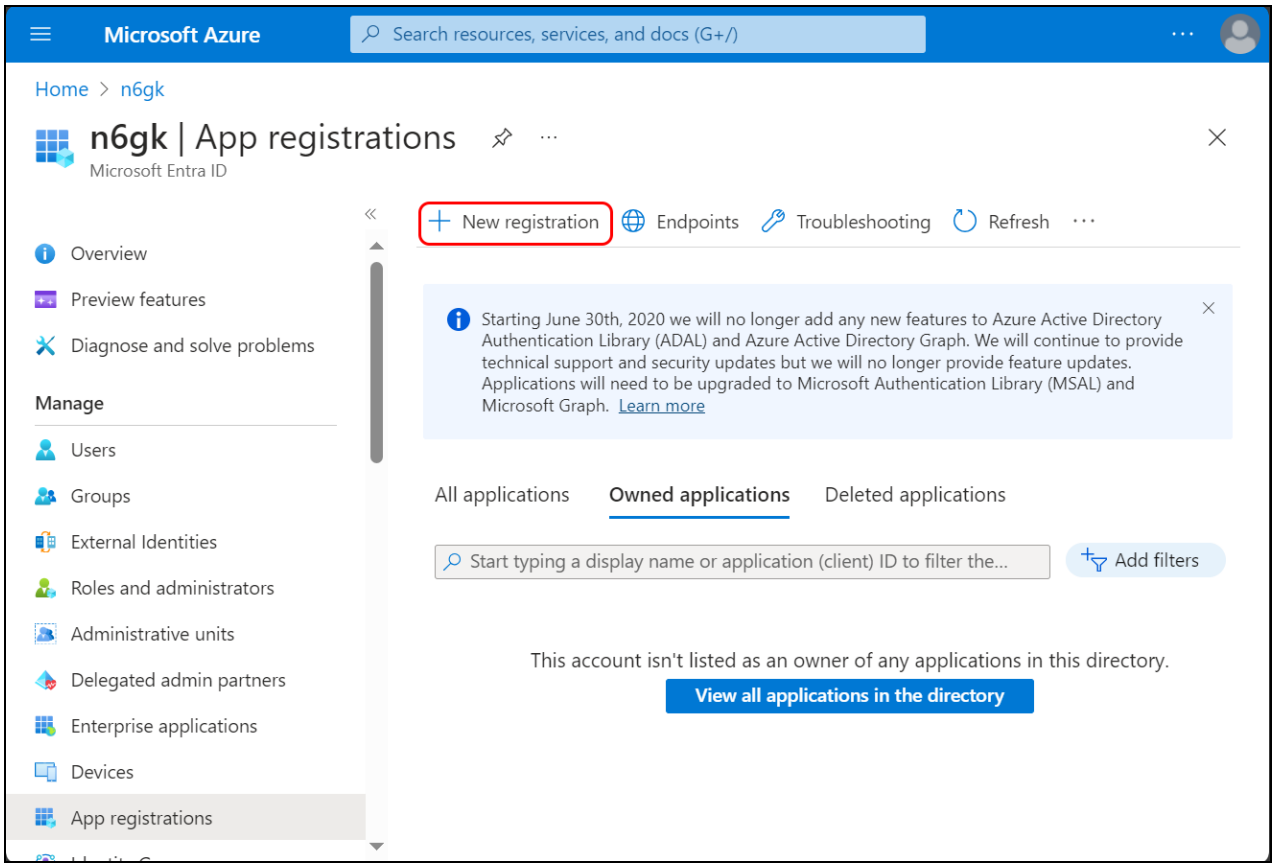
1. Sign into the Microsoft Entra portal with a user ID with sufficient permissions to create an app.
2. Select **Microsoft Entra ID** from the left navigation menu.



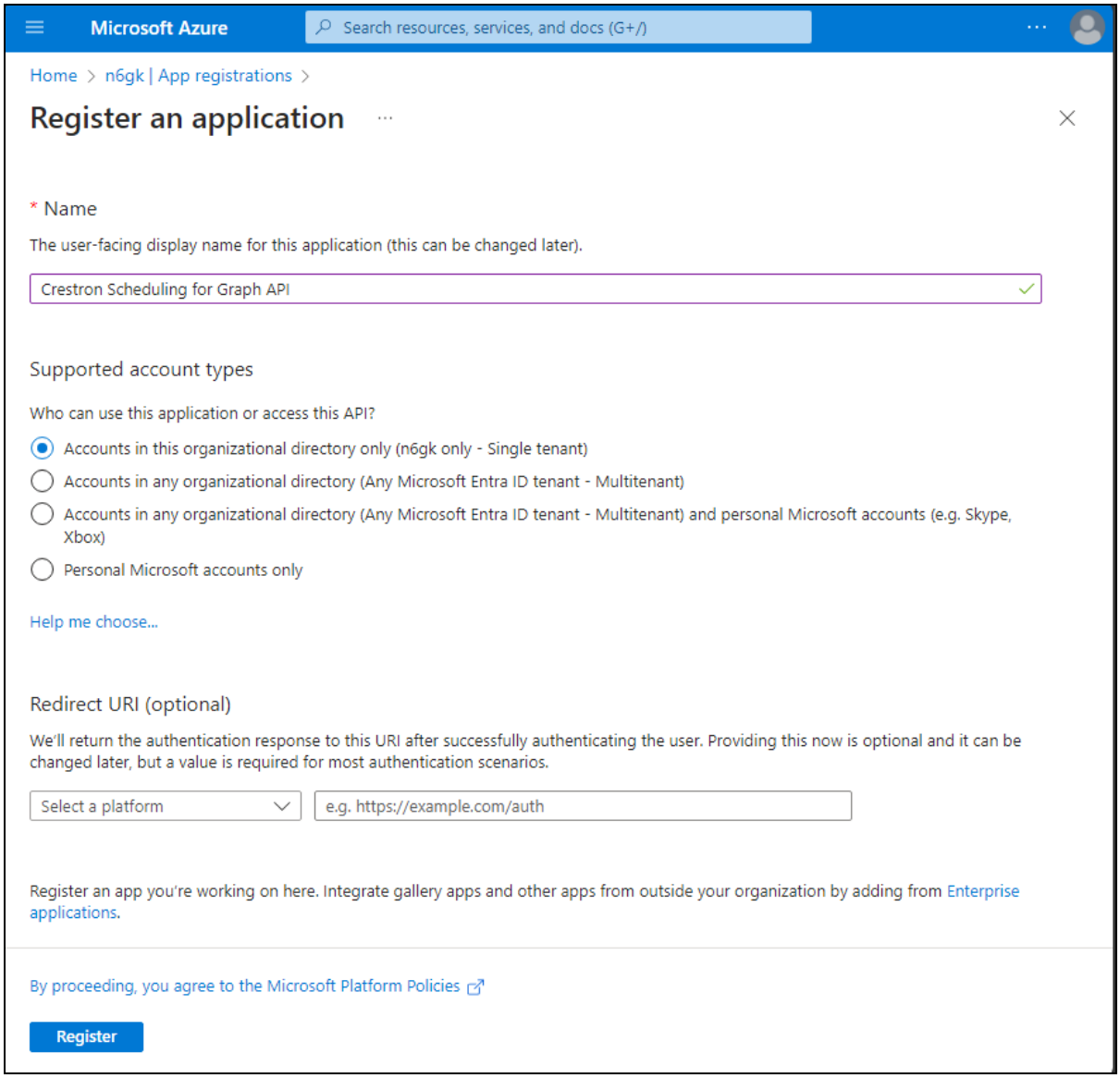
3. Select **App registrations** from the Microsoft Entra widget menu.



4. Select **+ New registration**.



A dialog box for creating the app is displayed.



5. Enter the following information:
   - **Name:** Enter a user-facing name of the application (in the Microsoft Entra environment). This can be any string 120 characters or less. It is possible to have more than one application registered with the same display name.
   - **Supported account types:** Select the supported account type. Only the **Accounts in this organizational directory only** option is supported by the Crestron Scheduling app at this time.

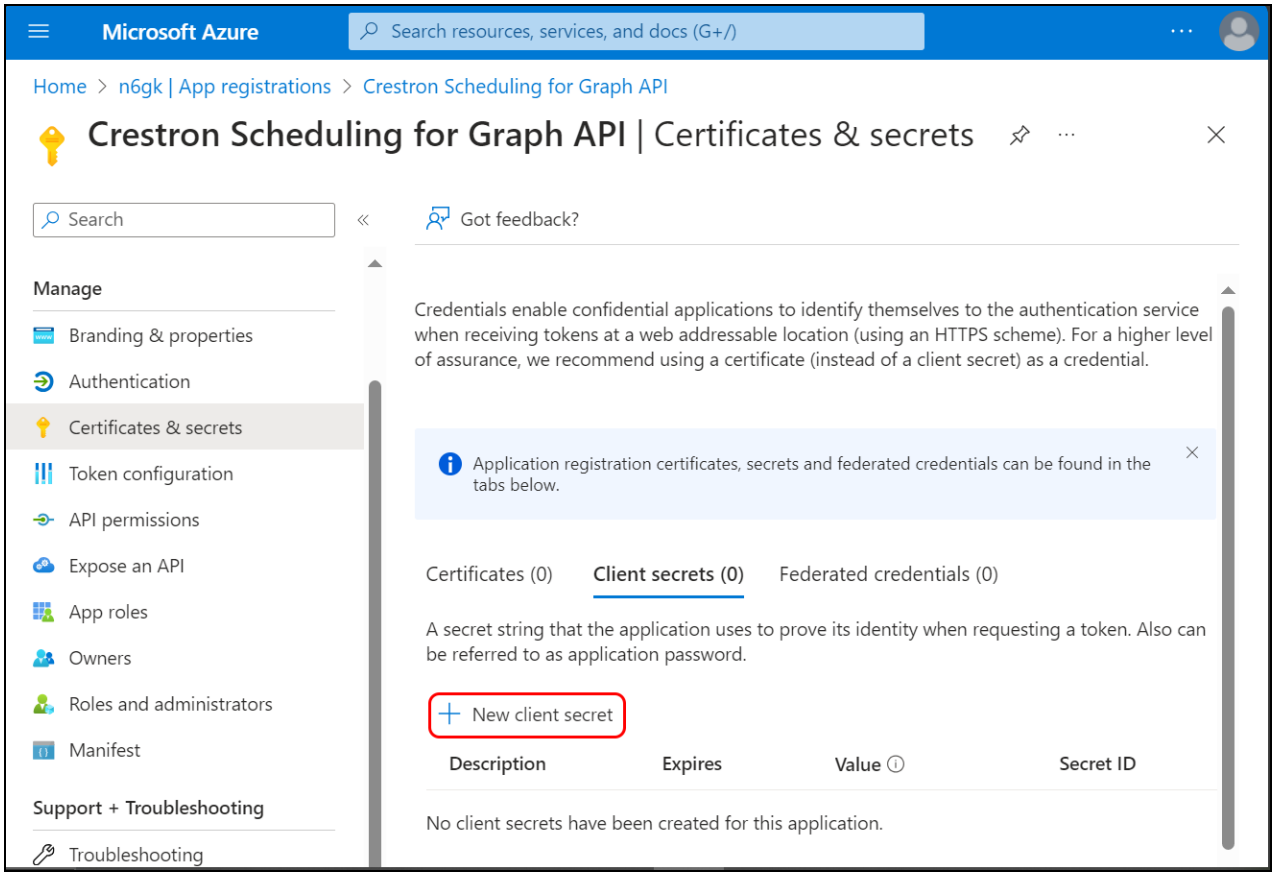
   > **NOTE:** The **Redirect URI (optional)** settings are not configured for this application.

6. Select **Register**.

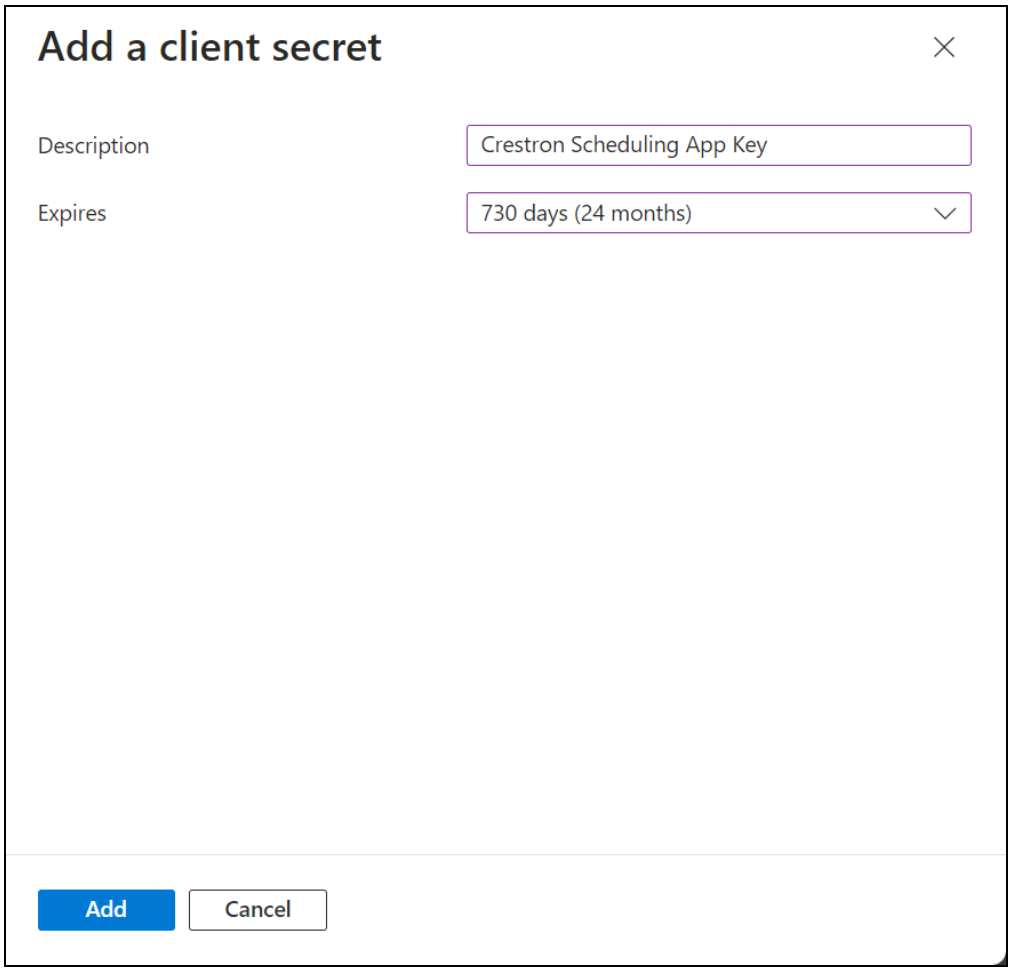
Create a Client Secret

Once the app is registered, a client secret must be created to connect the Crestron Scheduling App to the Microsoft Entra app.

1. Select **App registrations** from the Microsoft Entra widget menu.
2. Select the application created for the Crestron Scheduling App. An application dialog box is displayed.
3. Select **Certificates & secrets** from the navigation menu. The **Certificates & secrets** page for the Microsoft Entra app is displayed.

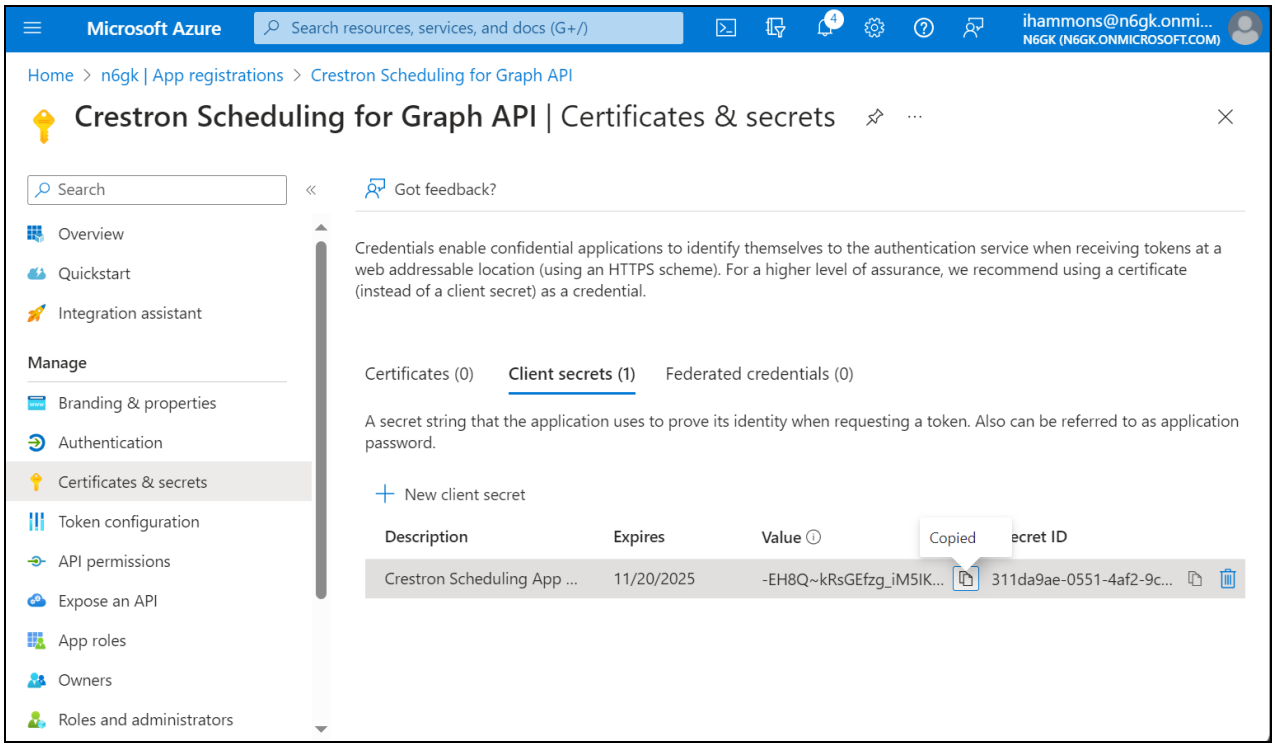


4. Select **+ New client secret**. The **Add a client secret** dialog box is displayed.



5. Enter the following information:
   - **Description:** Enter a description for the client secret.
   - **Expires:** Select the duration before the client secret expires from the drop-down menu.
6. Select **Add**. The new client secret is added to the **Certificates & secrets** page for the Microsoft Entra app.
7. Copy the client secret **Value** to the clipboard or a location where it can be accessed later when configuring the Crestron Scheduling App as described in Connect the Scheduling App to Microsoft Graph on page 124.

> **NOTE:** The client secret **Value** is available only after it is first created. If the client secret **Value** is not copied before navigating away from the **Certificates & secrets** page, it will no longer be visible, and a new client secret must be created.



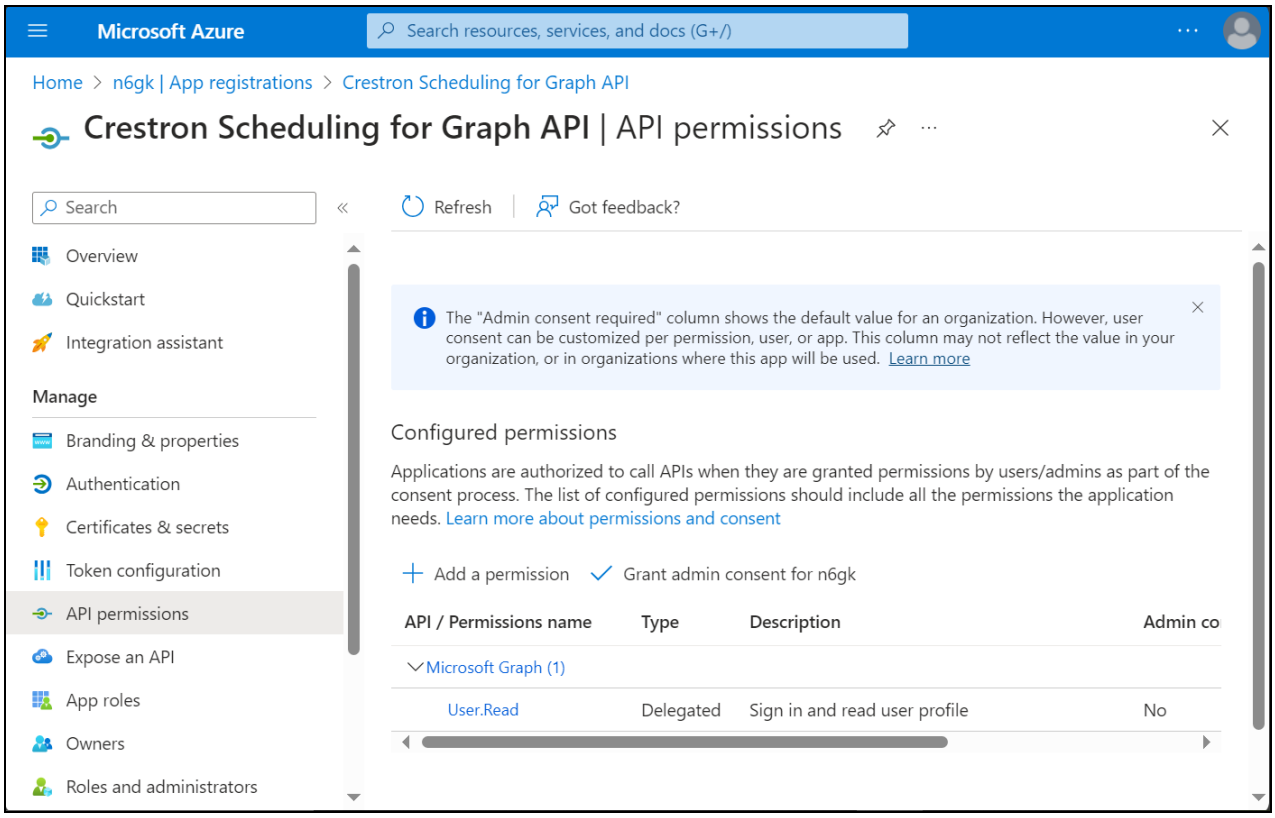
Add API Permissions

Use the following procedure to set Microsoft Graph API permissions for the Crestron Scheduling App.

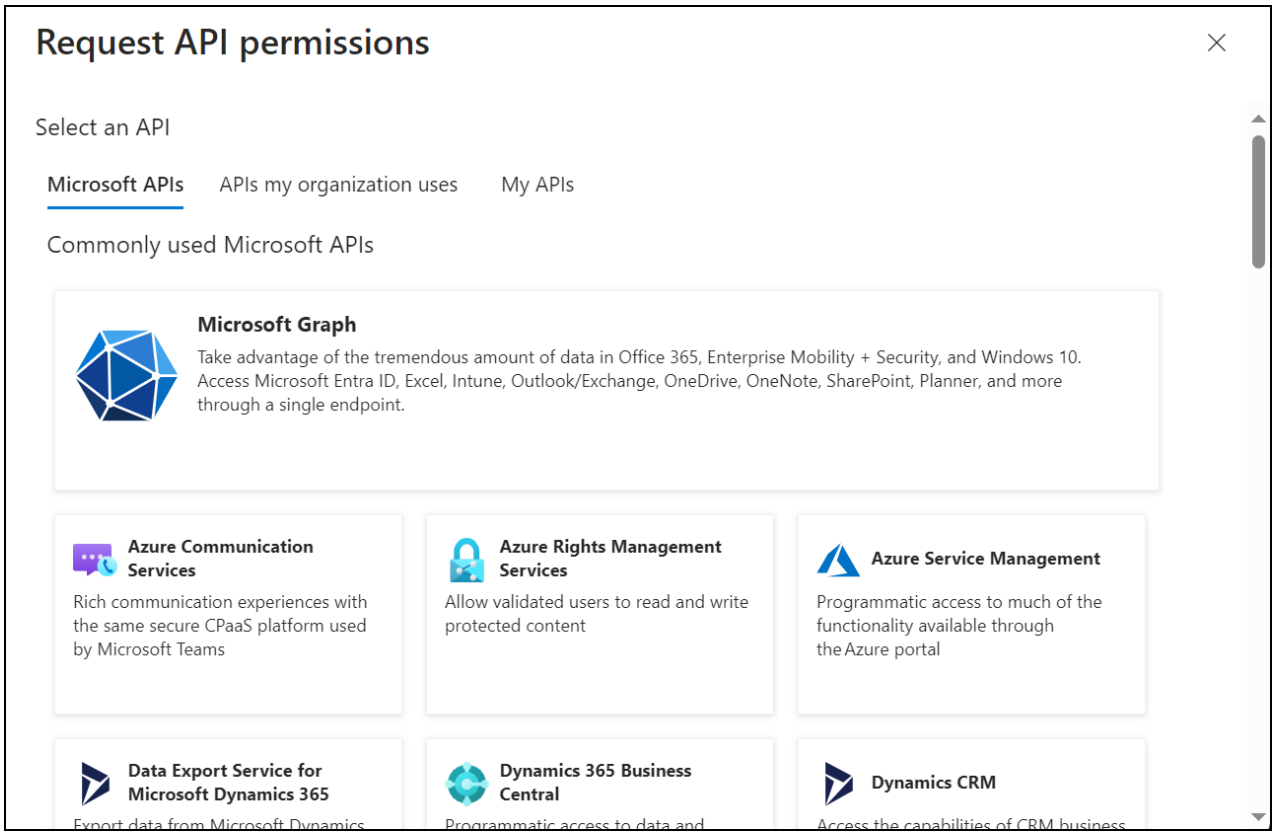
> **NOTE:** The Microsoft Entra app is created with one global API permission by default (**Users.Read**). This permission can be removed since it will be added later at the application level.

1. Select **App registrations** from the Microsoft Entra widget menu.
2. Select the application created for the Crestron Scheduling App. An application dialog box is displayed.

3. Select **API permissions** from the navigation menu. The **API permissions** page for the Microsoft Entra app is displayed.

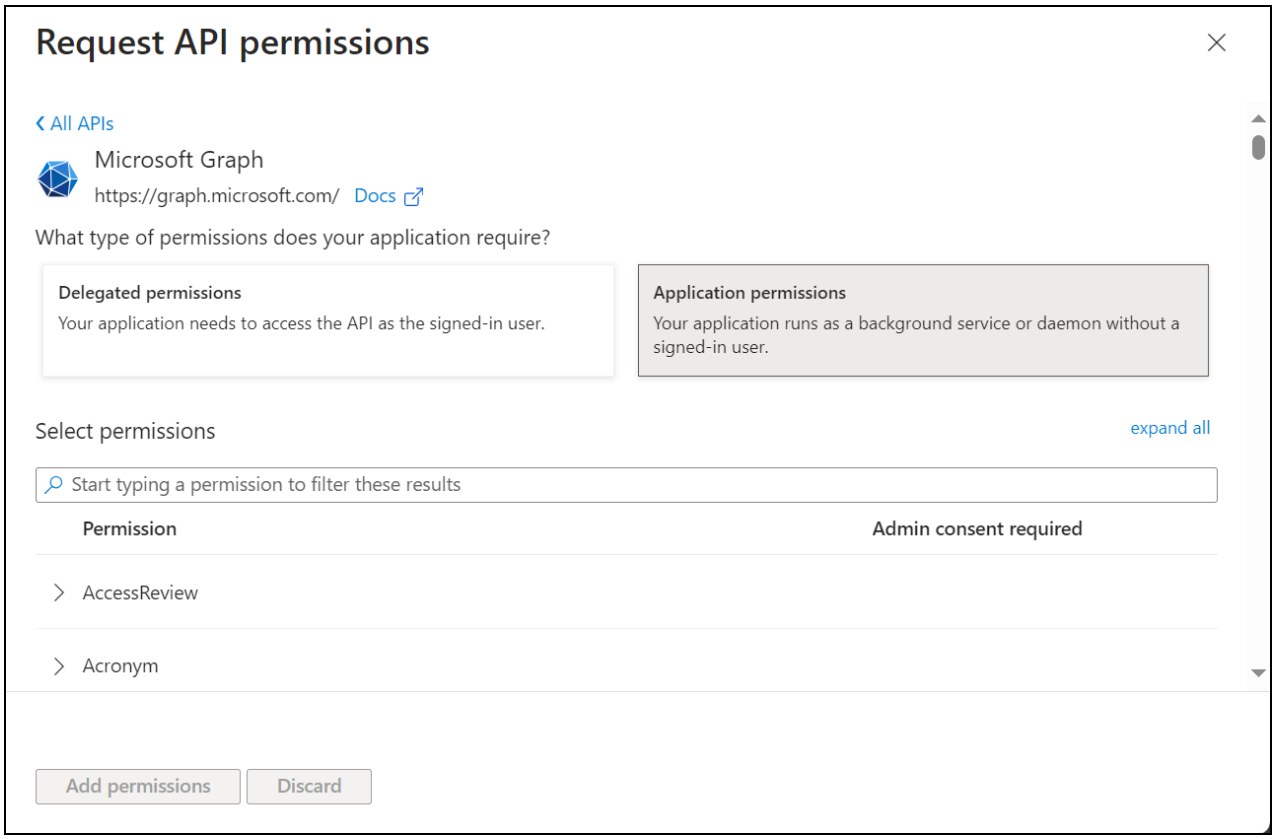


4. Select **+ Add a permission**. The **Request API permissions** dialog box is displayed.



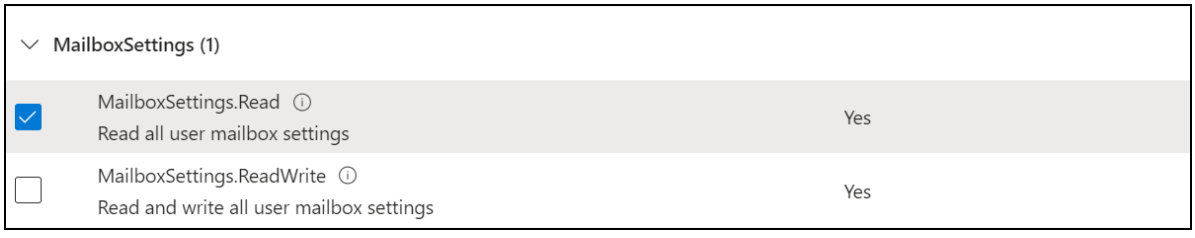
5. Select **Microsoft Graph**. Permissions for the Microsoft Graph API are displayed.
6. Select **Application permissions** for the required permission type.

> **NOTE:** Delegated permissions require that the app acts on the behalf of a logged-in user. Since the app has its own key, permissions are granted to the app directly.

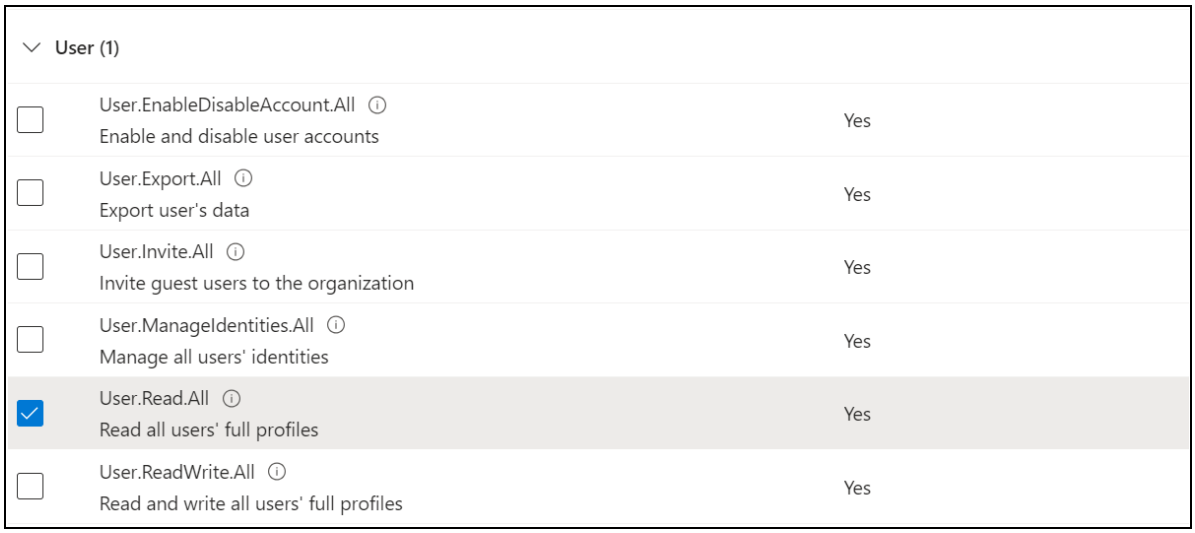


7. Fill the appropriate check boxes to select the following permissions:
   - Within the **Calendars** section, select **Calendars.ReadWrite**.

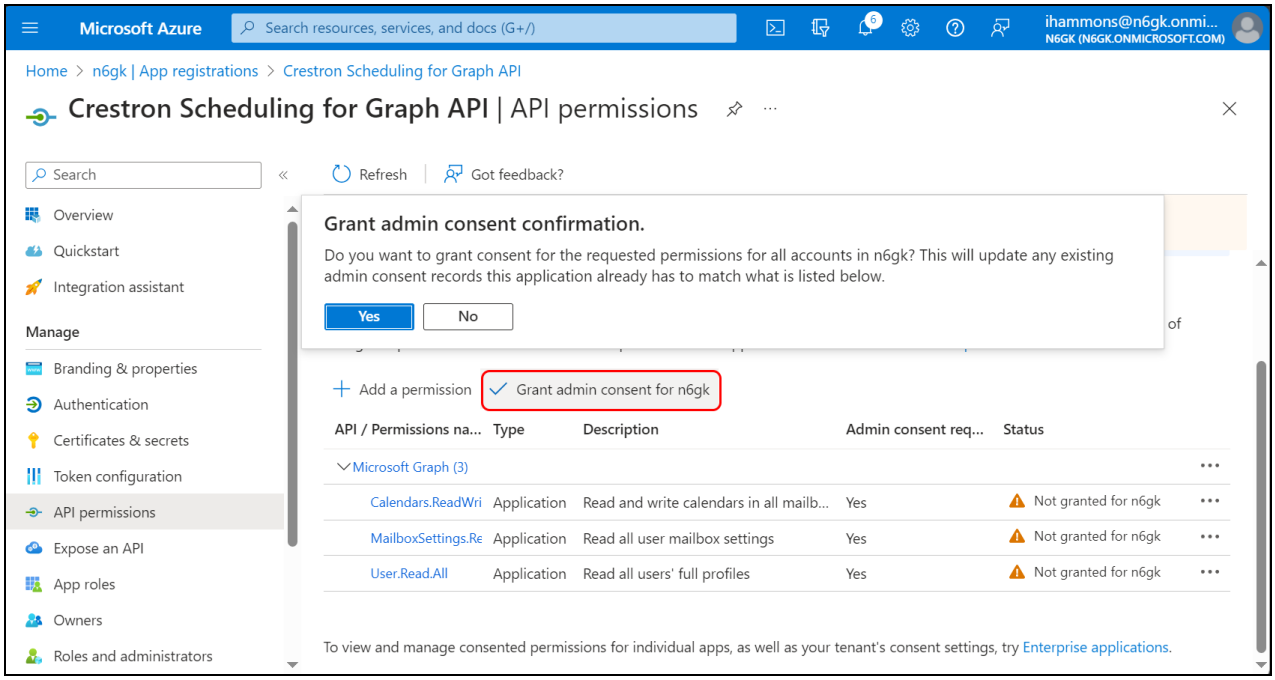
   - Within the **MailboxSettings** section, select **MailboxSettings.Read**.



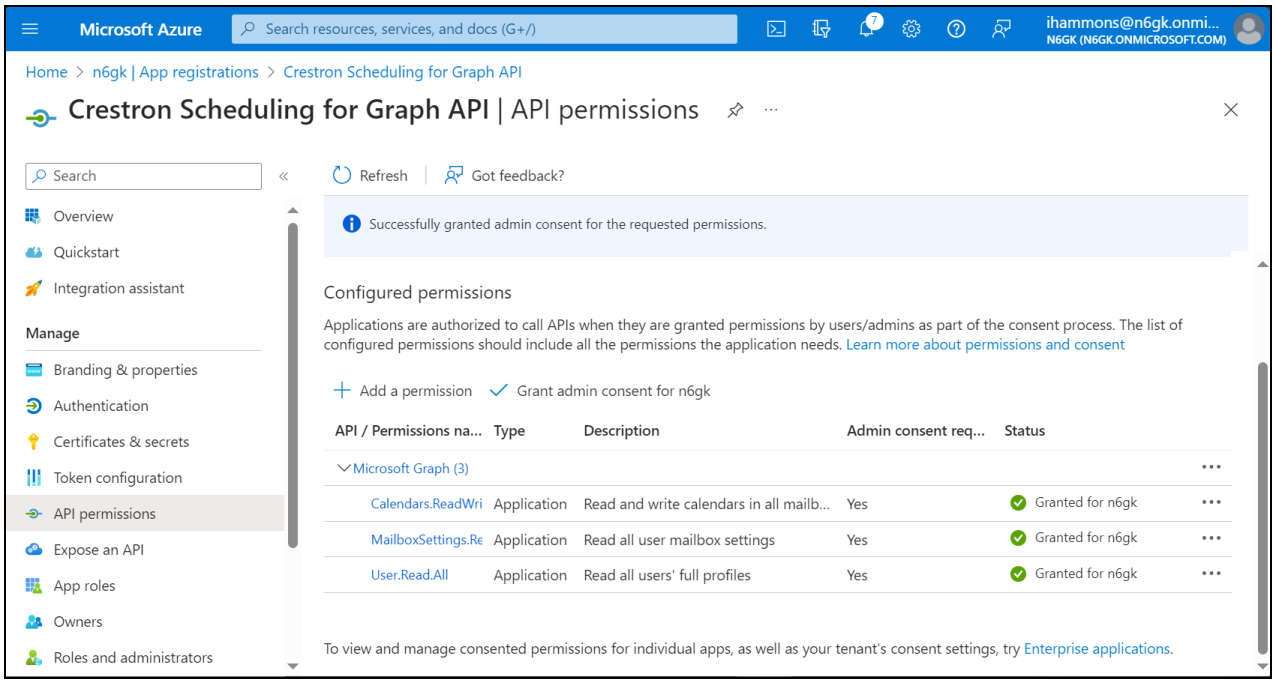
- Within the **Users** section, select **User.ReadAll**.



8. Select **Add permissions**. The three permissions are added under the **Configured permissions** section of the **API permissions** page for the Microsoft Entra app.
9. Select **Grant admin consent for [Microsoft Entra Account Name]** for the three added permissions, where **[Microsoft Entra Account Name]** is the name of the active Microsoft Entra account, then select **Yes** when prompted within the dialog box that is displayed.



10. Verify that the **Status** column for each permission changes to show a green check icon and states that permission has been granted for the active Microsoft Entra account.

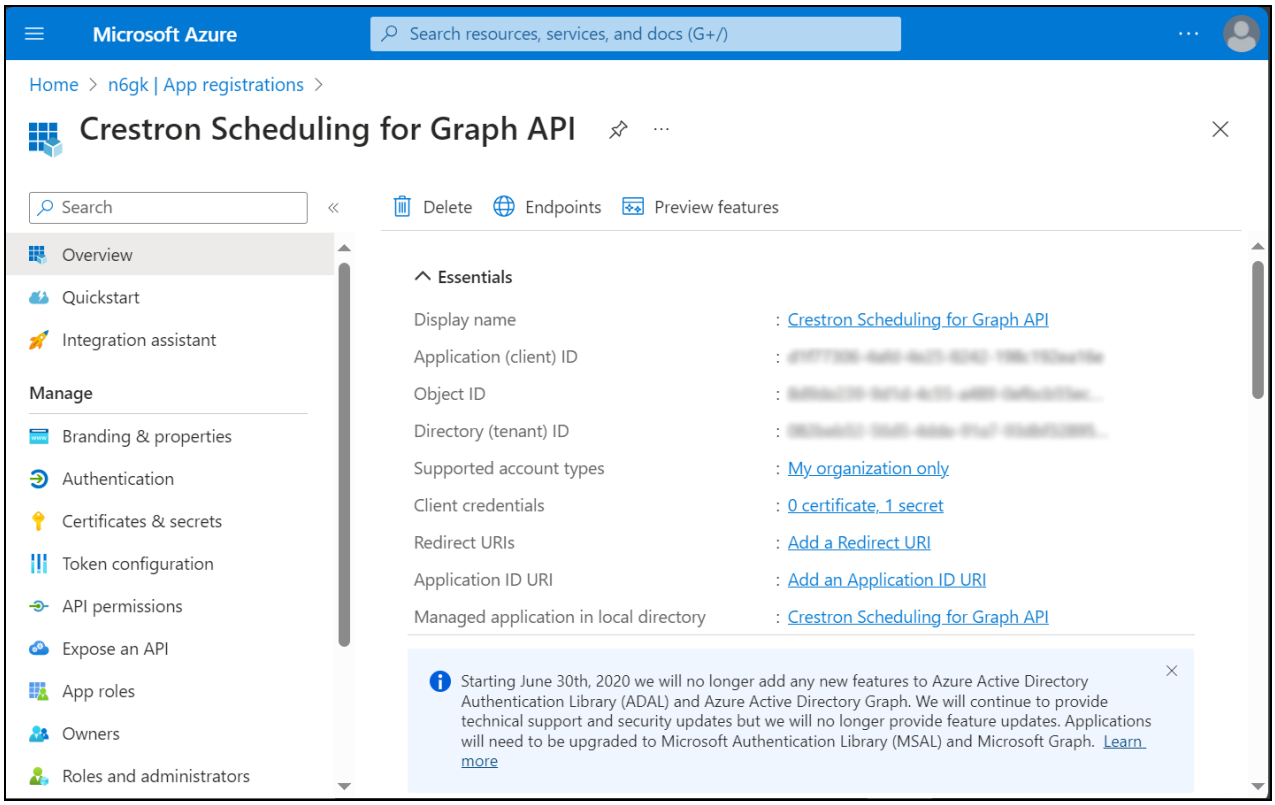


Obtain Authentication IDs

Use the following procedure to obtain the application and directory IDs that are required to connect the Crestron Scheduling app to the Microsoft Entra app.

1. Select **App registrations** from the Microsoft Entra widget menu.
2. Select the application created for the Crestron Scheduling app. An application dialog box is displayed.

3. Select **Overview** from the navigation menu. Information about the Microsoft Entra app is provided.



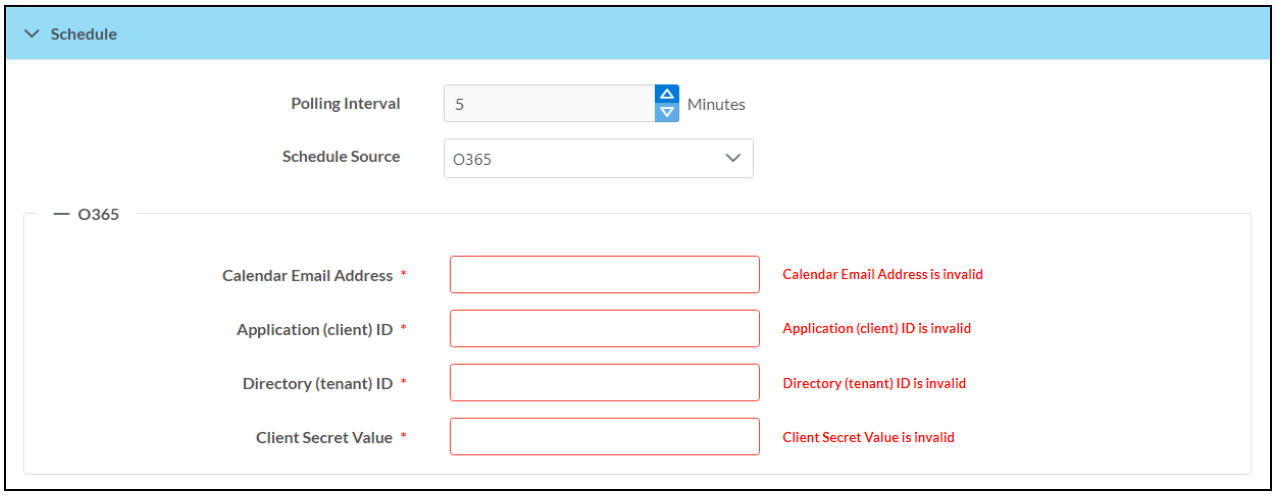
4. Copy the following fields from the **Overview** pane to an accessible location. Use the **Copy to Clipboard** button that appears when hovering over each field to ensure accuracy.
    - **Application (client) ID**: The unique identification string for the Microsoft Entra app.
    - **Directory (tenant) ID**: The unique identification string for the Microsoft Entra directory.

Connect the Scheduling App to Microsoft Graph

Once an app has been registered in Microsoft Entra, the Crestron Scheduling app can be connected to Microsoft Graph from the touch screen web configuration interface.

To connect the Crestron Scheduling App to Microsoft Graph:

1. Navigate to **Settings** > **Schedule**.
2. Select **O365** from the **Schedule Source** drop-down menu.



3. Enter the following information in the appropriate fields:
   - Enter the email address associated with the Office 365 scheduling calendar in the **Calendar Email Address** text field.
   - Copy and paste the application (client) ID obtained in Obtain Authentication IDs on page 122 into the **Application (client) ID** text field.
   - Copy and paste the directory (tenant) ID obtained in Obtain Authentication IDs on page 122 into the **Directory (tenant) ID** text field.
   - Copy and paste the client secret value obtained in Create a Client Secret on page 115 into the **Client Secret Value** text field.
4. Select **Save Changes** from the **Action** menu. The Office 365 scheduling calendar connects to the scheduling application without requiring a restart.

Perform a Factory Restore

If the TSS-470E must be restored to its factory default settings, perform the following recovery procedure.

CAUTION: Performing a factory restore returns all settings to their default values (except for application settings) and removes any static IP addresses and wireless access points (WAPs) that were previously added.

1. Press the **RESET** button on the rear of the touch screen. The touch screen will begin to reset.
2. Once the Crestron logo is shown on the touch screen display, the reset process has completed. Press the **RESET** button again.
3. Repeat steps 1–2 to perform the reset process 9 more times (for a total of 11 times).

After the 11th reset, the touch screen enters recovery mode and performs a file system cleanup without prompting. After the cleanup has finished, controls are displayed for restarting or restoring the touch screen. Select **Factory Restore Menu**, and then follow the provided instructions to restore the touch screen.

Once the touch screen restarts after completing the factory restore process, it can be configured as described in Initial Setup on page 47.

Operation

The touch screen is controlled by using its capacitive touch screen display. The touch screen supports gesturing and swiping controls to perform various functions. Supported touch controls vary by application or program.

The following sections describe controls that are available when using the native Crestron Scheduling app in desk mode and room mode. For more information on setting the Crestron Scheduling app modes, refer to Applications on page 91.

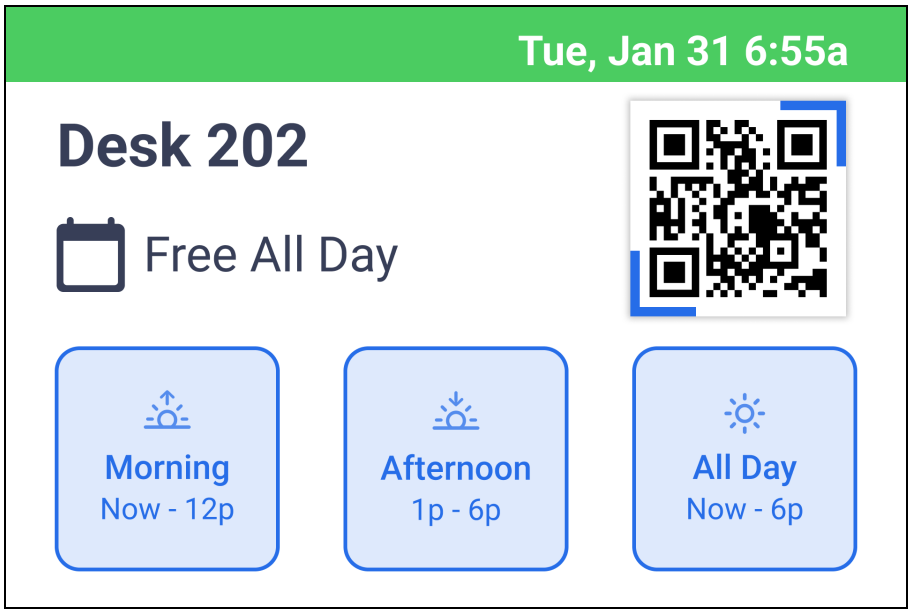
> **NOTE:** Alternatively, press and hold three fingers on the desk or room name in the user interface to switch between modes locally.

Crestron Desk Scheduling User Interface

If **Desk Mode** is selected for the Crestron Scheduling app, the Crestron Desk Scheduling user interface is displayed.

The Crestron Desk Scheduling user interface allows a user to reserve and obtain schedule information for the current desk. The user interface comprises screens that display the status of the desk and that provide options for scheduling reservations, determining the desk availability, and performing other reservation-related functions.

The following image shows a typical user interface screen when the desk is available.



NOTE: The information displayed on the user interface may vary depending upon how the scheduling application settings have been configured.

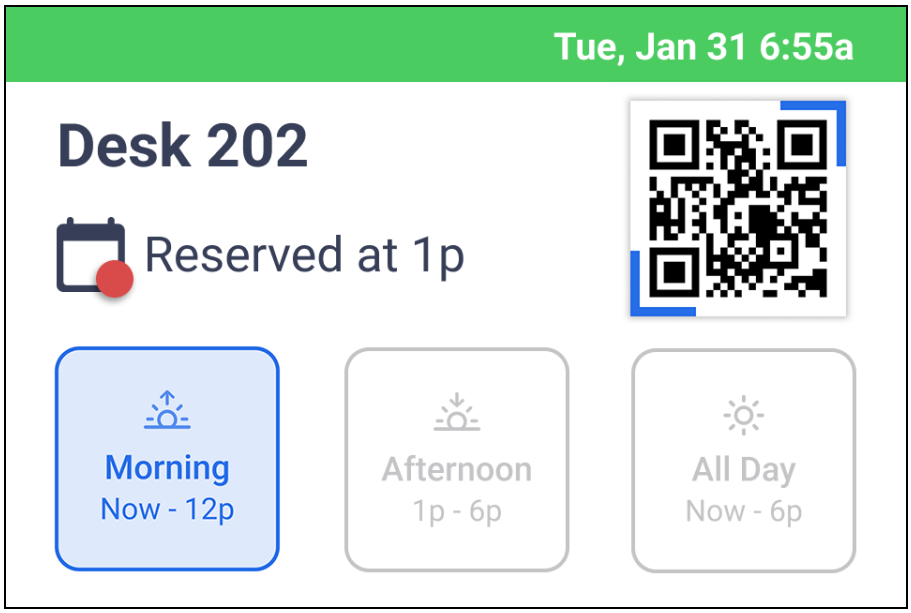
The user interface indicates whether the desk is available, scheduled for an upcoming reservation, or reserved. The current desk status may be determined by the color of the interface on the display:

- If the desk is not reserved, the interface displays a green available screen and shows the start time of the next scheduled reservation (if available).
- If the desk is scheduled for a reservation within the next hour, the interface displays an amber upcoming reservation screen and shows the start time of the next scheduled reservation and options for checking in (if configured).
- If the desk is reserved, the interface displays a red reserved screen and shows the end time of the current reservation.

These screens are described in the sections that follow.

Available Screen

If the desk is available, the available screen indicates that the desk is available with a green background. The available screen shows the start time of the next scheduled reservation (if available) or shows a message indicating that the desk is available for the entire day.



The following information and controls are provided:

- The desk name and the current date and time.
- Indicates that the desk is free all day or shows the start time of the next reservation (if one is scheduled).
- Buttons that allow the desk to be reserved for **Morning**, **Afternoon**, and **All Day** time periods.

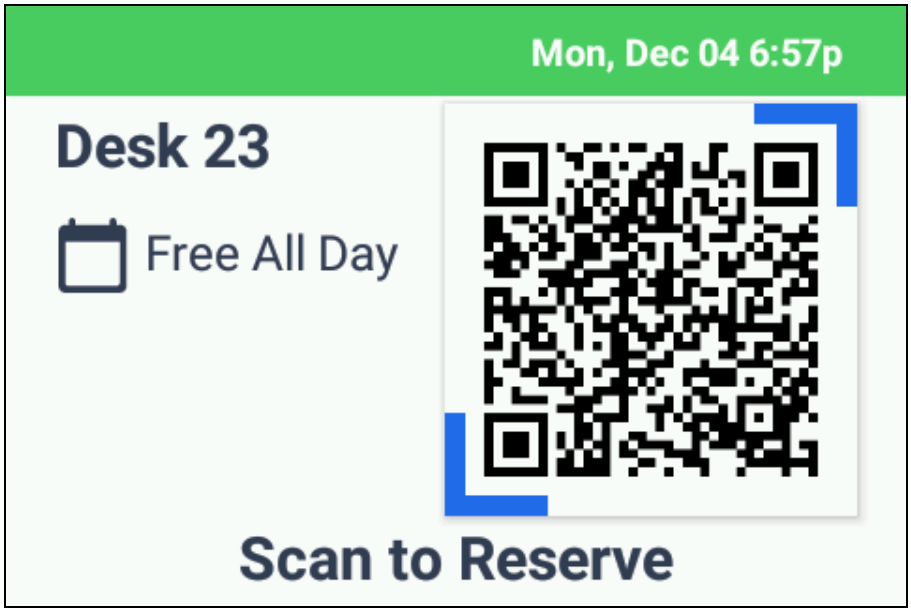
> **NOTE:** A time period button can be selected only if the current time is before or within that specified range and if no other meetings have been scheduled within that range. Buttons for previous time periods are hidden from the available screen for the remainder of the day.

- A calendar icon that can be selected to view upcoming reservations for the day.
- A QR code that opens the Microsoft Outlook® sign in page to allow users to create a new reservation with the scheduling calendar resource. The QR code also provides the following functions:
    - Tap the QR code once to expand its size within the UI, allowing for easier scanning by smart devices. Tap the QR again to return it to its normal size.
    - Tap the QR code twice to push the latest data from the scheduling calendar to the touch screen immediately. Otherwise, the latest scheduling calendar data will be pushed to the touch screen later based on a configured polling interval.

If the desk is available and can be reserved (as indicated by the green available screen), an ad hoc reservation may be created from the touch screen.

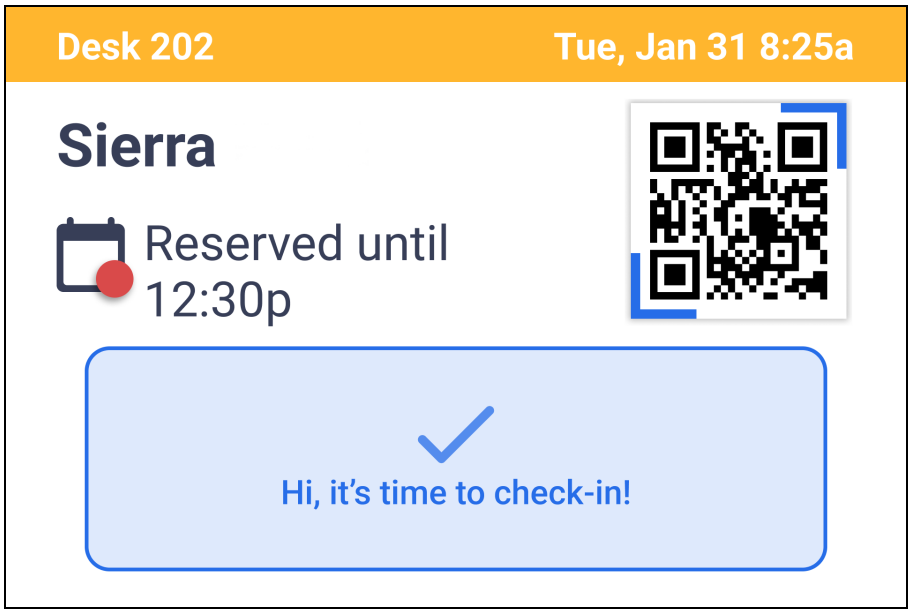
To create an ad hoc reservation, tap one of the available time period buttons (**Morning**, **Afternoon**, or **All Day**). Once reserved, the desk status changes to reserved, and the ad hoc reservation information is displayed on the screen. Ad hoc reservations can also be booked directly through the scheduling calendar resource based on the desk schedule.

If it is past working hours, a "Scan to Reserve" message replaces the time period buttons, allowing the desk to be reserved for the following day via the scheduling calendar resource.



Upcoming Reservation Screen

If the desk is available but a reservation is scheduled to occur within the next hour, an amber upcoming reservation screen is shown name and start (or end) time of the upcoming reservation. An ad hoc reservation may not be created from the touch screen at this time.

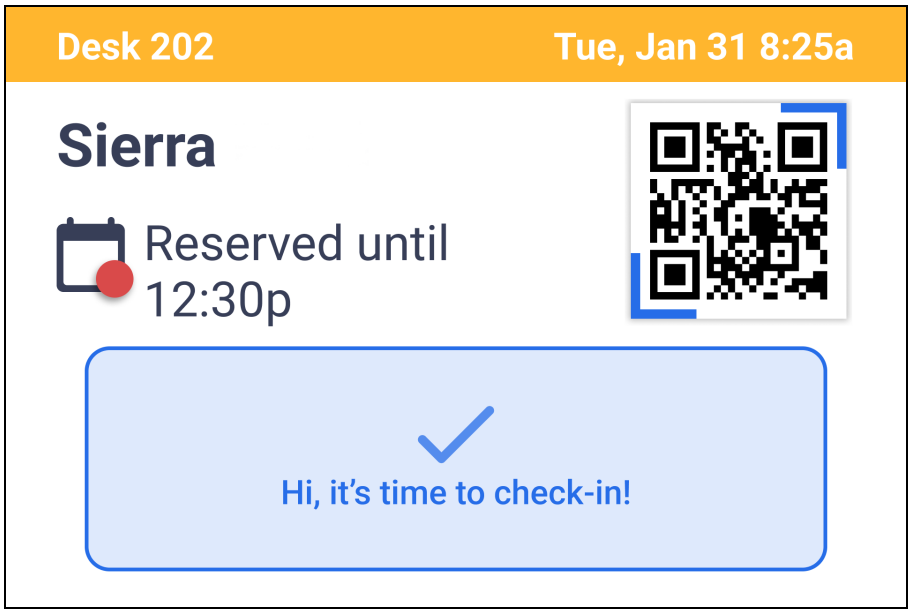


The following information and controls are provided:

- The desk name and the current date and time.
- The organizer or meeting name (if it is not set to private in the scheduling calendar).
- Indicates that the desk will be reserved and shows the start time of the upcoming reservation (or end time if the reservation is in progress).
- A calendar icon that can be selected to view upcoming reservations for the day.
- A QR code that opens the Microsoft Outlook® sign in page to allow users to create a new future reservation with the scheduling calendar resource. The QR code also provides the following functions:
    - Tap the QR code once to expand its size within the UI, allowing for easier scanning by smart devices. Tap the QR again to return it to its normal size.
    - Tap the QR code twice to push the latest data from the scheduling calendar to the touch screen immediately. Otherwise, the latest scheduling calendar data will be pushed to the touch screen later based on a configured polling interval.

Upcoming Reservation Screen (with Check-in Button)

If the check in functionality has been configured, a user may check into their upcoming reservation from the touch screen early. A check in button is provided on the touch screen UI during a specified period before the reservation begins.

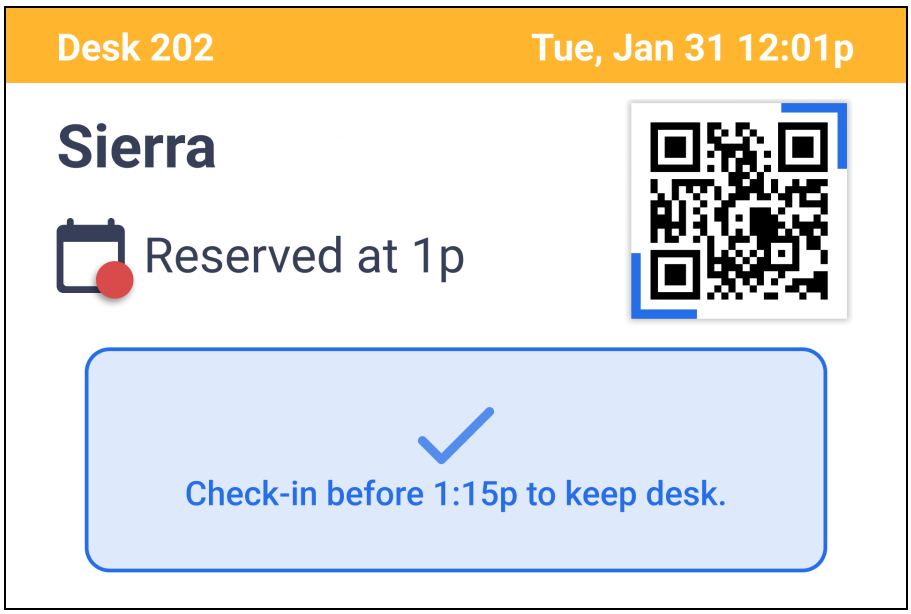


Once the user checks into their reservation by tapping the check in button, the desk enters the reserved state immediately.

> **NOTE:** If the user does not tap the check in button and decline for no show is turned off, the touch screen UI and light bar remain amber for the duration of the reservation.

Upcoming Reservation Screen (with Decline for No Show)

If the check in functionality has been configured with the decline for no show option, a user must check into their reservation during a specified period to keep the reservation. A check in button is provided on the touch screen UI during this period. The check in button also indicates when the reservation will be declined if the user does not check in.

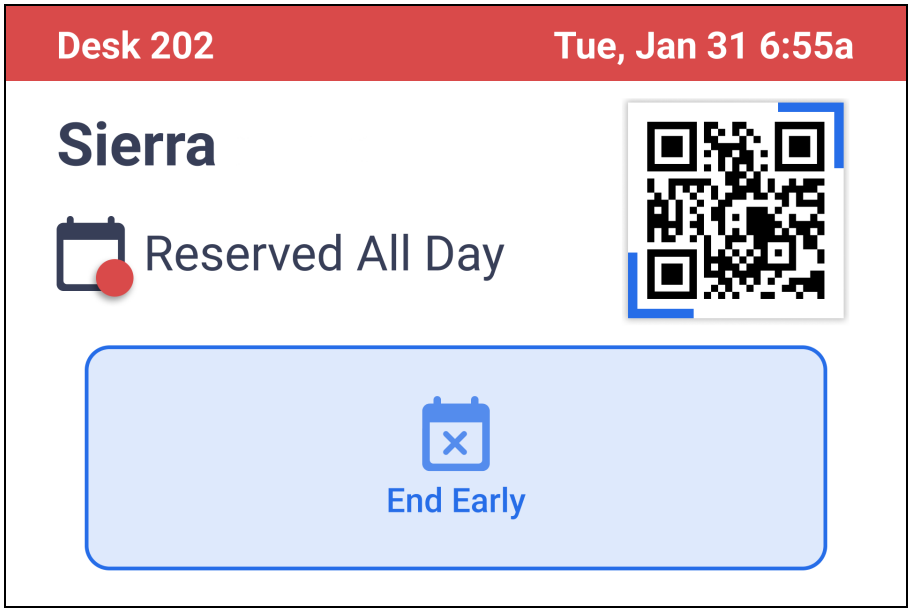


Once the user checks into their reservation by tapping the check in button, the desk enters the reserved state immediately. If the user does not check into their reservation before the check-in period expires, then the reservation is removed from the scheduling calendar and the desk changes back to the available state.

> **NOTE:** For recurring reservations that have been booked through the scheduling calendar, the reservation will be removed from the scheduling calendar only after three consecutive no shows are reported. The reservation will be shortened to the length of the decline for no show period for the first and second reported no shows.

Reserved Screen

If the desk is reserved, the reserved screen indicates that the desk is reserved with a red background. The reserved screen shows the end time of the current reservation.

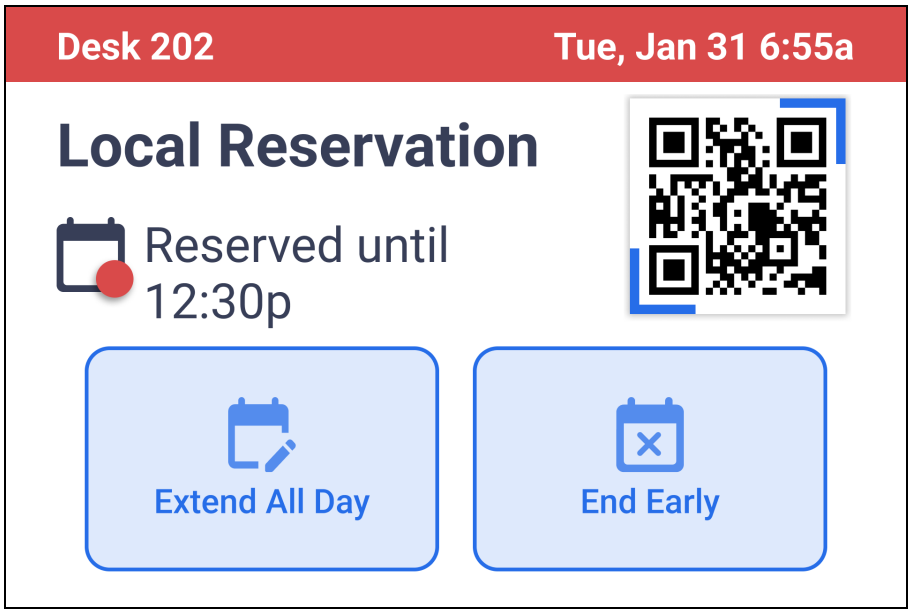


The following information and controls are provided:

- The desk name and the current date and time.
- The organizer or meeting name (if it is not set to private in the scheduling calendar).
- Indicates that the desk is reserved all day or shows the end time of the current reservation.
- An **End Early** button that can be selected to end the current reservation early.
- A calendar icon that can be selected to view upcoming reservations for the day.
- A QR code that opens the Microsoft Outlook® sign in page to allow users to create a new future reservation with the scheduling calendar resource. The QR code also provides the following functions:
    - Tap the QR code once to expand its size within the UI, allowing for easier scanning by smart devices. Tap the QR again to return it to its normal size.
    - Tap the QR code twice to push the latest data from the scheduling calendar to the touch screen immediately. Otherwise, the latest scheduling calendar data will be pushed to the touch screen later based on a configured polling interval.

To end the reservation early, tap **End Early**. Once the reservation is ended, the desk status changes back to available, the reservation is modified in the scheduling calendar, and new reservations can be scheduled.

If the current reservation is only scheduled for part of the day and no other upcoming reservations are scheduled, an **Extend All Day** button is provided that allows the reservation to be extended for the remainder of the work day.



Schedule Screen

Tap the calendar icon within the Crestron Desk Scheduling user interface to display a **Schedule** screen for viewing the desk schedule for the current day.

If a reservation is in progress, the name and duration of the reservation are listed under **Current Reservation**. If upcoming reservations are scheduled, the name and duration of those reservations are listed under **Upcoming Reservations**.

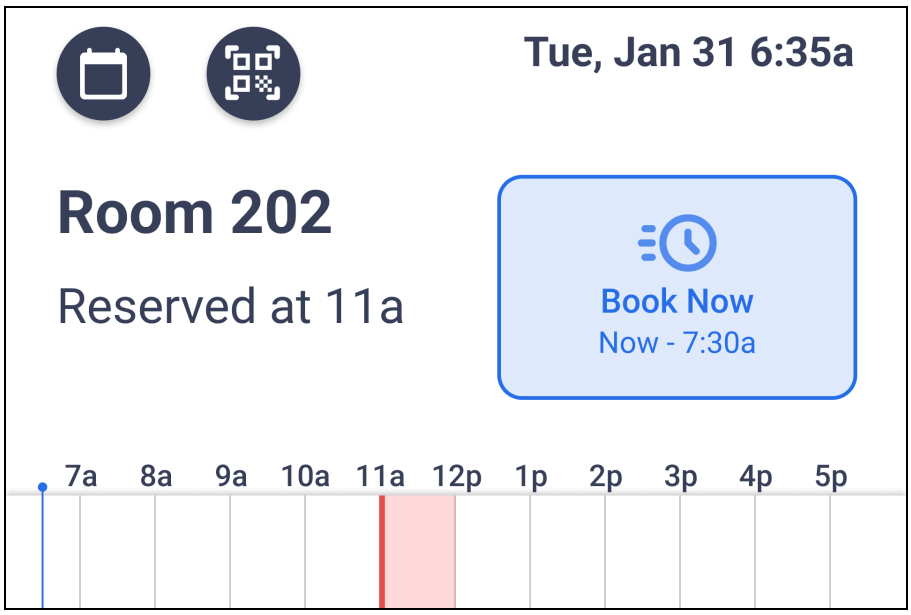
Reservations can be deleted from the **Schedule** screen by swiping left on the reservation. A delete button is shown to the right of the reservation. Tap the delete button to remove the corresponding reservation from the touch screen and the scheduling calendar resource.

Crestron Room Scheduling User Interface

If **Room Mode** is selected for the Crestron Scheduling app, the Crestron Room Scheduling user interface is displayed.

The Crestron Room Scheduling user interface allows a user to reserve and obtain schedule information for the current room. The user interface comprises screens that display the status of the room and that provide options for scheduling reservations, determining the room availability, and performing other reservation-related functions.

The following image shows a typical user interface screen when the room is available.



NOTE: The information displayed on the user interface may vary depending upon how the scheduling application settings have been configured.

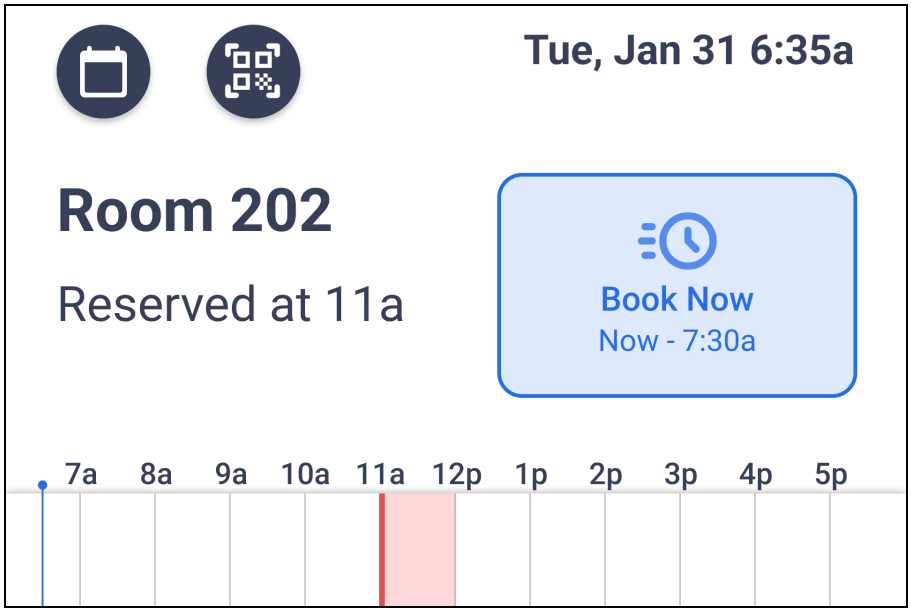
The user interface indicates whether the room is available, scheduled for an upcoming reservation, or reserved. The current room status is shown on the user interface:

- If the room is not reserved, the user interface shows the start time of the next scheduled reservation (if available) and provides a **Book Now** button for creating a new local reservation.
- If the room is scheduled for a reservation within the next five minutes, the interface shows the start time of the next scheduled reservation and options for checking in (if configured). A local reservation cannot be created during this period.
- If the room is reserved, the interface shows the end time of the current reservation and provides controls for extending the reservation.

These screens are described in the sections that follow.

Available Screen

If the room is available, the available screen shows the start time of the next scheduled reservation (if available) or shows a message indicating that the room is available for the entire day.



The following information and controls are provided:

- The room name and the current date and time.
- Indicates that the room is free all day or shows the start time of the next reservation (if one is scheduled).
- A **Book Now** button that allows a new local reservation to be created.
- A scheduling timeline located on the bottom of the UI that displays the room availability for the current day:
    - The timeline is divided into time slots for each hour within a fixed period (6:00 AM to 6:00 PM).
    - The current time is represented on the timeline as a blue line.
    - Reserved time slots are indicated by red blocks within the timeline. A darker red line indicates the reservation start time.
- A calendar icon that can be selected to view upcoming reservations for the day.

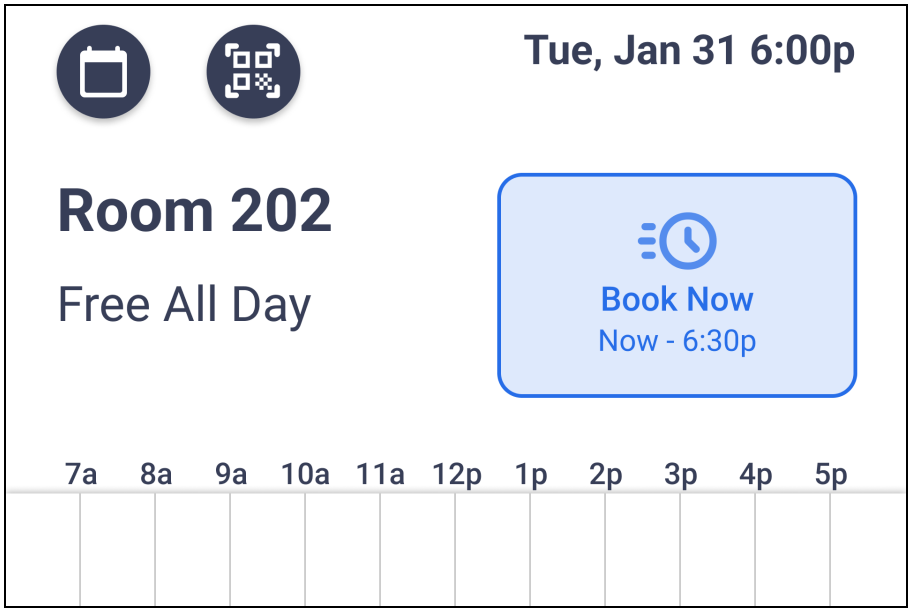
- A QR code icon that can be selected to display a QR code that opens the Microsoft Outlook® sign in page, allowing users to create a new reservation with the scheduling calendar resource.

If the room is available and can be reserved, an ad hoc reservation may be created from the touch screen. To create an ad hoc reservation, tap **Book Now**. Once reserved, the room status changes to reserved, and the ad hoc reservation information is displayed on the screen. Ad hoc reservations can also be booked directly through the scheduling calendar resource based on the room schedule.

Ad hoc reservations are scheduled for a minimum length of 30 minutes and are booked until the next possible top or bottom of the hour unless there is a conflicting reservation within that period. Refer to the following examples:

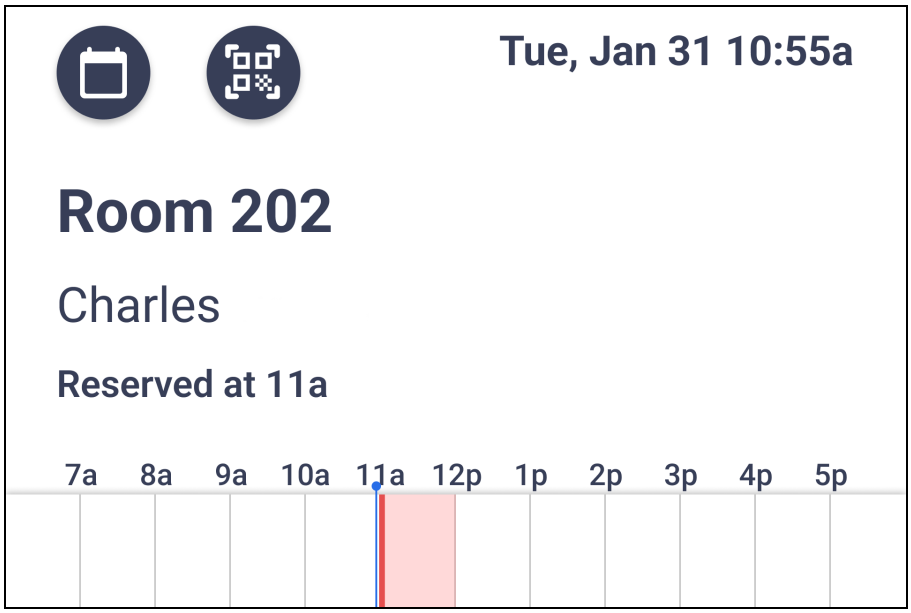
- If a reservation is created at 8:00 AM with no conflicting reservations in the available period, the reservation will be booked until 8:30 AM.
- If a reservation is created at 8:10 AM with no conflicting reservations in the available period, the reservation will be booked until 9:00 AM.
- If a reservation is created at 8:10 AM but another reservation is scheduled at 8:30 AM, the ad hoc reservation will be booked until 8:30 AM.

If it is past 6:00 PM, reservations can still be booked in 30-minute increments using the same rules described above. After 12:00 AM, the next day's scheduling calendar is used to determine room availability.



Upcoming Reservation Screen

If the desk is available but a reservation is scheduled to occur within the next five minutes, an upcoming reservation screen is shown with the start time of the upcoming reservation. An ad hoc reservation may not be created from the touch screen at this time.



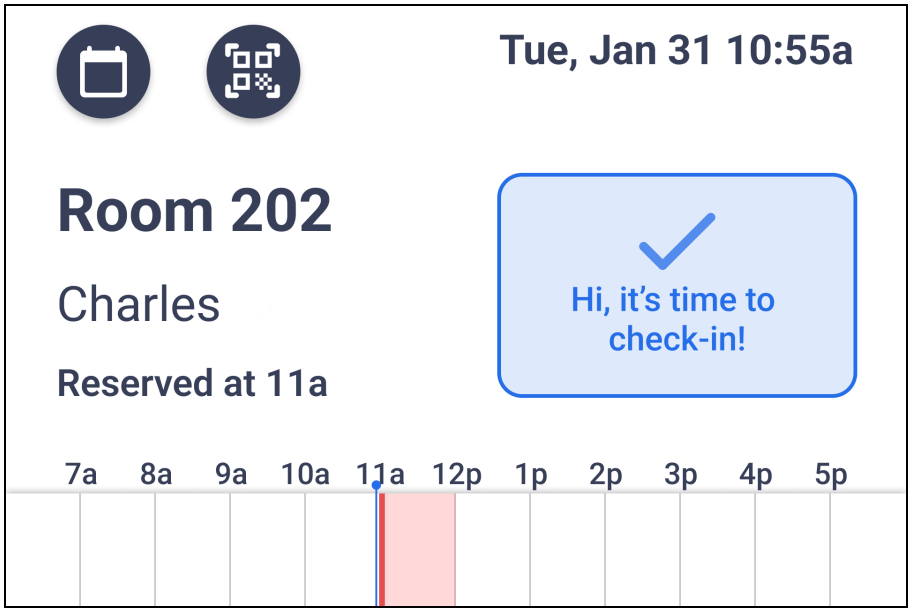
The following information and controls are provided:

- The room name and the current date and time.
- The organizer or meeting name (if it is not set to private in the scheduling calendar).

- Indicates that the room will be reserved and shows the start time of the upcoming reservation.
- A scheduling timeline located on the bottom of the UI that displays the room availability for the current day:
    - The timeline is divided into time slots for each hour within a fixed period (6:00 AM to 6:00 PM).
    - The current time is represented on the timeline as a blue line.
    - Reserved time slots are indicated by red blocks within the timeline. A darker red line indicates the reservation start time.
- A calendar icon that can be selected to view upcoming reservations for the day.
- A QR code icon that can be selected to display a QR code that opens the Microsoft Outlook® sign in page, allowing users to create a future reservation with the scheduling calendar resource.

If the check in functionality has been configured, a user may check into their upcoming reservation from the touch screen early. A check in button is provided on the touch screen UI during the five-minute period before the reservation begins.

> **NOTE:** The decline for no show functionality is not provided in room mode, so reservations will not be removed from the scheduling calendar automatically if the organizer does not check in. A reservation can be removed from the scheduling calendar manually using the **Schedule** screen.

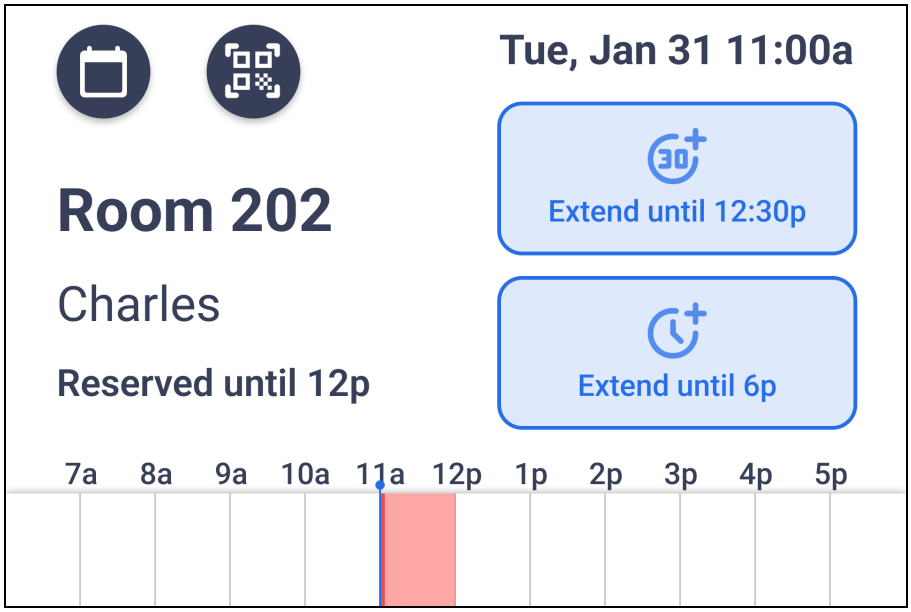


Once the user checks into their reservation by tapping the check in button, the room enters the reserved state immediately.

> **NOTE:** If the user does not tap the check in button, the touch screen light bar remains amber (if a custom color was not used for this state) for the duration of the reservation.

Reserved Screen

If the room is reserved, the reserved screen shows the end time of the current reservation and provides controls for extending the reservation.



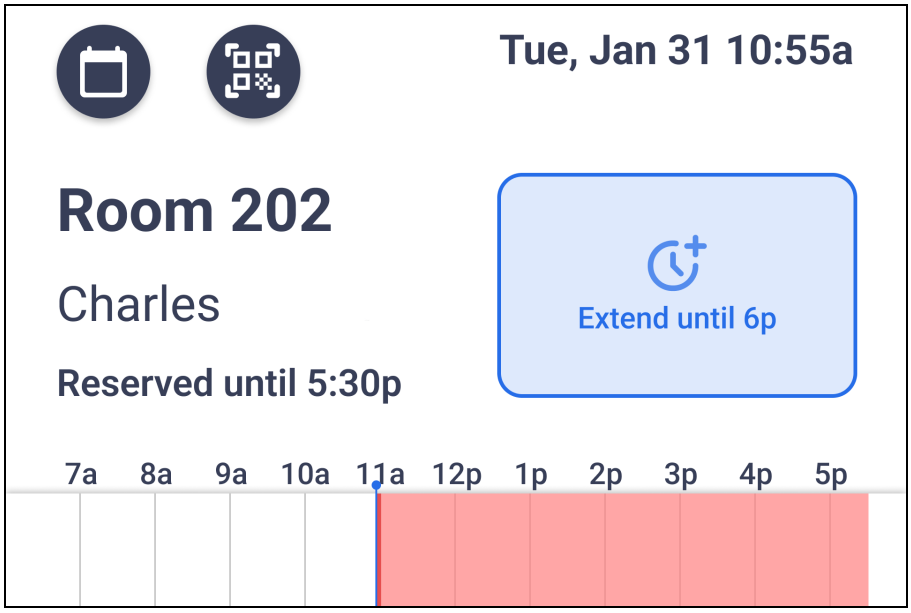
The following information and controls are provided:

- The room name and the current date and time.
- The organizer or meeting name (if it is not set to private in the scheduling calendar).
- Indicates the end time of the current reservation.
- A scheduling timeline located on the bottom of the UI that displays the room availability for the current day:
    - The timeline is divided into time slots for each hour within a fixed period (6:00 AM to 6:00 PM).
    - The current time is represented on the timeline as a blue line.
    - Reserved time slots are indicated by red blocks within the timeline. A darker red line indicates the reservation start time.
- A calendar icon that can be selected to view upcoming reservations for the day.
- A QR code icon that can be selected to display a QR code that opens the Microsoft Outlook® sign in page, allowing users to create a future reservation with the scheduling calendar resource.

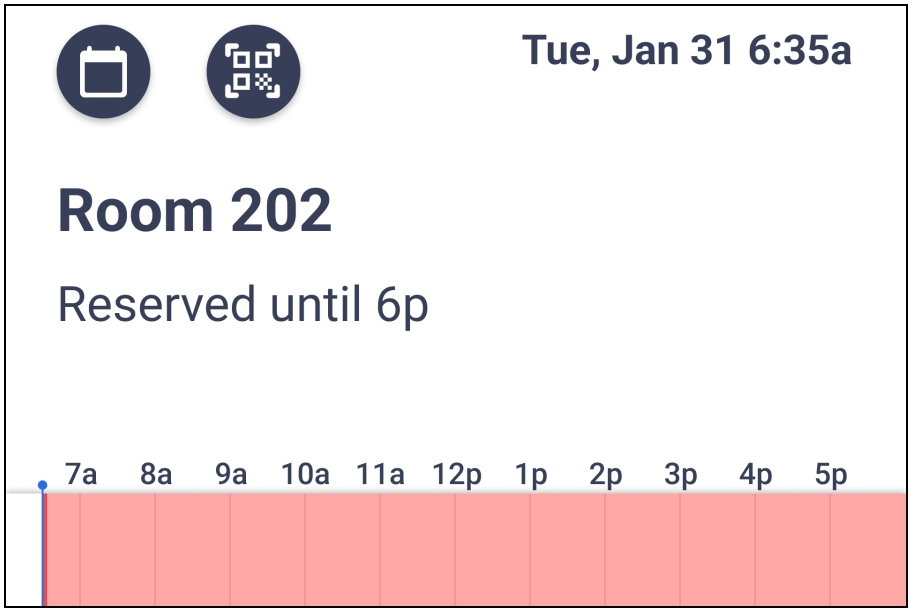
Controls are provided that allow reservations to be extended:

- Tap the top extend button to extend the reservation until the next top or bottom of the hour (in 30-minute intervals).
- Tap the bottom extend button to extend the reservation until the next scheduled reservation. If no upcoming reservations are scheduled, then the current reservation will be extended to the end of the scheduling timeline (6:00 PM).

The top extend button is not shown if an upcoming reservation (or the end of the scheduling timeline) will occur directly after the current available period.



If there is no available period before the next scheduled reservation begins (or before the end of the scheduling timeline), controls to extend the reservation are not provided.



Schedule Screen

Tap the calendar icon within the Crestron Room Scheduling user interface to display a **Schedule** screen for viewing the room schedule for the current day.

If a reservation is in progress, the name and duration of the reservation are listed under **Current Reservation**. If upcoming reservations are scheduled, the name and duration of those reservations are listed under **Upcoming Reservations**.

Reservations can be deleted from the **Schedule** screen by swiping left on the reservation. A delete button is shown to the right of the reservation. Tap the delete button to remove the corresponding reservation from the touch screen and the scheduling calendar resource.

Scheduling Calendar Behavior (Desk Mode)

The Crestron Desk Scheduling user interface receives its calendar data from a connected Office 365 scheduling calendar resource. Performing the following actions within the user interface will trigger the corresponding updates to the scheduling calendar data:

- Early check-in
- Late check-in
- Extend reservation
- End reservation early
- Cancel reservation

Scheduling calendar data is not updated in the following scenarios:

- If a reservation was never checked in and decline for no show functionality has not been turned on, the reservation remains on the scheduling calendar.
- If a reservation was never checked in and decline for no show functionality is turned on, but the reservation length was shorter than the decline for no show threshold, the reservation remains on the scheduling calendar.

The sections below describe specific use cases that can occur between the Crestron Desk Scheduling user interface and scheduling calendar resource.

Check-In Behavior for Modified Active Reservations

Whenever a reservation start time is modified in the scheduling calendar, the check-in flag is reset, which affects check-in behavior for the Crestron Desk Scheduling user interface. Refer to the following example scenarios:

- If a reservation is checked in from the touch screen during the specified check-in period, but the reservation time is moved in the scheduling calendar, then the reservation is no longer shown as checked in.
    - **Scenario**: A reservation is scheduled to start at 9:00 AM with a 30-minute check-in period starting at 8:30 AM. The user checks in to the reservation during the check-in period. However, the reservation start time is moved to 2:00 PM in the scheduling calendar after the reservation is checked in.
    - **Result**: The reservation start time moves to 2:00 PM with a 30-minute check-in period starting at 1:30 PM. The user must check into the reservation again during the new check-in period.

- If a reservation has a check-in period of 0 minutes and is checked in at its start time, but the reservation time is moved in the scheduling calendar, then the reservation is no longer shown as checked in and the UI enters an available state.
    - **Scenario**: A reservation is scheduled to start at 11:30 AM with a 0-minute check-in period. The user checks in to the reservation when it begins. However, the reservation start time is moved to 2:00 PM in the scheduling calendar after the reservation is checked in.
    - **Result**: The reservation start time moves to 2:00 PM with a 0-minute check-in period. The touch screen UI returns to an available state and the user must check into the reservation again after it begins.
- If a reservation is checked in early, but it is canceled from the scheduling calendar while it is in progress, then the reservation is removed from the scheduling calendar and the touch screen UI enters an available state.
- If a reservation is checked in after 6:00 PM and it is extended within the scheduling calendar, then the user must check into the reservation again after it is extended.

Decline for No Show and All Day Reservations

All day reservations that are booked from the scheduling calendar start at 12:00 AM. If the decline for no show functionality is turned on, by default, the reservation would be canceled within 60 minutes from the 12:00 AM start time depending on the specified decline for no show period. Since the desk would not typically be occupied until later in the morning, the Crestron Desk Scheduling user interface specifies the decline for no show period based on other factors.

Refer to the following example scenarios:

- If an all day reservation is scheduled for a future day in the scheduling calendar, the Crestron Desk Scheduling user interface uses the scheduled **On Time** for that day's work hours to determine the decline for no show period.

    > **NOTE:** To prevent reservations from being declined prior to users arriving at your workspace, it is recommended to set the work hours **On Time** to reflect when most users in your organization typically start their work day.

    - **Scenario**: An all day reservation has been scheduled for the following day (Monday) from the scheduling calendar. The work hours **On Time** value for Monday is currently set to 7:00 AM in the touch screen settings. Decline for no show is turned on with a 30-minute threshold.
    - **Result**: The reservation will be canceled and removed from the scheduling calendar if the user does not check in by 7:30 AM. The upcoming reservation screen is shown from 11:00 PM the prior night to the end of the check-in period (though the touch screen display is only powered on during scheduled work hours).

    > **NOTE:** If an all day reservation is scheduled for a day that does not have configured work hours in touch screen settings (typically weekend days), then the default **On Time** value (8:00 AM) is used to determine the decline for no show period instead.

- If an all day reservation is scheduled for the current day in the scheduling calendar, the Crestron Desk Scheduling user interface uses the time that the reservation was created to determine the decline for no show period.
    - **Scenario**: An all day reservation has been scheduled for the current day from the scheduling calendar at 9:00 AM. Decline for no show is turned on with a 30-minute threshold.
    - **Result**: The reservation will be canceled and removed from the scheduling calendar if the user does not check in by 9:30 AM. The upcoming reservation screen is shown immediately after the reservation is scheduled.

Check-In Behavior for Multiple Day Reservations

If a multiple day reservation is scheduled from the scheduling calendar, a user only needs to check into the reservation once at the start of the reservation period. The check in button is shown until either the user checks into the reservation or the reservation period ends.

Resources

The following resources are provided for the TSS-470E.

> **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
- developer.crestron.com: Provides developer documentation for Crestron APIs, SDKs, and other development tools

Product Certificates

To search for product certificates, refer to the Product Certificates section of the Crestron Resource Library.

Related Documentation

- XiO Cloud® Service User Guide

Crestron Electronics, Inc.
15 Volvo Drive, Rockleigh, NJ 07647
Tel: 888.CRESTRON
Fax: 201.767.7656
www.crestron.com

Product Manual — Doc. 9347C
03/26/24
Specifications subject to
change without notice.