# Crestron Fusion® Cloud Service

## Enterprise Management Platform

Best Practices

Crestron Electronics, Inc.

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# Crestron Fusion Cloud Service: Enterprise Management Platform

## Overview

The recommendations in this guide are considered best practices in preparation for the provisioning of the Crestron Fusion Cloud. Compare the information in this guide against the proposed system to be sure the best practices are followed.

## Configuration and Setup

### Microsoft® Exchange Software Configuration

Microsoft Exchange software should be configured as follows:

- Version: Use Microsoft Exchange 2010 or Microsoft Exchange 2013 with Exchange Web Services (EWS) Managed (preferred).
- Account to access Resources: The accounts used must have their own mailbox. Impersonation is required for Office 365® software and is recommended for on-premises installations of Exchange 2013 and higher.
- Room Calendars: Calendars should be set up as Exchange resources; validate them by adding one meeting via the Microsoft Outlook® software.

### Google Calendar™ Configuration

The Google Calendar application should be configured as follows:

- The Google® API application must be activated, and the Google Calendar API service on the domain must be enabled.
- The Google API console should be used to create the OAuth credentials and the Google service account.
- Each physical meeting room must have a Google room resource account.
- Security can be configured where the room resource account calendars can be shared with the service account. Alternately, security can be configured to globally elevate the service account privileges to avoid sharing calendars.

### Web Client Workstation Requirements

The web client workstation requirements are as follows:

- Screen resolution should be a minimum of 1280 x 1024 with 24-bit color quality.

The Crestron Fusion browser requirements are as follows:

- Internet Explorer® browser version 10.0 or later, if using Fusion Insite™ technology version 11 or higher (Windows® operating system)
- Firefox® browser version 42.0 or later
- Chrome™ browser version 47.0 or later
- Safari® browser version 9.0.1 or later

### Login and Configuration

When the user logs in and configures Crestron Fusion Cloud for the first time, the overall order of operations should be to create the geographic regions, tree hierarchy, asset types, roles, users, room templates, and rooms using templates. The login and configuration details are as follows:

- Use the URL, username, and password (provided by Crestron® technical support) to log in to Crestron Fusion Cloud.
- When logging in for the first time, fill out the profile to include the local time zone and contact e-mail address. Select the option to receive e-mails.
- Set the web application default refresh rate to 45–60 seconds.
- Design and set up any local geographic region before adding any nodes or rooms to the database.
- Keep the tree and node hierarchy to four or five nodes deep (e.g., Continent, Country, State, City, and Building).
- Create room templates suitable for the environment.
- Add rooms to the database using room templates.
- Choose the appropriate room calendar type.
- Turn off all attribute SYSTEM logging unless directed by Crestron. Enable database logging only for attributes needed for reporting.

## Control System Programming

During the installation, configure the control system as follows:

- Use Symbol Crestron Fusion Room to ensure compatibility with Crestron Fusion Cloud.
- Use a 3-Series Control System® platform.
- Use the modules (provided by Crestron) for device usages, help requests, scheduling, and error logging.
- Set up each control system to work with Crestron Fusion Cloud.

- Use a minimum firmware version of 1.012.x (required).
- Enter the “CLOUDURL *url*” command (provided by Crestron) into the Crestron Toolbox™ console, and then enter the “CLOUDENABLE ON” command.
- Sample all high-volume data before sending to Crestron Fusion Cloud. For example, the output of ramping analog signals, such as lighting level, can change quickly. This type of signal should be gated before the user sends to Crestron Fusion Cloud.

NOTE: DNS resolution must be configured for the device’s Ethernet interface.

NOTE: In Crestron Fusion Cloud, processors are automatically discovered as inactive rooms under the Discovered Objects Node. Move either the room or its symbols to the appropriate destination Node or room, respectively.

# Scheduling Panel Setup

Set up the scheduling panels as follows:

- Use a minimum firmware version of 1.002.x (required) for the TSW-732 and TSS-752 scheduling panels.
- Enter the “CLOUDURL *url*” command (provided by Crestron) into the Crestron Toolbox console, and then enter the “CLOUDENABLE ON” command.

NOTE: DNS resolution must be configured for the device’s Ethernet interface.

NOTE: In Crestron Fusion Cloud, scheduling panels are automatically discovered as inactive Assets using a default driver under the Discovered Objects Node. Move the scheduling panels to the appropriate destination room in the tree to activate, and update the driver according to the Out of the Box Functionality (OOTBF) version. If using the same OOTBF version for all inbound panels, contact the Crestron Fusion Support Group (FSG) for help with setting up the appropriate default driver.

# Crestron PinPoint™ App

The best practices for using the Crestron PinPoint app with Crestron Fusion Cloud are as follows:

- Configure the Microsoft Azure® Active Directory software for the company. For Office 365 users, this should already be configured. There should be an *azurename.onmicrosoft.com* directory account.
- Add the Azure subscription to the directory account to register the Crestron Fusion Cloud application.
- Configure one or more systems on the enterprise network with Microsoft Azure AD Connect to synchronize the company directory with the Cloud.

NOTE: To install this software, the user must have Enterprise Admin access to the on-premises Active Directory.

NOTE: To set up the Azure Active Directory synchronization, the user must have Global Admin access to the Azure Active Directory.

- Register the Crestron Fusion Cloud server as both a read-only Native Client application in Azure Active Directory and a web application. A Client ID is provided by the Azure portal. In the web application, a key is supplied upon registration. Refer to the Configuration online help for complete details.
- Configure an Azure Active Directory group that includes end users who are authorized to use the Crestron PinPoint app. This enforces compliance with the license, especially if not all users in the company are using the app.
- Configure an Active Directory group that includes the installer users who are authorized to use the Crestron Beacon Setup Pro app. The Crestron Beacon Setup Pro app is used to configure the room beacons and photos.
- Use one or more *company.tld* user e-mail domains for all Crestron PinPoint users, if those domains are federated together in one on-premises Active Directory and are consolidated into a single Azure Active Directory; otherwise, a single *company.tld* user domain is supported.
- Install Crestron PinPoint PP-100 beacons to enable the app to range the presence in individual meeting spaces. To effectively configure the beacons, review the following best practices:
    - PP-100 beacons are USB devices and are powered by a 5 V USB power supply. Use a wall charger (available from a third party) or an available USB host port to supply power to the PP-100.
    - Optimally the PP-100 should be placed at a central point in the space, typically under the meeting table. Minimize physical obstructions, such as metal table legs or equipment racks.
    - If PP-100s are used in adjacent rooms, avoid placing them along a common wall in close proximity to each other, since PinPoint detection can occur through walls and other obstructions.
    - If PP-100s are used in two rooms that are directly above and below each other, avoid placing PP-100s close to the ceiling in the lower room.
    - The Crestron Beacon Setup Pro app helps determine whether the beacon can be ranged properly in the room, and helps set the transmission level to avoid overlap with other spaces.

# Fusion Insite

When using Fusion Insite, refer to the following information:

## Obtaining and Optimizing the Revit® Software File

The building Revit file should be requested and obtained from the building managers of the customer site at least two weeks prior to the Crestron Fusion Cloud installation. This allows Crestron engineers sufficient time to troubleshoot any problems that may arise during the import process into Crestron Fusion Cloud. Depending on the number of elements within the file and the complexity of those geometrical elements, the file can become quite large and should be optimized before attempting to export into the IFC format.

The file should contain the minimum amount of Revit data to import what will look like a building in the RoomView® Monitoring interface: typically, Rooms, Walls, Curtain Walls, Windows, Doors, Railings, Stairways, Floors and Slabs, Roofs, and Site.

If there is no other area outside the building that is controlled or monitored by Crestron Fusion Cloud, such as parking lot lights, then Fusion Insite is not necessary, unless a view of the building with exterior landscaping is desired.

### Exporting the Revit File to IFC Format

To export the Revit building modeling information to the Industry Foundation Classes (IFC) file format, refer to the recommendations on the Revit website.

### Importing an IFC Building Model to Crestron Fusion Cloud

An IFC building model can be imported into Crestron Fusion Cloud and assigned to a specific node in the Crestron Fusion Cloud tree structure using the **Floor Plan** tab on the **Add/Edit Node** dialog box of the Setup web client. Once imported, the building model can immediately be viewed from the **Fusion Insite** tab in Crestron Fusion Cloud. Any user logged in with Setup access may view the **Assign Room** tab on the Room Detail overlay to map the appropriate Crestron Fusion Cloud room to a space in the model.

#### *Adding a New Floor Plan File*

When adding a new floor plan file to Crestron Fusion Cloud, refer to the following:

- Once a floor plan is imported onto a node, be aware of the following rules that govern any subsequent imports.
    - A new floor plan cannot be imported onto any higher node (ancestor) of the existing floor plan node.
    - A new floor plan cannot be imported onto any lower node (descendant) of the existing floor plan node.
    - A new floor plan can be imported only onto nodes that are the same level (sibling) as the initial floor plan node.
- An existing floor plan can be overwritten by importing a different IFC file onto the existing floor plan node. After the import is done, please take note of any new or missing IFC spaces reported on the import window. Once noted, make the appropriate room assignment changes to accommodate the new floor plan.

## For More Information

For more information on these and other procedures in Crestron Fusion Cloud, consult the embedded help accessed from the Crestron Fusion Cloud interface, or contact FSG at (855-754-5962) or e-mail fsg@crestron.com.

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