



Crestron Fusion[®] Cloud Service Programming Enterprise Management Platform

Reference Guide

Crestron Electronics, Inc.

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Crestron Fusion Cloud Service Programming: Enterprise Management Platform

Introduction

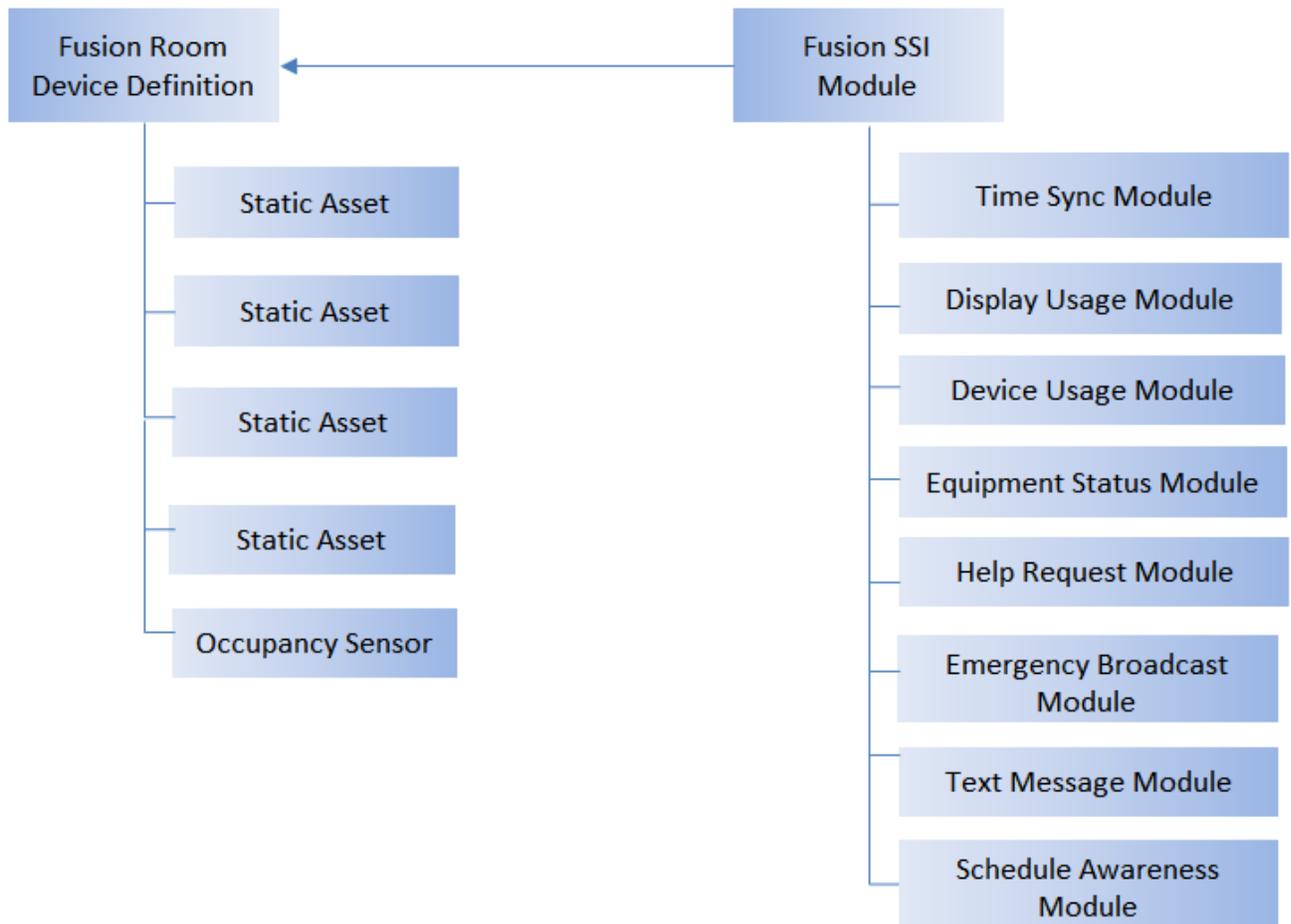
This document is intended for Crestron® software programmers and provides detailed information on programming for Crestron Fusion Cloud. The procedures and signal explanations for each module in this document provide a guide for the successful programming deployment of Crestron Fusion Cloud.

At this point in the process, the following several crucial steps should have already been completed.

- The scope of work has been defined and the stakeholders have defined specific functionality and features they would like from Crestron Fusion Cloud.
- The programmer should complete the functional programming in the room. Functional programming is defined as any programming required that automates the room with control and feedback.

The task at hand is to add Crestron Fusion Cloud programming. Be sure to follow the steps in this document in order. Before beginning to use the procedures in this document, review the SIMPL programming flow diagram.

SIMPL Programming Flow Diagram



Adding the Fusion Room Device Definition

At the core of programming Crestron Fusion Cloud is the Fusion Room Device definition (listed as Fusion Room in the Crestron Fusion database). All of the information moving to and from the Crestron Fusion Cloud server flows through the Fusion Room Device definition. The Fusion Room Device definition is the base for implementing Crestron Fusion Cloud code to the program. Follow the steps below to add the Fusion Room Device definition.

This procedure is required for Crestron Fusion Cloud programming.

Prerequisites

For adding the Fusion Room Device definition, the following are necessary:

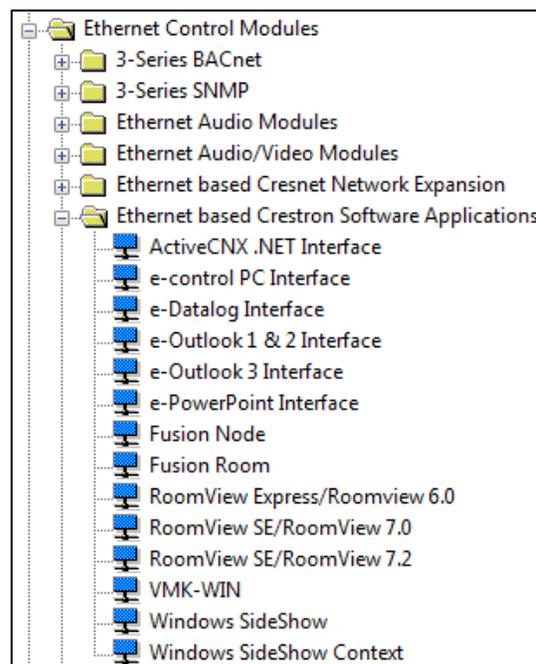
- Program with a processor defined
- Functional programming substantially completed before adding the Fusion Room Device definition (highly recommended)

Procedure

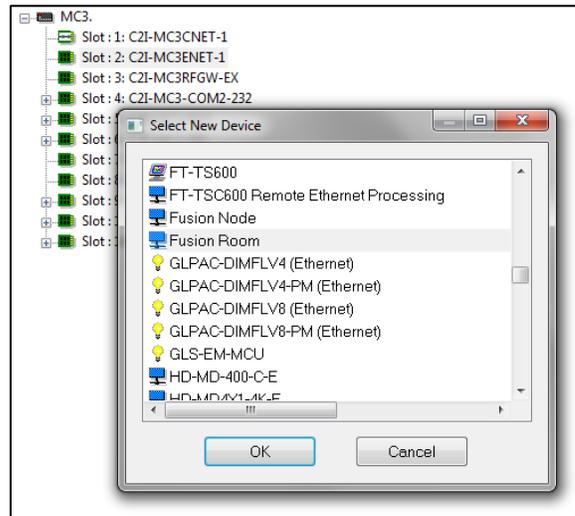
1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Add the Fusion Room Device definition (Fusion Room) to the program. The definition is located under Crestron Devices>Ethernet Control Modules>Ethernet based Crestron Software Applications.

The user can also right-click the Ethernet subplot for the processor and then add the Fusion Room Device definition.

Fusion Room Device Definition



Ethernet Subslot



Adding Assets to the Fusion Room Device Definition

The assets in Crestron Fusion Cloud encompass a broad spectrum. Assets can be AV equipment located within the space and anything else in the room, such as furniture, drapes, and lighting fixtures. The Static Asset device in programming is used to define these assets.

This procedure is required for programming Static Assets on the Fusion Room Device definition.

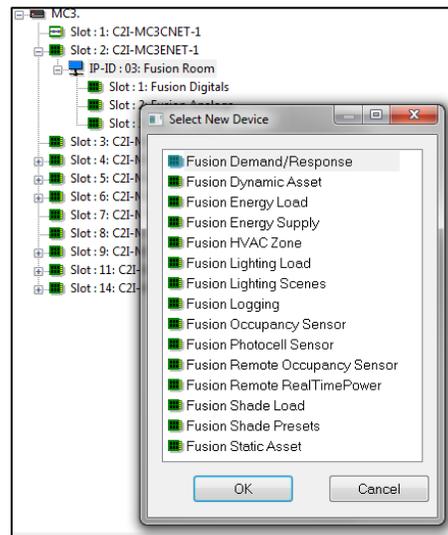
Prerequisites

To add a Static Asset, add the Fusion Room Device definition to the program. For more information, refer to the “Adding the Fusion Room Device Definition” section.

Procedure

1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify the Fusion Room Device definition has been added to the program.
3. Select the **Configure** view in SIMPL.
4. Right-click the Fusion Room Device definition.
5. Select **Add Item to Fusion Room**. The **Select New Device** dialog box displays.
6. Select **Fusion Static Asset** from the list.

Select New Device Dialog Box



- Repeat steps 1–5 above for all Assets that need to be added into Crestron Fusion Cloud. For the Occupancy Sensor, select Fusion Occupancy Sensor from the Device list.

NOTE: Some examples of Assets are sources such as a DVD Player, AV Switcher, PC, AirMedia® presentation gateway device, etc. Any piece of equipment entered for tracking in Crestron Fusion Cloud should be added as a Static Asset in programming.

Adding the Fusion SSI Module to a Program

Organization and consistency in programming lead to easier implementation and distribution. This procedure is designed to create a common programming practice for the additional modules required for Crestron Fusion Cloud. The Crestron Fusion Cloud Deployment team uses this design as a template to verify systems submitted for system certification.

This procedure is required for Crestron Fusion Cloud programming and system certification.

Prerequisites

For adding extenders and folders, the following are necessary:

- Program with a processor defined
- Fusion Room Device definition added
- Static Assets added
- Functional programming substantially completed before adding the Fusion SSI module (highly recommended)

For more information, refer to the "Adding the Fusion Room Device Definition" and "Adding Assets to the Fusion Room Device Definition" sections.

NOTE: Repeat steps 1-5 from the “Adding Assets to the Fusion Room Device Definition” section, for all Assets that need to be added into Crestron Fusion. For the Occupancy Sensor, select the Fusion Occupancy Sensor from the Device list.

NOTE: The Fusion SSI module is designed to attach to the Fusion Room Device definition. Right-clicking the Fusion SSI module and dragging it to the Fusion Room Device definition creates signals between the module and the definition. This auto-generates the necessary signals to attach the module and the device together. From the prompt that displays, assign a prefix for the signal names. The most common prefix name is the room’s name (for example, Conference Room 101, Classroom 200, etc.)

Signal Definitions

Inputs Table

Signal Group	Module Signal Name	Definition
Fusion Room	{{Fusion_Digitals_>>_SystemPowerOn}}	This signal links to the SystemPowerOn signal on the Fusion Room Device definition and is used when System Power has been triggered to On from Crestron Fusion Cloud.
Fusion Room	{{Fusion_Digitals_>>_SystemPowerOff}}	This signal links to the SystemPowerOff signal on the Fusion Room Device definition and is used when System Power has been triggered to Off from Crestron Fusion Cloud.
Fusion Room	{{Fusion_Digitals_>>_DisplayPowerOn}}	This signal links to the DisplayPowerOn signal on the Fusion Room Device definition and is used when Display Power has been triggered to On from Crestron Fusion Cloud.
Fusion Room	{{Fusion_Digitals_>>_DisplayPowerOff}}	This signal links to the DisplayPowerOff signal on the Fusion Room Device definition and is used when Display Power has been triggered to Off from Crestron Fusion Cloud.
Fusion Room	{{Fusion_Digitals_>>_AuthenticateSucceeded}}	This signal links to the AuthenticateSucceeded signal on the Fusion Room Device definition indicating a user has been authenticated from Crestron Fusion Cloud.
Fusion Room	{{Fusion_Digitals_>>_AuthenticateFailed}}	This signal links to the AuthenticateFailed signal on the Fusion Room Device definition indicating a user has failed authentication from Crestron Fusion Cloud.
Fusion Room	{{Ethernet_Offline_Manager_>>_offline}}	This signal links to an Ethernet Offline Manager update-request signal. The Ethernet Offline Manager must be added to the Fusion Room Device definition manually.

Signal Group	Module Signal Name	Definition
Fusion Room	{{Fusion_Analogs_>>_BroadcastMsgType}}	This signal links to the BroadcastMsgType output and receives an analog value for the type of broadcast message that was sent (0–9d).
Fusion Room	{{Fusion_Serials_>>_HelpResponse}}	This signal links to the HelpResponse output of the Fusion Room Device definition and contains the response message sent from Crestron Fusion Cloud to the room.
Fusion Room	{{Fusion_Serials_>>_TextMessageFromFusion}}	This signal links to the data sent from Crestron Fusion Cloud back to the Fusion SSI module.
Fusion Room	{{Fusion_Serials_>>_BroadcastMsg}}	This signal links to the BroadcastMsgType output and receives an analog value for the type of broadcast message that was sent (0–9d).
Fusion Room	{{Fusion_Serials_>>_GroupMembership}}	This signal links to the data sent from Crestron Fusion Cloud back to the Fusion SSI module.
Fusion Room	{{Fusion_RoomView_Scheduling_Data_>>_ScheduleResponse\$}}	This input receives scheduling data (in XML format) that can then be processed by the module.
Fusion Room	{{Fusion_RoomView_Scheduling_Data_>>_CreateResponse\$}}	This input issues an XML formatted request for scheduling data.
Fusion Room	{{Fusion_RoomView_Scheduling_Data_>>_RemoveResponse\$}}	This input issues an XML formatted clear command to remove all responses.
	{{Fusion_Room_Data_>>_RoomAutomationResponse\$}}	This signal links to the RoomAutomationResponse\$ signal on the Fusion Room Data subslot. The data that is sent through this signal, containing automation rules in XML format, is stored on the processor.
	{{Fusion_Room_Data_>>_RoomTimeclockResponse\$}}	This signal links to the RoomTimeclockResponse\$ signal on the Fusion Room Data subslot. Data that is sent through this signal contains time sync information in XML format that is then parsed and used to update the processor date/time. This signal is used by the Fusion Time Sync module.
	{{Fusion_Room_Data_>>_RoomConfigResponse\$}}	This signal links to the RoomConfigResponse\$ signal on the Fusion Room Data subslot. The data sent through this signal contains room details in XML format. These could be custom properties, settings, etc.
	{{Fusion_Room_Data_>>_RoomListResponse\$}}	This signal links to the RoomListResponse\$ signal on the Fusion Room Data subslot. Data that is sent through this signal contains information for room availability. This data is sent in XML format.

Signal Group	Module Signal Name	Definition
	{{Fusion_Room_Data_>>_RoomAttributeResponse\$}}	This signal links to the RoomAttributeResponse\$ signal on the Fusion Room Data subslot. Data sent through this signal contains information about attributes from Crestron Fusion Cloud. This data is sent in XML format.
	{{Fusion_Room_Data_>>_RoomAssetQueryResponse\$}}	This signal links to the RoomAssetQueryResponse\$ signal on the Fusion Room Data subslot. Data that is contained in this signal lists Assets associated to the room. This data is sent in XML format.
	{{Fusion_Room_Data_>>_AssetDriverQueryResponse\$}}	This signal links to the RoomDriverQueryResponse\$ signal on the Fusion Room Data subslot. This data contains information related to a dynamic driver built for an Asset. The response can contain information values about the dynamic driver. The data is in XML format.
	{{Fusion_Room_Data_>>_ActionQueryResponse\$}}	This signal links to the RoomActionQueryResponse\$ signal on the Fusion Room Data subslot. Data contained in this signal is response information to push registration requests, Meeting ID requests, and meeting end time change requests. The data is in XML format.
	{{Fusion_Room_Data_>>_LocalDateTimeQueryResponse\$}}	This signal links to the LocalDateTimeQueryResponse\$ signal on the Fusion Room Data subslot. The data contained in this signal returns the current date and time for the room. The data is formatted in XML.
	Program_Started_Held	This signal links to the logic and lets Crestron Fusion Cloud know that the system and program has started. This signal is important to use due to the GUID Updater built into the Fusion SSI Module.
	System_Is_On	This digital feedback signal links to the programming logic for overall system status.
	[Display_Is_On]	This digital feedback signal links to the display's control module and provides current power status for the primary display.
	[Lamp Hours]	This analog signal links to the display's control module and provides current total lamp hours reporting from the projector.
	Device_Usage_String\$	This signal is linked to the Device Usage module and provides data to send to Crestron Fusion Cloud.

Signal Group	Module Signal Name	Definition
	Display_Usage_String\$	This signal links to the Display Usage module and provides data to send to Crestron Fusion Cloud.
	Equipment_Status\$	This signal links to the Fusion SSI Equipment Status module and provides data to send to Crestron Fusion Cloud.
	[Help_Request\$]	This signal links to the Help_Request\$ serial output signal on the Fusion SSI Help Request and Response module.
	[Text_Message_TX\$]	This signal links to the Text_Message_TX\$ serial output signal on the Fusion SSI Text Message module.

Outputs Table

Signal Group	Module Signal Name	Definition
Fusion Room	{{SystemPowerIsOn_>>_Fusion_Digitals}}	This is the digital signal value for System Power On. This signal provides feedback from the Fusion SSI module to Crestron Fusion Cloud.
Fusion Room	{{DisplayPowerIsOn_>>_Fusion_Digitals}}	This is the digital signal value for Display Power On. This signal provides feedback from Fusion SSI module to the Crestron Fusion Cloud.
Fusion Room	{{MsgBroadcastEnabled_>>_Fusion_Digitals}}	This signal indicates whether or not broadcast messaging can be invoked for this room.
Fusion Room	{{update-request_>>_Ethernet_Offline_Manager}}	This digital signal is tied to the Ethernet Offline Manager that sends a trigger to request an update for network online or offline status.
Fusion Room	{{DisplayUsage_>>_Fusion_Analogs}}	This analog signal ties to the Display Usage analog input for sending current lamp hours to Crestron Fusion Cloud.
Fusion Room	{{HelpRequest_>>_Fusion_Serials}}	This serial signal sends Help Requests to Crestron Fusion Cloud. This signal is passed through the Fusion SSI module from the Help Request module.
Fusion Room	{{ErrorMessage_>>_Fusion_Serials}}	This serial signal sends Equipment Status messages to Crestron Fusion Cloud. This signal is passed through the Fusion SSI module from the Equipment Status module.
Fusion Room	{{LogText_>>_Fusion_Serials}}	This serial output contains custom serial data which can be used for logging information to the Crestron Fusion Cloud database.
Fusion Room	{{DeviceUsage_>>_Fusion_Serials}}	This serial signal sends Device Usage data to Crestron Fusion Cloud. This signal is passed through the Fusion SSI module from the Device Usage module.

Signal Group	Module Signal Name	Definition
Fusion Room	{{TextMessage_>>_Fusion_Serials}}	This serial signal sends Text Messages to Crestron Fusion Cloud. This signal is passed through the Fusion SSI module from the Text Message module.
Fusion Room	{{BroadcastMsgResponse_>>_Fusion_Serials}}	This serial signal sends an Emergency Response message to Crestron Fusion Cloud. This signal is passed through the Fusion SSI module from the Emergency Broadcast module.
Fusion Room	{{FreeBusyStatus_>>_Fusion_Serials}}	This serial string contains scheduling data to determine whether a room is available or not available.
Fusion Room	{{AuthenticateRequest_>>_Fusion_Serials}}	This serial string is used to authenticate users against a database. This string can then be used for accessing the room user interfaces or other security.
Fusion Room	{{Fusion_ScheduleQuery\$_>>_RoomView_Scheduling_Data}}	This serial signal returns XML formatted query information for scheduling associated to the room.
Fusion Room	{{Fusion_CreateMeeting\$_>>_RoomView_Scheduling_Data}}	This serial signal returns XML formatted data for scheduling associated to the room.
Fusion Room	{{Fusion_RemoveMeeting\$_>>_RoomView_Scheduling_Data}}	This serial signal returns XML formatted data to remove scheduling associated to the room.
	{{RoomAutomationQuery\$_>>_Fusion_Room_Data}}	This signal links to the RoomAutomationQuery\$ signal on the Fusion Room Data subplot. The data sent through this signal contains request information for room automation rules. The data is in XML format.
	{{RoomTimeclockQuery\$_>>_Fusion_Room_Data}}	This signal links to the RoomTimeclockQuery\$ signal on the Fusion Room Data subplot. The data sent through this signal contains the request for time sync information in XML. This signal is used by the Fusion Time Sync module.
	{{RoomConfigQuery\$_>>_Fusion_Room_Data}}	This signal links to the RoomConfigQuery\$ signal on the Fusion Room Data subplot. The data sent through this signal contains the request for room details in XML format, for example, custom properties, settings, etc.
	{{RoomListQuery\$_>>_Fusion_Room_Data}}	This signal links to the RoomListQuery\$ signal on the Fusion Room Data subplot. The data sent through this signal contains the request for information on room availability. This data is sent in XML format.

Signal Group	Module Signal Name	Definition
	{{RoomAttributeQuery\$_>>_Fusion_Room_Data}}	This signal links to the RoomAttributeQuery\$ signal on the Fusion Room Data subslot. The data sent through this signal contains request information about attributes from Crestron Fusion Cloud. The data is sent in XML format.
	{{RoomAssetQuery\$_>>_Fusion_Room_Data}}	This signal links to the RoomAssetQuery\$ signal on the Fusion Room Data subslot. The data contained in this signal is requested for Assets associated to the room. The information is sent in XML format.
	{{AssetDriverQuery\$_>>_Fusion_Room_Data}}	This signal links to the AssetDriverQuery\$ signal on the Fusion Room Data subslot. The data contains request information related to a dynamic driver built for an Asset.
	{{ActionQuery\$_>>_Fusion_Room_Data}}	This signal links to the ActionQuery\$ signal on the Fusion Room Data subslot. The data contained in this signal is a request to push register, request Meeting ID, and request a meeting end time change. The data is in XML format.
	{{LocalDateTimeQuery\$_>>_Fusion_Room_Data}}	This signal links to the LocalDateTimeQuery\$ signal on the Fusion Room Data subslot. The data contained in this signal requests the current date and time for the room. The data is in XML format.
System Information	[Processor_DHCP_ON]	This serial string provides feedback indicating if DHCP is On for the processor.
System Information	[Processor_Model]	This serial string provides feedback for the model of the processor.
System Information	[Processor_Firmware]	This serial string provides feedback on the current firmware running on the processor.
System Information	[Firmware_Date]	This serial string provides the release date for the current running firmware version.
System Information	[Processor_MAC]	This serial string provides the MAC address of the processor.
System Information	[Processor_IP]	This serial string provides the current IP address of the processor.
System Information	[Processor_Hostname]	This serial string provides the current hostname of the processor.
System Information	[Processor_Serial]	This serial string provides the serial number of the processor.
System Information	[Processor_Uptime]	This serial string provides the time since the last time the processor rebooted.
System Information	[Program1_Uptime]	This serial string provides the time since last restart or upload of the program running in Slot 1.

Signal Group	Module Signal Name	Definition
System Information	[Programmer_Name]	This serial string provides the name of the programmer for the current running program, if available.
System Information	[System_Name]	This serial string provides the name of the system for the current running program, if available.
System Information	[Source_File]	This serial string provides the location path to the current running program, for example, c:\Program Files\Creston\program_name.lpz).
System Information	[Compile_Date]	This serial string provides the date that the current program was compiled on.
	Fusion_System_On_Request	This digital signal passes the signal value from Crestron Fusion Cloud through the Fusion SSI module and then sends the value to programming within the room for System Power On.
	Fusion_System_Off_Request	This digital signal passes signal value from Crestron Fusion Cloud through the Fusion SSI module and then sends the value to programming within the room for System Power Off.
	[Fusion_Display_On_Request]	This digital signal passes the signal value from Crestron Fusion Cloud through the Fusion SSI module and then sends the value to programming within the room for Display Power On.
	[Fusion_Display_Off_Request]	This digital signal passes the signal value from Crestron Fusion Cloud through the Fusion SSI module and then sends the value to programming within the room for Display Power Off.
	[Help_Response\$]	This pass-through string sends XML data from Crestron Fusion Cloud to the Help Request and Response module. This data is then formatted by the module and sent to a user interface.
	[Broadcast_Message_Type]	This pass-through string sends the analog value (0d-9d) to the Fusion SSI Broadcast Message module.
	[Broadcast_Message\$]	This pass-through string sends the serial string broadcast message to the Fusion SSI Broadcast Message module.
	[Text_Message_RX\$]	This pass-through string sends XML data from Crestron Fusion Cloud to the Fusion Text Message module. This data is then formatted by the module and sent to a user interface.

Signal Group	Module Signal Name	Definition
Fusion EM	[GUID_Update_Busy]	This signal indicates that the internal GUID Update module is currently running. When low, the process has completed. This signal can be used to trigger events in programming after the GUID Update has been completed.
Fusion EM	[RoomName\$]	This signal returns the name of the Crestron Fusion Cloud room.
Fusion EM	[RoomGUID\$]	This signal returns the GUID information created by the GUID Updater.
Fusion EM	[SymbolSlotGUIDs\$]	This signal returns the GUID information with the symbol slot information. This is important if there are multiple symbols in a program. This information identifies which GUID is associated to which symbol.

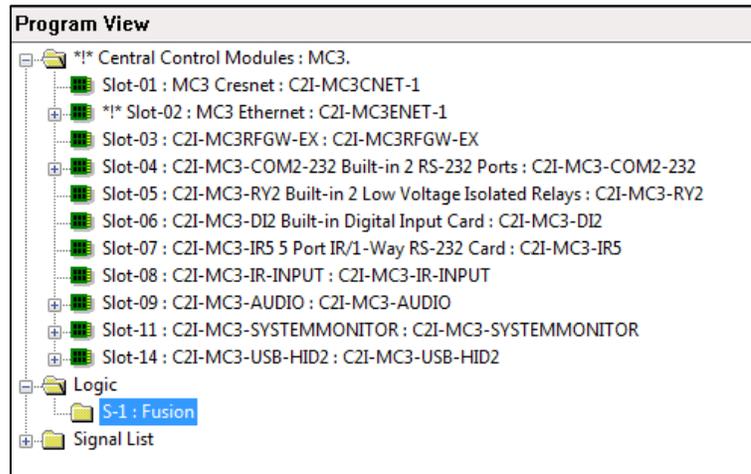
Parameter Fields Table

Module Signal Name	Definition
Processor_Type	This parameter defines whether the system is a standard Crestron processor or a DMPS system.
Primary_SSI	This parameter is set for multiple Fusion SSI modules in one program. Designating one primary prevents the GUID Updater (within all other Fusion SSI modules) from generating updated .rvi files. One module per program should be set as the primary. All other modules should have No selected.
Prefix_GUID	This parameter defines if the GUID Updater prefix is invoked within the module.
Append_Program_Slot	This parameter defines if the Program Slot number is prefixed to the GUID at program start.
File_Location	This parameter defines the location for the .rvi file that Crestron Fusion Cloud reads to invoke symbol discovery.
Fusion_SSI_ID	<i>Future Use</i>
Scheduling_ID	<i>Future Use</i>

Procedure

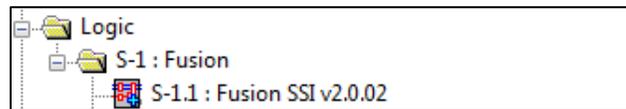
1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify that the Fusion Room Device definition has been added to the program.
3. Verify that all Static Assets for the room have been added to the Fusion Room Device definition.
4. Create a subfolder labeled "Fusion" in SIMPL.

Program View



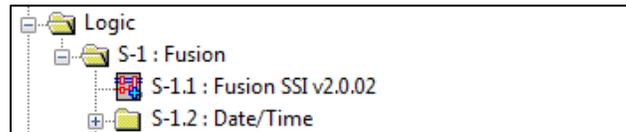
5. Add the Fusion SSI module to the Fusion subfolder. The module is located in the Fusion folder under Crestron Modules.

Fusion SSI Module Added to Fusion Subfolder



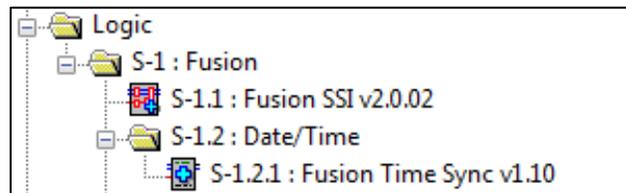
6. For date and time synchronization, create a subfolder under Fusion labeled "Date/Time."

Date/Time Subfolder



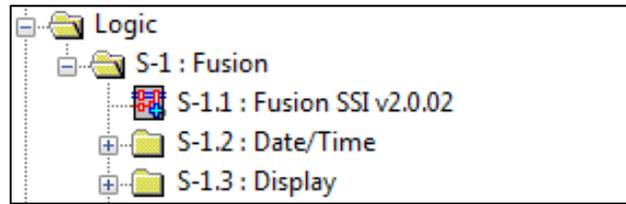
7. Add the Fusion Time Sync module to the Date/Time folder.

Fusion Time Sync Module



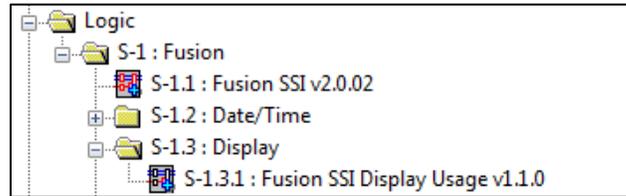
8. Create a subfolder under Fusion labeled "Display."

Display Subfolder



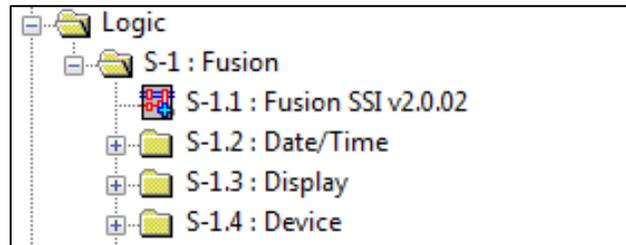
9. Add the Fusion SSI Display Usage module to the Display subfolder.

Fusion SSI Display Usage Module



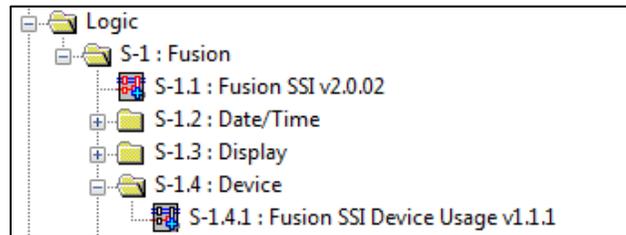
10. Create a subfolder under Fusion labeled "Device."

Device Subfolder



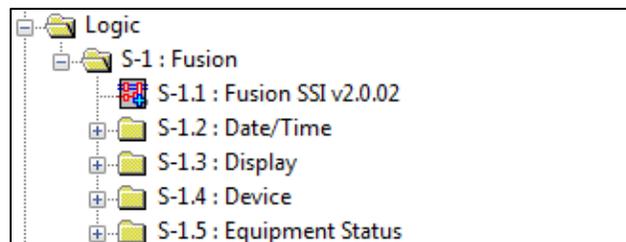
11. Add the Fusion Device Usage module to the Device subfolder.

Fusion Device Usage Module



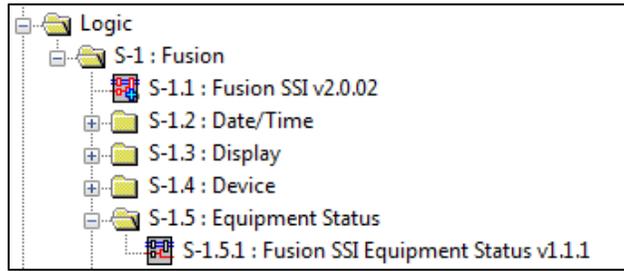
12. Create a subfolder under Fusion labeled "Equipment Status."

Equipment Status Subfolder



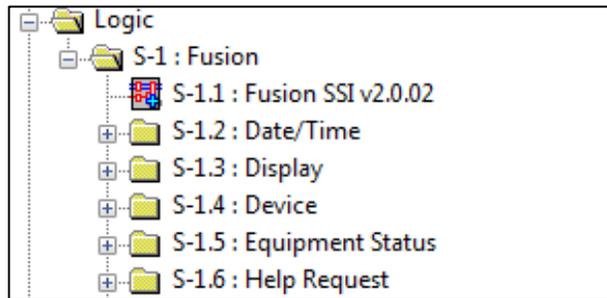
13. Add the Fusion SSI Equipment Status module to the Equipment Status subfolder.

Fusion SSI Equipment Status Module



14. Create a subfolder under Fusion labeled "Help Request" (for help messaging).

Help Request Subfolder



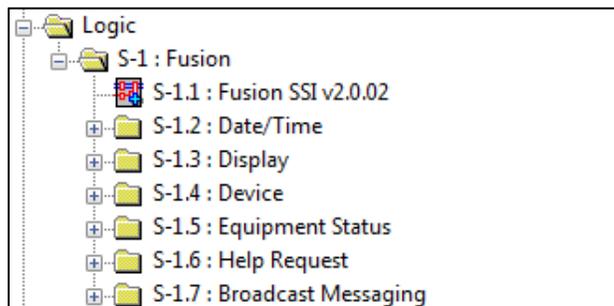
15. Add the Fusion SSI Help Request and Response module to the Help subfolder.

Fusion SSI Help Request and Response



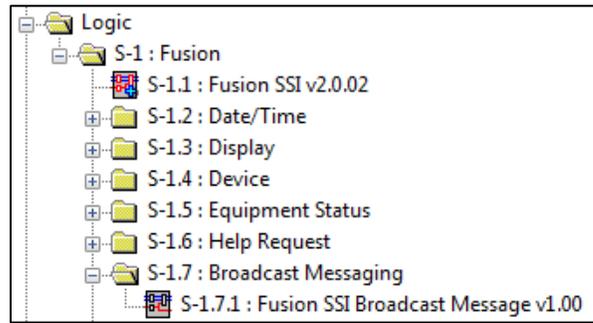
16. Create a subfolder labeled "Broadcast Messaging."

Broadcast Messaging Subfolder



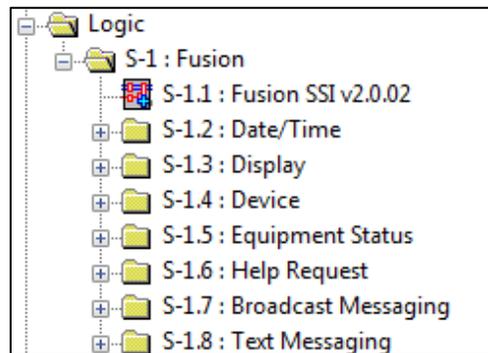
17. Add the Fusion SSI Broadcast Message module to the Broadcast Messaging subfolder.

Fusion SSI Broadcast Message Module



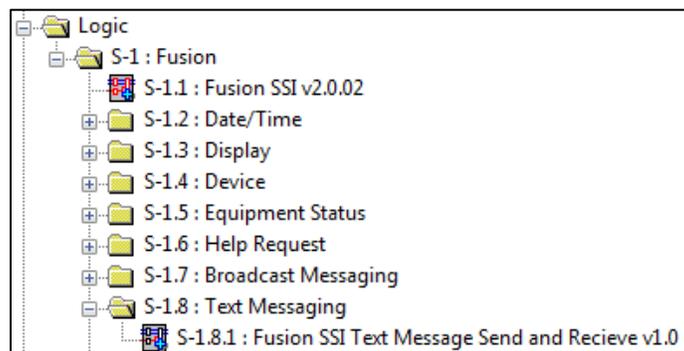
18. Create a subfolder labeled “Text Messaging.”

Text Messaging Subfolder



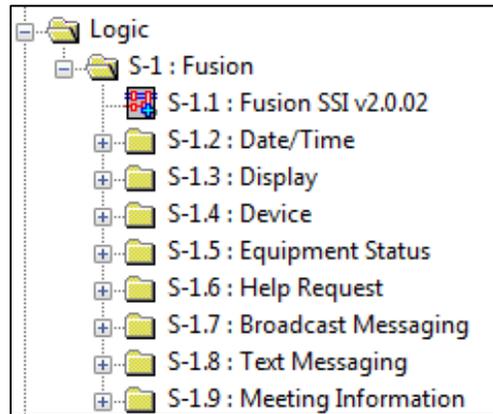
19. Add the Fusion SSI Text Message Send and Receive Module to the Text Messaging subfolder.

Fusion SSI Text Message Send and Receive Module



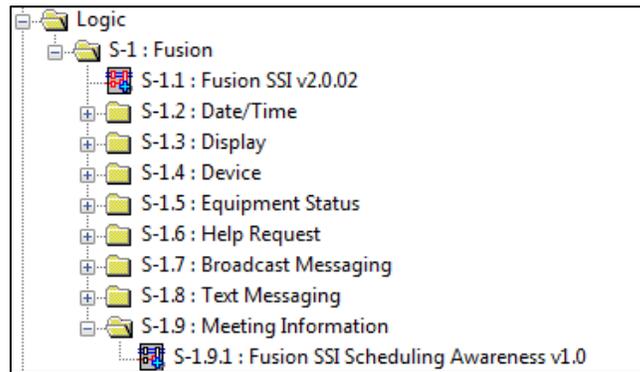
20. Create a subfolder labeled “Meeting Information.”

Meeting Information Subfolder



21. Add the Fusion SSI Scheduling Awareness module to the Meeting Information subfolder.

Fusion SSI Scheduling Awareness Module



NOTE: There are additional modules available for Crestron Fusion Cloud programming. For the purpose of these procedures, the focus is only on the modules listed above.

Programming the Fusion Time Sync Module

This module is used to synchronize the processor time and date with the time and date of the Crestron Fusion Cloud server. This procedure identifies the programming that is necessary to issue a command to Crestron Fusion Cloud so that Crestron Fusion Cloud can send back the current time and date. The module then updates the time and date on the processor.

Prerequisites

For adding the Time Sync module, the following are necessary:

- Program with a processor defined
- Fusion SSI Module and the Fusion Room Device definition added

- Functional programming substantially completed before adding the Fusion Room Device definition and additional Crestron Fusion Cloud modules (highly recommended).

For more information, refer to the “Adding the Fusion Room Device Definition” and “Adding the Fusion SSI Module to a Program” sections.

Signal Definitions

Inputs Table

Module Signal Name	Definition
Sync_Time_b	This digital signal (when triggered) sends a serial string out the Local_Date_Time_Query_tx\$ signal to Crestron Fusion Cloud to retrieve the current time and date information. This signal is usually tied to a When module.
Local_Date_Time_Query_rx\$	This serial string is tied to the Fusion SSI Module on the LocalDateTimeResponse\$ serial string. This signal contains feedback from Crestron Fusion Cloud on the server time and date.

Outputs Table

Module Signal Name	Definition
Local_Date_Time_Query_tx\$	This formatted serial string is sent to Crestron Fusion Cloud to request the current time and date of the Crestron Fusion Cloud server.

Parameter Fields Table

Module Signal Name	Definition
InstanceID	This signal is used to add additional offset for time sync. Offset is currently built into this module. When multiple time sync modules are used across programs, this parameter allows for additional offset. If the ID is changed, it does require having multiple versions of code. The general recommendation is to not change this value.
[Reference Name]	This signal is not currently used.

Procedure

1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify that the Fusion Room Device definition has been added to the program.
3. Add the Fusion Time Sync Module to the program under the Date/Time folder.
 - a. The module is located under the Crestron database in the folder labeled Fusion.
 - b. If the folder is not present, refer to the “Adding the Fusion SSI Module to a Program.” section.
4. Add a When module to the Date/Time folder.

Programming the Fusion SSI Display Usage Module

One of the many features of Crestron Fusion Cloud is the ability to track usage information for displays, whether they are LCD, LED, projector, or other types of displays. This module generates and formats usage data (in minutes) that is sent to the database. The information is available for the Crestron Fusion Cloud reports section.

This procedure identifies programming required for display usage which sends data to the Fusion SSI module.

Prerequisites

For adding the Display Usage module, the following are necessary:

- Program with a processor defined
- Fusion SSI Module and the Fusion Room Device definition added
- Functional programming substantially completed before adding the Fusion Room Device definition (highly recommended).

For more information, refer to the “Adding the Fusion Room Device Definition” and “Adding the Fusion SSI Module to a Program” sections.

Signal Definitions

Inputs Table

Module Signal Name	Definition
System_Powered_Off	This signal indicates to the Display Usage module that the system has been shut off and all counters are stopped.
Display(x)_Power_On_fb	This signal links to the logic on the display's control module for Power On.
Display(x)_Power_Off_fb	This signal links to the logic on the display's control module for Power Off.
[Display(x)_Name_txt\$]	This signal defines the name of the display, which overrides any value set in the Display(x)_Name\$ parameter field.

Outputs Table

Module Signal Name	Definition
Display_Usage_String_tx\$	This signal contains the data created by the module outputs on this serial string and is connected to the Display_Usage_String\$ input on the Fusion SSI module.

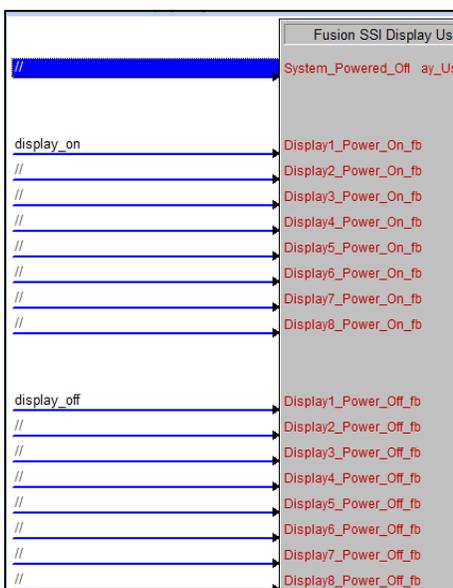
Parameter Fields Table

Module Signal Name	Definition
Display(x)_Name_txt\$	This signal defines the name of the corresponding display.

Procedure

1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify that the Fusion Room Device definition has been added to the program.
3. Add the Fusion SSI Display Usage module to the program under the Display folder.
 - The module is located under the Crestron database in the folder labeled Fusion.
 - If the display folder is not present, refer to the “Adding the Fusion SSI Module to a Program” section.
4. Program the three input lines (each device connected to the module has three input lines) according to the guidelines below.
 - The digital signal for Display(x)_Power_On_fb should be tied to programming indicating the display is on.
 - The digital signal for Display(x)_Power_Off_fb should be tied to programming indicating the display is off.

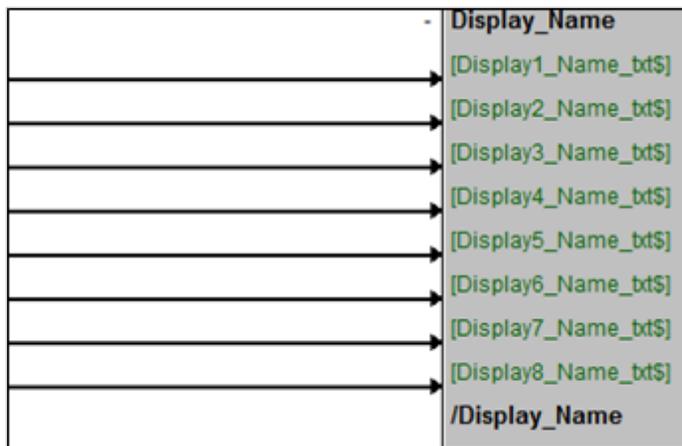
Display(x)_Power_On_fb and Display(x)_Power_Off_fb



- Determine whether the display is a Crestron Connected® display.
 - If Yes, connect the Power On and Power Off feedback signals to the Display Usage module for the corresponding display.
 - If No, connect the Power On/Off commands directly to the Display Usage module.
- Determine whether the display is controlled by TCP/IP, RS-232, or RS-422.
 - If Yes, and the display has a Power On/Off feedback, connect the Power On and Power Off feedback signals to the Display Usage module for the corresponding display.

- o If No, connect the Power On and Power Off command signals to the Display Usage module for the corresponding display.
- Determine whether the display is controlled by discrete IR.
 - o If Yes, connect the Power On and Power Off feedback signals to the Display Usage module for the corresponding display.
 - o If No, it is not possible to provide accurate usage information to Crestron Fusion Cloud. A different display is required to provide this information.
- To send the display name via programming (overrides parameter field at bottom of module), send a serial string containing the name to Display(x)_Name_txt\$, for example, LED Left Display, LED Right Display.

Display(x)_Name_txt\$



5. If the Display Usage module is full, add another Display Usage module to the program and repeat these steps, as necessary.
6. If the individual lines described above for display name are not used, fill in the parameter fields listed at the bottom of the module.

The Display(x)_Name\$ should be filled in according to the name of the display. This field corresponds to the display input fields at the top of the module.

Display(x)_Name\$

Display1_Name\$	Monitor
Display2_Name\$	"Display 2"
Display3_Name\$	"Display 3"
Display4_Name\$	"Display 4"
Display5_Name\$	"Display 5"
Display6_Name\$	"Display 6"
Display7_Name\$	"Display 7"
Display8_Name\$	"Display 8"

NOTE: Display Usage is calculated by the Power_On and Power_Off feedback signals. The module calculates the actual time the display was in use (in minutes), processes the results, and then sends it to the database.

NOTE: The Display Usage analog signal shows only the current total display usage reported by the display.

Programming the Fusion SSI Device Usage Module

One of the many features of Crestron Fusion Cloud is the ability to track usage information for AV or other devices within the room. Some examples of these devices are DVD players, PCs, and document cameras. This module generates usage data (in minutes) that is then formatted and sent to the database. This information is then available to the Crestron Fusion Cloud Reports section.

This procedure identifies programming required for device usage which then sends the data to the Fusion SSI module.

Prerequisites

For adding the Device Usage module, the following are necessary:

- Program with a processor defined
- Fusion SSI module and the Fusion Room Device definition added
- Functional programming substantially completed before adding the Fusion Room Device definition and additional modules (highly recommended)

For more information, refer to the “Adding the Fusion Room Device Definition” and “Adding the Fusion SSI Module to a Program” sections.

Signal Definitions

Inputs Table

Module Signal Name	Definition
System_Powered_Off	This signal is used to indicate to the Device Usage module that the system has been shut off and all counters are stopped.
Device(x)_In_Use	This signal triggers the module counter to start for the source equipment on the rising edge and turns it off on the falling edge.
[Device(x)_Type_txt\$]	This signal defines the type of source equipment.
[Device(x)_Name_txt\$]	This signal defines the actual device name for the source equipment.

Outputs Table

Module Signal Name	Definition
Device_Usage_String_tx\$	This data is created by the module outputs on this serial string, and is connected to the Device_Usage_String_in\$ input on the Fusion SSI module.

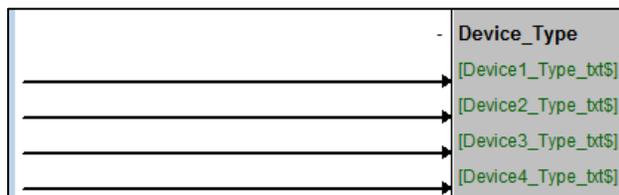
Parameter Fields Table

Module Signal Name	Definition
Device(x)_Type\$	This signal defines the type of source equipment.
Device(x)_Name\$	This signal defines the specific name of the source equipment.

Procedure

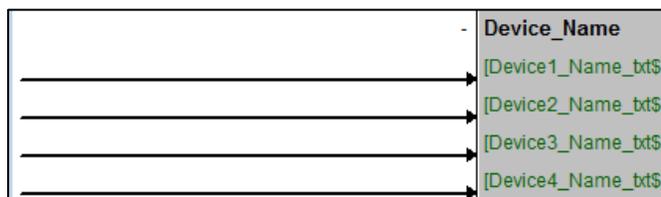
1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify that the Fusion Room Device definition has been added to the program.
3. Add the Fusion SSI Device Usage module to the program under the Device folder.
 - The module is located under the Crestron Database in the Fusion folder.
 - If the Device folder is not present, refer to the “Adding the Fusion SSI Module to a Program” section.
4. Program the three lines (each display on the module has three lines) according to the guidelines below. If the individual lines described above are not used for device type and device name, fill in the parameter fields listed at the bottom of the module.
 - To send the device type via programming, send a serial string containing the type to Device(x)_Type_txt\$, for example, PC.

Device Type Examples



- To send the device name via programming, send a serial string containing the name to Device(x)_Type_txt\$, for example, Instructor DVD Player.

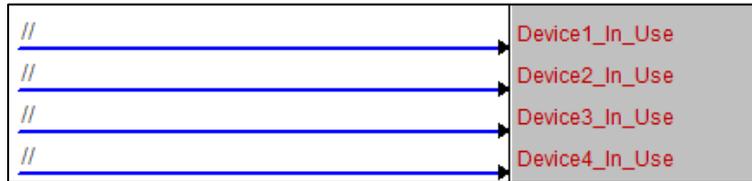
Device Name Examples



- The digital signal for Device(x)_In_Use is used to calculate the usage data. Programming logic should be written to drive this signal high when the device is in use and low when it is not in use. Follow the steps below:
 - If the device has a button (such as a Play button) that starts the device, use the feedback from this signal to drive the digital input high. If feedback does not get held high on the press, use a logic symbol such as a Set/Reset Latch or Toggle to hold the digital input high for as long as the device is in use.

- o If the device has power feedback for on and off, use the feedback from Power On to drive the input high and then low when the power is turned off.
- o If feedback from the device is not available, use the feedback from an interlock symbol (interlocked with other devices) to drive the digital input for Device(x)_In_Use high and low.
- The Device(x)_Type\$ should be filled in according to the type of the device. This field corresponds to the device input fields at the top of the module.

Device(x)_Type\$ Example



- Device(x)_Name\$ should be filled in according to the name of the device. This field corresponds to the device input fields at the top of the module.

Device(x)_Name\$ and Device(x)_Type\$ Examples

Device1_Type\$	Generic Source
Device1_Name\$	AM-100
Device2_Type\$	Generic Source
Device2_Name\$	"Device 2"
Device3_Type\$	Generic Source
Device3_Name\$	"Device 3"
Device4_Type\$	Generic Source
Device4_Name\$	"Device 4"

5. If the Device Usage Module is full, add another Device Usage Module to the program and repeat these steps as necessary.

NOTE: Device Usage is calculated by the rise and fall of the digital signal for Device(x)_In_Use. Based on the incoming digital signal, the rising edge starts the timer and the falling edge of the incoming digital signal stops the timer. The module calculates the time (in minutes) and converts the data to be sent to the Crestron Fusion Cloud database.

NOTE: The custom name and type fields are used for systems where this information is dynamically sent to the program based on preconfigured devices. Two examples of this are the DMPS and DM® switcher configurations. The names of the inputs and outputs can be entered via Crestron Toolbox™ software.

In programming, these names can be sent via serial strings from the switcher or DMPS to this module. It is suggested to standardize the programming across all room standards, although the names in each room for sources may differ.

NOTE: All displays should be programmed to use the Display Usage module separately and exclusively of the Device Usage module.

Programming the Fusion SSI Equipment Status Module

System messages can be triggered by programming and sent to Crestron Fusion Cloud to indicate a level of severity and a custom message (both sent at once). This module is designed to send triggers from programming to Crestron Fusion Cloud.

This procedure includes any system status messages that need to be sent to Crestron Fusion Cloud.

Prerequisites

For adding the Equipment Status Module, the following are necessary:

- Program with a processor defined
- Fusion SSI Module and the Fusion Room Device definition added
- Functional programming substantially completed before adding the Fusion Room Device definition (highly recommended)

For more information, refer to the “Adding the Fusion Room Device Definition” and “Adding the Fusion SSI Module to a Program” sections.

Signal Definitions

Inputs Table

Module Signal Name	Definition
Status_Trigger_(x)	This signal triggers the coordinating parameter fields in a serial string format to be sent to the Fusion SSI module.

Outputs Table

Module Signal Name	Definition
Equipment_Status_tx\$	This serial string output is sent to the Device_Usage_String_in\$ input on the Fusion SSI module.

Parameter Fields Table

Module Signal Name	Definition
Trigger_(x)_Severity	This signal defines the severity level of the status being sent. The values can be Ok, Notification, Warning, Critical, or Fatal.
Trigger_(x)_Status_Error_Text	This signal defines the custom message being sent.
Trigger_(x)_Ok_Text	This signal defines the custom message to be sent when the trigger resets to Ok. This occurs when the Status_Trigger_(x) digital signal goes low.

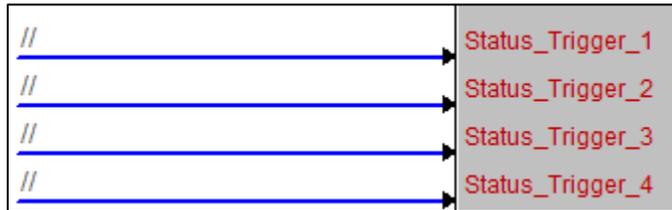
Procedure

1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify that the Fusion Room Device definition has been added to the program.

3. Add the Fusion SSI Equipment Status Module to the program under the Equipment Status folder.

- The module is located under the Crestron database in the folder labeled Fusion.
- If the Equipment Status folder is not present, refer to the “Adding the Fusion SSI Module to a Program” section.
- Up to 16 status messages can be programmed on this module to be sent to Crestron Fusion Cloud. The first section identifies the actual triggers.
 - Status_Trigger_(x) should be tied to programming logic that generates an error state via a digital high/low state.

Status_Trigger_(x)



- The corresponding message (defined below) is sent on the rising edge of the digital signal.
- The message is cleared on the falling edge of the signal.
- The Trigger_(x)_Severity indicates the severity level of the message defined by the drop-down menu.

The choices are Ok (0d), Notice (1d), Warning (2d), Error (3d), Fatal (4d). The Ok severity is automatically triggered on the falling edge to clear the message in Crestron Fusion Cloud. Selecting this severity does not show in Crestron Fusion Cloud but does record to the database.
- The Trigger_(x)_Status_Error_Text indicates the actual message. Fill in this field with the message to be sent to Crestron Fusion Cloud, for example, Device is Offline, Temperature Too High, Motion Detected.
- The Trigger_(x)_Ok_Text indicates the message is sent when the status changes to Ok (assigned analog value of 0d).

Triggers

Trigger_1_Severity	Fatal
Trigger_1_Status_Error_Text	Display Offline
Trigger_1_Ok_Text	Display Online
Trigger_2_Severity	Error
Trigger_2_Status_Error_Text	AM-100 Offline
Trigger_2_Ok_Text	AM-100 Online
Trigger_3_Severity	Fatal
Trigger_3_Status_Error_Text	DGE-100 Offline
Trigger_3_Ok_Text	DGE-100 Online
Trigger_4_Severity	Error
Trigger_4_Status_Error_Text	TS Offline
Trigger_4_Ok_Text	TS Online

- The Equipment_Status_tx\$ should be tied to the Equipment_Status\$ on the Fusion SSI module.

Equipment Status

Equipment Status v1.1.1	
Equipment_Status_tx\$	error_log

Programming the Fusion SSI Help Request and Response Module

This module is used to trigger Help Requests from the room, which are then sent to Crestron Fusion Cloud. Responses are sent to the room and typically are displayed on a touch screen or display for the end user. This module also accommodates the ability to send and receive custom messages.

This procedure identifies programming help request and response messages between the Help Request and Response module and the Fusion SSI module.

Prerequisites

For adding the Help Request and Response Module, the following are necessary:

- Program with a processor defined
- Fusion SSI Module and the Fusion Room Device definition added
- Functional programming substantially completed before adding the Fusion Room Device definition and additional modules (highly recommended)

For more information, refer to the “Adding the Fusion Room Device Definition” and “Adding the Fusion SSI Module to a Program” sections.

Signal Definitions

Inputs Table

Module Signal Name	Definition
Help_Response\$	This serial string is returned from Crestron Fusion Cloud. This module parses this string and formats it for the user interface. This string is in XML format.
Message_Text\$	
Send_Message	This serial string is sent to the Fusion SSI module and passed through to Crestron Fusion Cloud. The maximum character length is 250 characters and is not gathered or buffered.
[Cancel_Request]	This digital signal (when sent high) checks for the serial string in the Message_Text\$ or in a continued text conversation format from the current text serial string and sends the string to the Fusion SSI module and then passes it through to Crestron Fusion Cloud.
[Send_Help_Message_(x)]	This signal checks for existing conversation and sends a cancel to close the conversation.
	This digital signal (when triggered) sends out the corresponding Message (x) parameter field to the Fusion SSI module and passes it through to Crestron Fusion Cloud.

Outputs Table

Module Signal Name	Definition
Help_Request\$	This serial string (that has been formatted by the module) is sent out to the Fusion SSI module and is then passed through to Crestron Fusion Cloud.
Response_Message\$	This serial string (that has been formatted by the module) is sent to a user interface. The format has a date and time stamp. A message is formatted as a [From] to [To]: [Message] where the From field contains the user sending the response to the room. The [Message] contains the text string message sent by the user.
Message_Received	This digital signal remains high for the duration of the conversation. A resolved command issued from Crestron Fusion Cloud or a Cancel Message trigger forces the digital signal to go low.
[Resolved]	This digital signal is triggered 5 seconds after a canceled or resolved command has been issued.

Parameter Fields Table

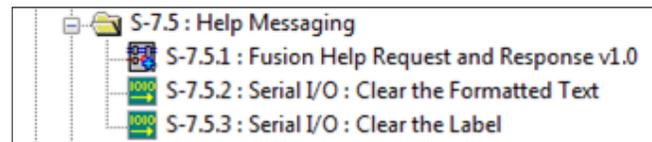
Module Signal Name	Definition
Date_Format	This signal selects the type of date format used for the help request and response conversation. 1 = MM/DD/YYYY 2 = DD/MM/YYYY 3 = YYYY/MM/DD 4 = MM/DD/YY

Module Signal Name	Definition
Time_Format	This signal selects the type of time format used for the help request and response conversation. 1 = 24-Hour Format 2 = 12-Hour Format
Message (x)	This preset message field is sent based on the corresponding [Send_Help_Message_(x)] string.

Procedure

1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify that the Fusion Room Device definition has been added to the program.
3. Add the Fusion SSI Help request and Response Message module to the program under the Help Messaging folder.
 - The module is located under the Crestron database in the folder labeled Fusion.
 - If the Help Request folder is not present, refer to the “Adding the Fusion SSI Module to a Program” section.
4. Add two SIO modules to the Help Messaging folder. The SIO modules are used to issue return strings for the messages.

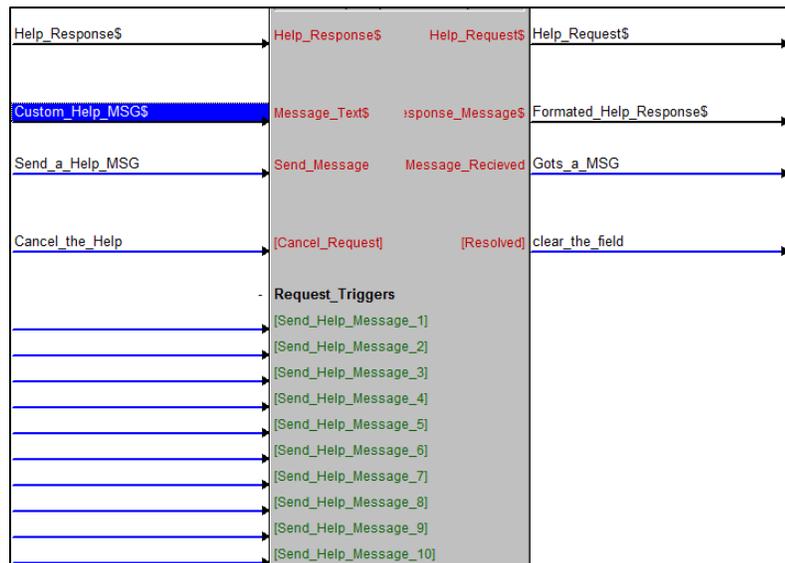
Help Messaging Folder



5. Program the inputs and outputs of the module.
 - The Help_Response\$ input signal is tied to the Fusion SSI Module on the [Help_Response\$] output.
 - The Message_Text\$ should be tied to a serial signal providing formatted text for a custom help request. This can be invoked by using a built-in keyboard on the touch screen or a custom keyboard page designed in the user interface project.
 - The Send_Message digital input works with both the serial Message_Text\$ and the Send_Help_Message_x digital inputs. In order to send the message to Crestron Fusion, send the serial string to Message_Text\$ or trigger the digital input for Send_Help_Message_x high and then immediately follow it with sending the Send_Message digital input high. The Message_Text\$ and the Send_Help_Message_x digital inputs enter a serial queue internally to the module and are then sent with the rising edge of Send_Message.
 - The [Cancel_Request] digital input should be tied to a button on the user interface so that, when sent high, it clears the help request coming from the room.

- The [Send_Help_Message_(x)] digital inputs correspond to the Message (x) parameters. The digital signal is pulsed high for the corresponding message to be sent to the Help_Request\$ output. These digital inputs should tie to button presses on the user interface.
- The Help_Request\$ serial output signal ties to the Fusion SSI Module on the [Help_Request\$] serial input.
- The Response_Message\$ serial output is tied to a serial input on a user interface. This displays the response message coming from Crestron Fusion Cloud.
- The Message_Received digital output can be used to trigger subpage references or other methods to invoke a screen to appear that shows the Help conversation.
- The [Resolved] digital output should be tied to the second SIO to end and clear the conversation. The resolved trigger is a button press from Crestron Fusion Cloud, which is then processed through the Help_Response\$ XML.

Help_Response\$ and Help_Request\$ Example



- The parameter fields dictate the formatting of the time, date, and preset messages, which are triggered by [Send_Help_Message_(x)] correspondingly.

Parameter Fields

Date_Format	YYYY/MM/DD
Time_Format	12 Hour
Message 1	****
Message 2	****
Message 3	****
Message 4	****
Message 5	****
Message 6	****
Message 7	****
Message 8	****
Message 9	****
Message 10	****

Programming the Fusion SSI Broadcast Message Module

This module is used to trigger broadcast messages across a Crestron Fusion Cloud system. Messages appear on touch screens, displays, and other devices. These messages can be general information, weather, fire, or any message that needs to be sent quickly and can effectively reach the attention of all employees, students, etc.

This procedure identifies programming broadcast messages which then sends the data to the Fusion SSI module.

Prerequisites

For adding the Broadcast Message Module, the following are necessary:

- Program with a processor defined
- Fusion SSI module and the Fusion Room Device definition added
- Functional programming substantially completed before adding the Fusion Room Device definition and additional modules (highly recommended)

For more information, refer to the “Adding the Fusion Room Device Definition” and “Adding the Fusion SSI Module to a Program” sections.

Signal Definitions

Inputs Table

Module Signal Name	Definition
Broadcast_Message_Type	This analog value indicates the type of broadcast message that is received from Crestron Fusion Cloud. The values are as follows: 0 – Clear Message 1 – Standard Message 2 – Building Emergency Message 3 – Environmental Emergency Message 4 – General Emergency Message 5 – Medical Emergency Message 6 – Police Emergency Message 7 – Safety Emergency Message 8 – Weather Emergency Message 9 – Custom Emergency Message
Broadcast_Message\$	This serial string is received and contains the actual message. This string can be sent to an indirect text field to display on a touch screen.

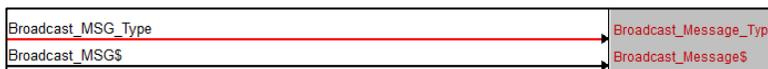
Outputs Table

Module Signal Name	Definition
Message_Type_Value	This analog value is returned and indicates the message type. The values returned are as follows: 0 – Clear Message 1 – Standard Message 2 – Building Emergency Message 3 – Environmental Emergency Message 4 – General Emergency Message 5 – Medical Emergency Message 6 – Police Emergency Message 7 – Safety Emergency Message 8 – Weather Emergency Message 9 – Custom Emergency Message
Any_Message_Type_Active	This digital signal indicates that a message has been received. This signal also sends a received message and message type to processor log file.
Message_Text\$	This serial value returns the message received from Crestron Fusion Cloud. This value can be sent to an indirect text field to be displayed on a touch screen.
Message_Type_Digitals	These digital values are held high depending on the message type received from Crestron Fusion Cloud. The corresponding value holds the output high until the message is cleared. These values can be used to trigger subpages on a touch screen to display message information.

Procedure

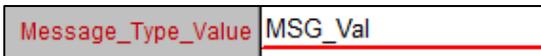
1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify that the Fusion Room Device definition has been added to the program.
3. Add the Fusion SSI Broadcast Message Module to the program under the Broadcast Message folder.
 - The module is located under the Crestron Fusion Cloud database in the Fusion folder.
 - If the Broadcast Message folder is not present, refer to the “Adding the Fusion SSI Module to a Program” section.
4. Refer to the information below when programming the inputs and outputs of the module.
 - The Broadcast_Message_Type and Broadcast_Message\$ inputs are tied to the outputs of [Broadcast_Message_Type] and [Broadcast_Message\$] on the Fusion SSI module respectively.

Broadcast_Message_Type and Broadcast_Message\$ Example



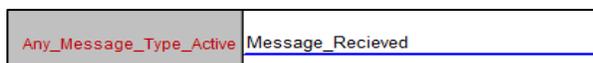
- The Message_Type_Value returns a value of 0–9 and can be used to trigger events in programming.

Message_Type_Value Example



- The Any_Message_Type_Active can be used in programming to indicate that a message has been received into the program.

Any_Message_Type_Active Example



- The Message_Text\$ is the actual message sent from Crestron Fusion Cloud. Normally this is sent to an indirect text field on an interface.

Message_Text\$ Example



- The Message_Type_Digitals can be used to trigger subpages or other logic when that particular message type is selected.

Message_Type_Digitals Example

Message_Type_Digitals	-
[Standard_Message]	
[General_Emergency_Message]	
[Building_Emergency_Message]	
[Enviromental_Emergency_Message]	
[General_Emergency_Message]	
[Medical_Emergency_Message]	
[Police_Emergency_Message]	
[Safety_Emergency_Message]	
[Weather_Emergency_Message]	

NOTE: This module also sends received messages and message types to the processor log file.

Programming the Fusion SSI Text Message Send and Receive Module

This module is used to send text messages between the room and Crestron Fusion Cloud. This procedure identifies programming text messages that then send the data to the Fusion SSI module.

Prerequisites

For adding the Text Message Module, the following are necessary:

- Program with a processor defined
- Fusion SSI module and the Fusion Room Device definition added
- Functional programming substantially completed before adding the Fusion Room Device definition and additional modules (highly recommended)

For more information, refer to the “Adding the Fusion Room Device Definition” and “Adding the Fusion SSI Module to a Program” sections.

Signal Definitions

Inputs Table

Module Signal Name	Definition
Text_Message_RX\$	This serial string is received from Crestron Fusion Cloud. This string is formatted by the module and sent out via the Formatted_Text\$ serial output.
Text_Input	This serial string contains the text message sent out to Crestron Fusion Cloud.
Send Message	This digital input formats the serial string message to be sent to Crestron Fusion Cloud and then transmits the string.

Outputs Table

Module Signal Name	Definition
Text_Message_TX\$	This is the formatted serial string that is sent to Crestron Fusion Cloud.
Formatted_Text\$	This is the serial output of the serial text message string. The data is formatted as: Date Time [From] to [To]: [Message] where [From] contains the current Crestron Fusion Cloud username who is sending the message, [To] is always You and [Message] contains the actual serial string message sent from Crestron Fusion Cloud.
[Message_Received]	This is the digital signal which is pulsed to indicate a message has been received.

Parameter Fields Table

Module Signal Name	Definition
Date Format	This signal selects the type of date format that is used for the help request and response conversation. 1 = MM/DD/YYYY 2 = DD/MM/YYYY 3 = YYYY/MM/DD 4 = MM/DD/YY
Time Format	This signal selects the type of time format used for the help request and response conversation. 1 = 24-Hour Format 2 = 12-Hour Format

Procedure

1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify that the Fusion Room Device definition has been added to the program.
3. Add the Fusion SSI Text Message Module to the program under the Broadcast Message folder.
 - The module is located under the Crestron database in the folder labeled Fusion.
 - If the Text Messaging folder is not present, refer to the “Adding the Fusion SSI Module to a Program” section.
4. Program the inputs and outputs of the module.
 - The Text_Message_RX\$ is tied to the Fusion SSI Module on the [Text_Message_RX\$] serial output signal.
 - Text_Input should be tied to a serial signal providing formatted text to be sent to Crestron Fusion Cloud. This can be invoked by using a built-in keyboard on the touch screen or a custom keyboard page designed in the user interface project.
 - The Send_Message digital input should be tied to a button on the touch screen to send the text message string.

- The Text_Message_TX\$ serial output ties to the Fusion SSI module on the {Text_Message_TX\$} serial input signal.
- [Message_Received] is a digital output that is pulsed upon a received message. This can be used to trigger a subpage, small graphic, or text field to indicate that a message has been received.

Text Message Send and Receive Example



- The parameter fields dictate the formatting for the time and date stamp associated with the text messages.

Date Format and Time Format Example

Date Format	MM/DD/YYYY
Time Format	12 Hour

Programming the Fusion SSI Scheduling Awareness Module

This module is used to retrieve basic scheduling information from Crestron Fusion Cloud.

This procedure identifies programming to retrieve scheduling data from Crestron Fusion Cloud, which is then parsed through the module to be sent to a display.

Prerequisites

For adding the Scheduling Awareness Module, the following are necessary:

- Program with a processor defined
- Fusion SSI Module, and the Fusion Room Device definition added
- Functional programming substantially completed before adding the Fusion Room Device definition and additional modules (highly recommended)

For more information, refer to “Adding the Fusion Room Device Definition” and “Adding the Fusion SSI Module to a Program” sections.

Signal Definitions

Inputs Table

Group Name	Module Signal Name	Definition
Room_Setup	Room_Offline_FB	This signal can be tied to offline manager to determine online and offline status. The module behavior is different depending on the response.

Group Name	Module Signal Name	Definition
Room_Setup	Get_Schedule	This signal can be triggered to send a schedule query for the room.
Room_Setup	Room_Occupied	This signal can be tied to occupancy sensor feedback to state whether the room is occupied or unoccupied.
Room_Setup	Enable_Decline_For_No_Show	This signal (when high) enables a decline for a no show. This cancels meetings that are a preset number of minutes after the meeting start time (if the room has not been occupied or other feedback has not been met) indicating that the room is in use.
Room_Setup	Disable_Push_Registration	This signal disables the request for push notification query from this module.
Meeting_Control	End_Meeting	This signal when sent high ends the current meeting. This does not delete the meeting from the calendar, but changes the end time of the meeting to make the room available.
Meeting_Control	Extend_Meeting_15_Minutes	When pulsed extends the current meeting 15 minutes if time is available.
Meeting_Control	Extend_Meeting_30_Minutes	This signal (when pulsed) extends the current meeting 30 minutes, if time is available.
Meeting_Control	Extend_Meeting_60_Minutes	This signal (when pulsed) extends the current meeting 60 minutes, if time is available.

Outputs Table

Group Name	Module Signal Name	Definition
Room_Setup	Room_Name_txt\$	This signal returns the name of the room.
Room_Setup	Get_Schedule_Busy_fb	When high this signal indicates that the room is currently waiting on scheduling data.
Room_Setup	Decline_For_No_Show_Enabled_fb	This signal indicates if Decline for No Show has been enabled.
Room_Setup	Room_Push_Registered_fb	This signal indicates if the room has been push registered. Relies on feedback from Crestron Fusion Cloud to indicate this.
UI_Control	[Show_Upcoming_Hours_and_Minutes_Countdown]	This signal goes high if there are both an hour and a minute value of remaining time until the next scheduled meeting.
UI_Control	[Show_Upcoming_Minutes_Countdown]	This signal goes high if only a minute value of remaining time is left until the next scheduled meeting.
UI_Control	[Upcoming_Countdown_Hours_Value]	This signal indicates the hours remaining until the next scheduled meeting.
UI_Control	[Upcoming_Countdown_Minutes_Value]	This signal indicates the minutes remaining until the next scheduled meeting.
UI_Control	[Show_Current_Minutes_Countdown]	This signal goes high if only a minute value of remaining time is left for a current meeting.

Group Name	Module Signal Name	Definition
UI_Control	[Show_Current_Hours_and_Minutes_Countdown]	This signal goes high if there are both an hour and a minute value of remaining time for a current meeting.
UI_Control	[Current_Countdown_Hours_Value]	This analog value is returned with the hour countdown value for the current meeting.
UI_Control	[Current_Countdown_Minutes_Value]	This analog value is returned with the minute countdown value for the current meeting.
UI_Control	[Show_Available_for_the_Next_Banner]	This digital signal triggers high when the room is available. This trigger is used to indicate time until the next meeting.
UI_Control	[Show_Available_For_the_Day_Banner]	This digital signal triggers high when the room is available. This trigger is used when there are no meetings for the rest of the day.
UI_Control	[Show_Reserved_Banner]	This digital signal triggers high when the room is currently reserved. This signal can be used to display a message on the user UI when the room is reserved.
UI_Control	[Show_Info_Field]	This digital signal triggers high when the room is currently reserved to show meeting information. This signal can be used to display a subpage on the user interface to show current meeting information.
UI_Control	[Show_Next_Up]	This digital signal triggers high, when the room is currently reserved, to show meeting information for the next meeting. This signal can be used to display a subpage on the user interface to show the current meeting information.
Meeting_Control	Extend_Meeting_Busy_fb	This digital signal (when high) indicates the system is currently busy updating the meeting to extend it the predetermined amount of time.
Meeting_Control	Allow_Extend_Meeting_15_Minutes_fb	This is the digital pulsed feedback that indicates the extend meeting 15 minutes digital input has been selected.
Meeting_Control	Allow_Extend_Meeting_30_Minutes_fb	This is the digital pulsed feedback that indicates the extend meeting 30 minutes digital input has been selected.
Meeting_Control	Allow_Extend_Meeting_60_Minutes_fb	This is the digital pulsed feedback that indicates the extend meeting 60 minutes digital input has been selected.
Meeting_Control	Extend_Meeting_Success_Pulse	This is the digital pulsed feedback that indicates the meeting has successfully been extended.
Meeting_Control	Extend_Meeting_Error_Pulse	This is the digital pulsed feedback that indicates the meeting has not been extended due to an error.
Current_Meeting_Information	Meeting_In_Progress_fb	This is the digital feedback that indicates a meeting is currently in progress.
Current_Meeting_Information	Current_Meeting_Subject_txt\$	This signal contains data for the current meeting subject name.

Group Name	Module Signal Name	Definition
Current_Meeting_Information	Current_Meeting_Organizer_txt\$	This signal contains data for the current meeting organizer name.
Current_Meeting_Information	Current_Meeting_Start_Time_txt\$	This signal contains data for the current meeting start time.
Current_Meeting_Information	Current_Meeting_End_Time_txt\$	This signal contains data for the current meeting end time.
Current_Meeting_Information	Current_Meeting_Formatted_Time_txt\$	The data contained in this signal is a formatted string indicating the date and start time through the end time of the current meeting, for example, 01-01-01 9:30-10:30.
Current_Meeting_Information	Current_Meeting_Time_Remaining_txt\$	This signal contains data for the time remaining for the current meeting.
Current_Meeting_Information	Current_Meeting_RV_Meeting_ID_txt\$	This signal contains data for the current meeting ID in the Fusion database.
Current_Meeting_Information	Current_Meeting_Start_Time_fb	This analog value can be used for a gauge to graphically indicate the countdown time before the current meeting start time.
Current_Meeting_Information	Current_Meeting_End_Time_fb	This analog value can be used for a gauge to graphically indicate the countdown time before the current meeting end time.
Current_Meeting_Information	Current_Meeting_Time_Remaining_fb	This analog value can be used for a gauge to graphically indicate the countdown time remaining for the current meeting.
Next_Meeting_Information	Next_Meeting_Subject_txt\$	This signal contains data for the next meeting's subject name.
Next_Meeting_Information	Next_Meeting_Organizer_txt\$	This signal contains data for the next meeting's organizer name.
Next_Meeting_Information	Next_Meeting_Start_Time_txt\$	This signal contains data for the next meeting's start time.
Next_Meeting_Information	Next_Meeting_End_Time_txt\$	This signal contains data for the next meeting's end time.
Next_Meeting_Information	Next_Meeting_Formatted_Time_txt\$	The data contained in this signal is a formatted string indicating the date and start time through the end time of the next meeting, for example, 01-01-01 9:30-10:30.
Next_Meeting_Information	Next_Meeting_RV_Meeting_ID_txt\$	This signal contains data for the next meeting ID in the Crestron Fusion Cloud database.
Next_Meeting_Information	Next_Meeting_Start_Time_fb	This analog value can be used for a gauge to graphically indicate the countdown time before the next meeting start time.
Next_Meeting_Information	Next_Meeting_End_Time_fb	This analog value can be used for a gauge to graphically indicate the countdown time before the next meeting end time.
Third_Meeting_Information	Third_Meeting_Subject_txt\$	This signal contains data for a third meeting's subject name. This meeting is third in order starting with the current meeting as number one.

Group Name	Module Signal Name	Definition
Third_Meeting_Information	Third_Meeting_Organizer_txt\$	This signal contains data for the third meeting's organizer name. This meeting is third in order starting with the current meeting as number one.
Third_Meeting_Information	Third_Meeting_Start_Time_txt\$	This signal contains data for the third meeting's start time. This meeting is third in order starting with the current meeting as number one.
Third_Meeting_Information	Third_Meeting_End_Time_txt\$	This signal contains data for the third meeting's end time. This meeting is third in order starting with the current meeting as number one.
Third_Meeting_Information	Third_Meeting_Formatted_Time_txt\$	This signal contains data in a formatted string and indicates the date and start time through the end time of the third meeting, for example, 01-01-01 9:30-10:30.
Third_Meeting_Information	Third_Meeting_RV_Meeting_ID_txt\$	This signal contains data for the third meeting ID in the Crestron Fusion Cloud database. This meeting is third in order starting with the current meeting as number one.
Third_Meeting_Information	Third_Meeting_Start_Time_fb	This analog value can be used for a gauge to graphically indicate the countdown time before the third meeting start time.
Third_Meeting_Information	Third_Meeting_End_Time_fb	This analog value can be used for a gauge to graphically indicate the countdown time before the third meeting end time.

Parameter Fields Table

Module Signal Name	Definition
Decline_For_No_Show_Minutes	This signal dictates the number of minutes to wait past the meeting start time before sending a meeting cancellation that is due to no attendee presence in the room.
Allow_Push_Registration	This signal enables and disables the Push Registration.
Upcoming_Show_Minutes	This signal indicates the character string length for the upcoming show minutes serial string.
Scheduler ID	This signal is used only if there are multiple Scheduling Awareness modules used in the same program.

Procedure

1. Verify that all functional programming for the room associated with Crestron Fusion Cloud is complete.
2. Verify that the Fusion Room Device definition has been added to the program.
3. Add the Fusion SSI Scheduling Awareness module to the program under the Meeting Information folder.

Glossary of Terms

Crestron Direct Connect Display: This is a list of display manufacturers that are partnered with Crestron and that have implemented technology on their display chipsets to interface directly to Crestron Fusion Cloud without the need of a Crestron processor.

Fusion Room Device Definition: This definition is the base programming module that is added as a device under the equipment view in SIMPL or as a room in Crestron Studio® software. All communication to the Crestron Fusion Cloud server (inbound and outbound) flows through this definition.

Fusion SSI Display Usage Module: This module is tied directly to the Fusion Room Device definition. All other Crestron Fusion Cloud modules feed through this module to the Fusion Room Device definition to then send the information to the Crestron Fusion Cloud server (database).

Fusion SSI Module: This module is linked to all of the programming signals and is then tied directly to the Fusion Room Device definition.

Static Asset: This is an asset in Crestron Fusion Cloud that does not have maintained data exchange with Crestron Fusion Cloud and the Crestron Fusion Cloud database. Mainly this is used as an automatic way to add Assets into the database through programming.

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Crestron Electronics, Inc.
15 Volvo Drive Rockleigh, NJ 07647
Tel: 888.CRESTRON
Fax: 201.767.7576
www.crestron.com



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