Integrating Crestron Fusion® Cloud Software with Google Calendar™ Application

Setup and Configuration

Crestron Electronics, Inc.

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Integrating Crestron Fusion Cloud Software with Google Calendar Application

Overview

Crestron® developers have integrated Crestron Fusion Cloud with Google Calendar scheduling software. This document provides the necessary information to configure the Google Calendar API and set up Crestron Fusion Cloud so that it can access the Google Calendar API.

Initial Setup

Set up a domain on the Google® API website with the following:

- Administrator Account
- User Accounts
- Room Resources (Refer to “Appendix A: Creating Room Resources” for setup instructions)

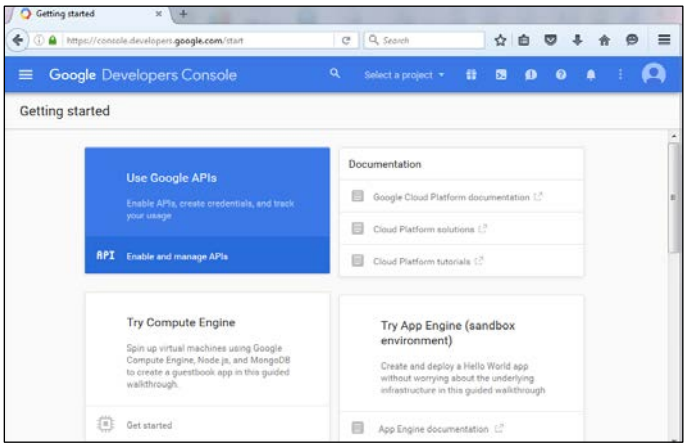
Configure the Google Calendar API

For Crestron Fusion Cloud to exchange data with Google calendars, activate the Google Calendar API and configure the security.

Activate the Google Calendar API for the Domain

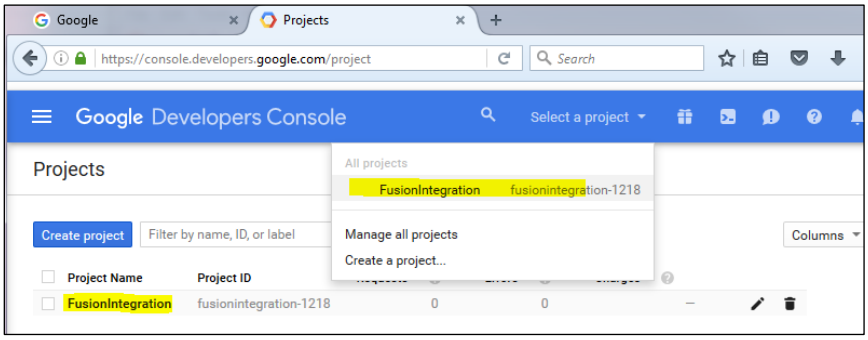
1. Using the Google Chrome™ or Firefox® browser, navigate to the following URL: https://console.developers.google.com/project.
2. Log in using an administrator account. Once you are logged in as an administrator, the **Google Developers Console** page opens.

   Google Developers Console Page without Loaded Project

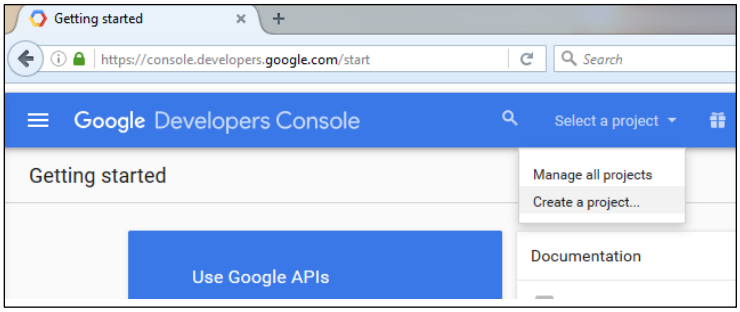
3. Click the **Select a Project** drop-down list and select the API project that will be used for the Google Calendar integration with Crestron Fusion Cloud.

   Project Selection

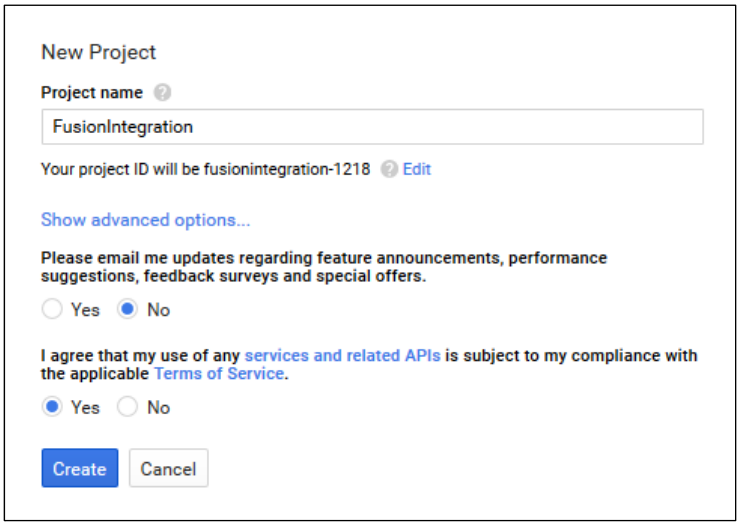
   

4. Click **Create a project** to open the **New Project** form, if no projects are listed in the drop-down list.

Create a Project Selection

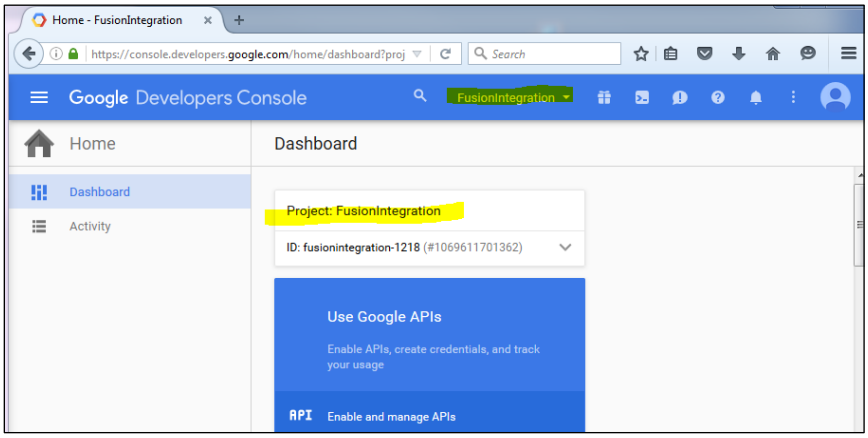


New Project Form



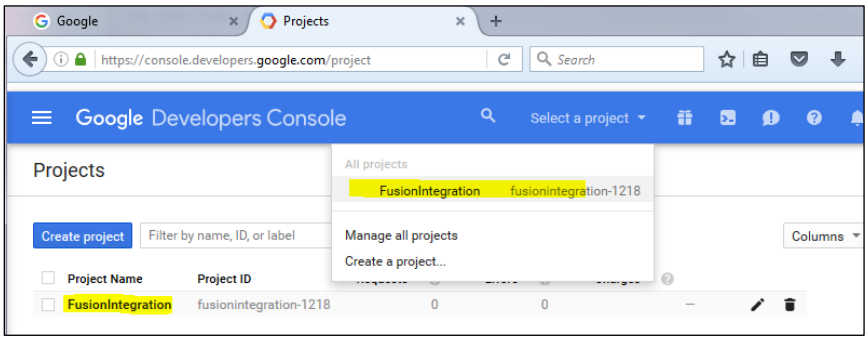
5. Enter a **Project name** and click **Create**.
6. Load an API project into the **Google Developers Console** page. When the project is loaded, the project name is displayed in the **Select a project** drop-down list and in the **Project** field.

Console Dashboard after Project Selection



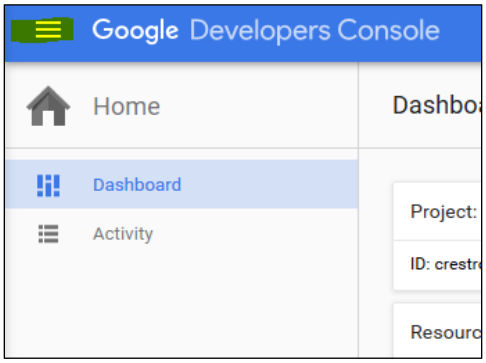
7. Click the **Project Name** link from the **Select a project** drop-down list, if a project is not displayed.

Select a Project Drop-Down List

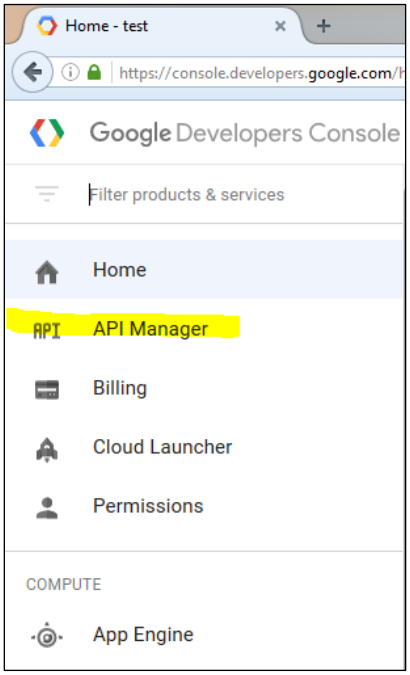


8. Click the link in the upper left-hand corner to activate the Google Calendar API, and open the **Google Developers Console** menu.

Google Calendar API Activate Link

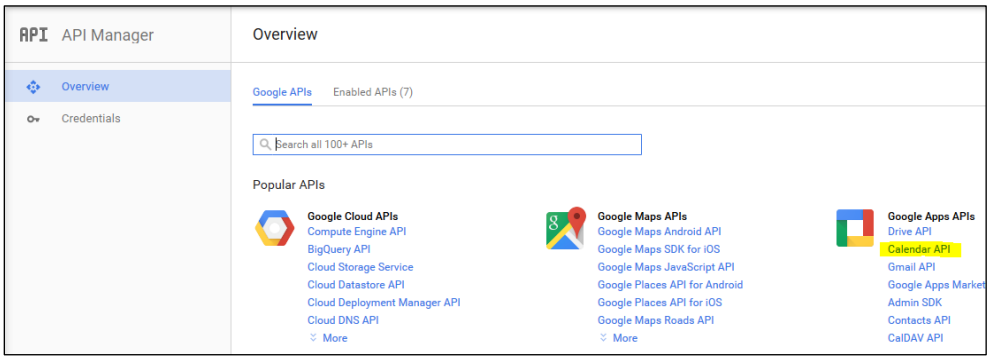


Google Developers Console Menu



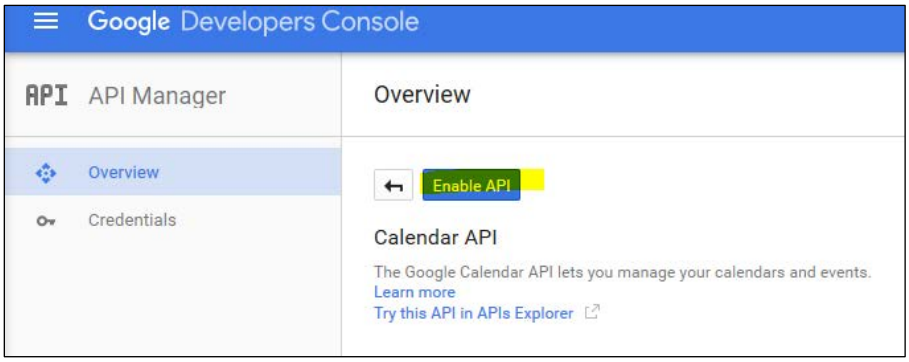
9. Click the **API Manager** link to open the **API Manager** page. The **API Manager** will turn on the Google Calendar API.

API Manager Page



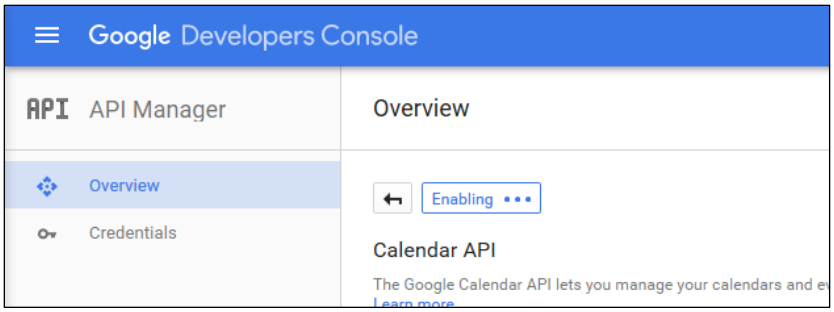
10. Click the **Calendar API** link to enable the API.

API Manager - Enable API

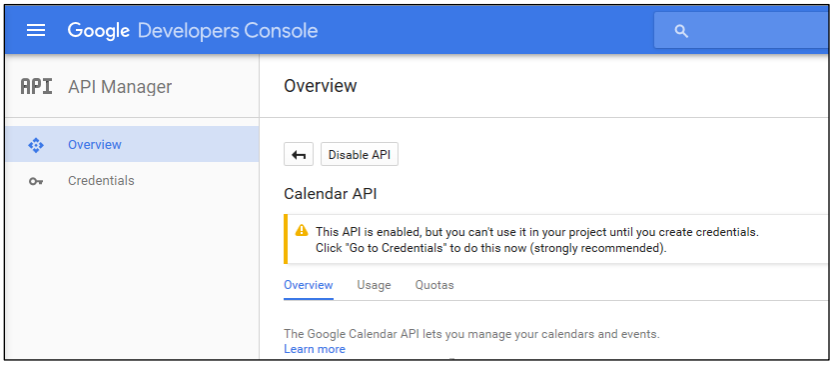


11. Click **Enable API** to start the Google Calendar API web service. Once the web service is enabled, the button label changes to **Disable API**.

Enable API in Intermediate State



Disable API in Intermediate State

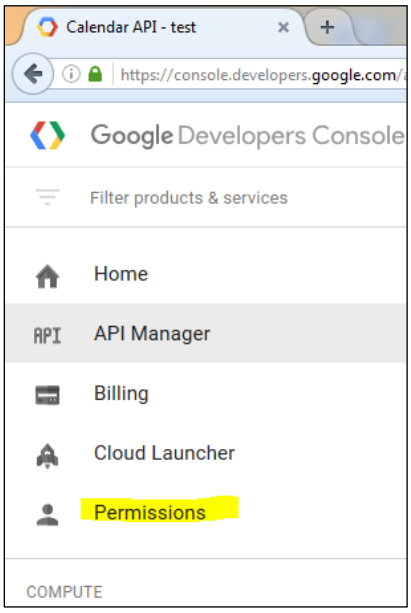


Set Up Security

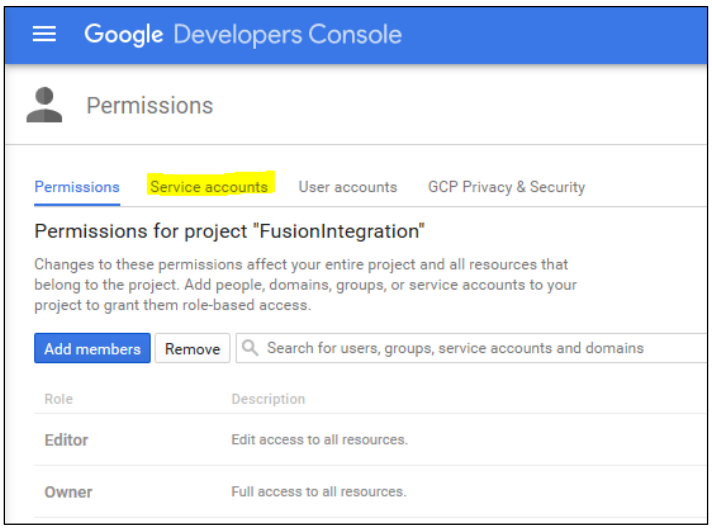
To set up security, complete the steps below.

1. Reopen the **Google Developers Console** menu using the process described in the "Activate the Google Calendar API for the Domain" section.
2. Click the **Permissions** link to open the **Permissions** page.

Permissions Link



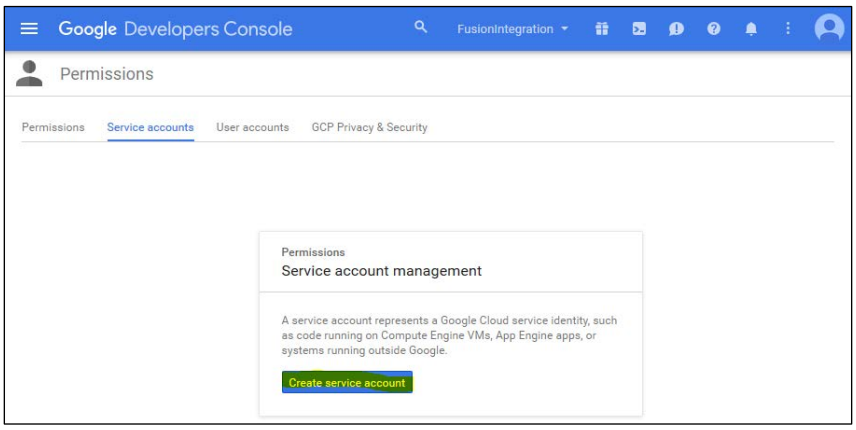
Permissions Page



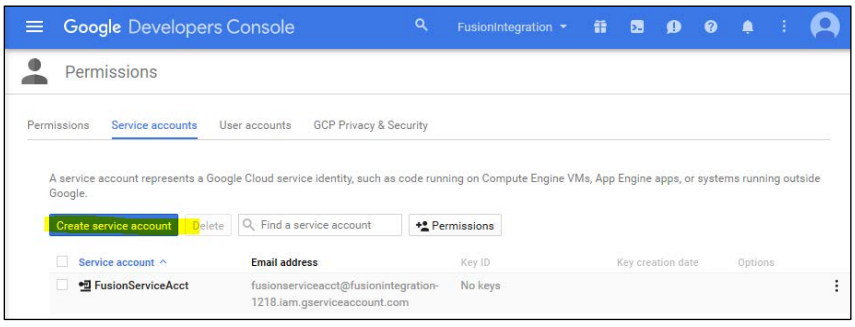
From the **Permissions** page you can access the service accounts that Crestron Fusion Cloud will use to access the Google Calendar API.

3. Click the **Service accounts** link to open the **Service accounts** page.
    a. If a service account has not been created or if a service account is needed, click **Create service account**.
    b. If a service account is already available, move to the next step.

Service Accounts Page (Service Accounts Do Not Exist)

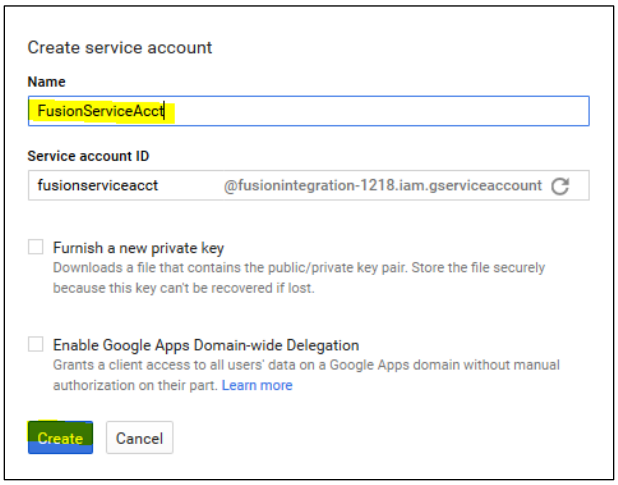


Service Accounts Page (Service Accounts Exist)



4. Click **Create service account** to open the **Create service account** form. A service account can now be created for Crestron Fusion Cloud, if needed.

Create Service Account Form

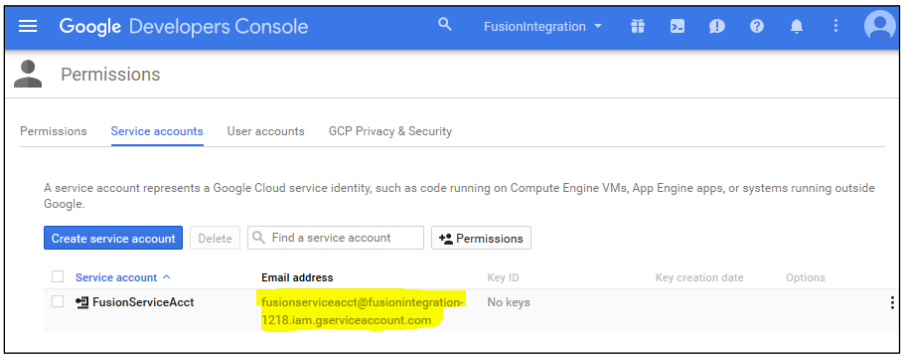


5. Enter a name for the service account and then click **Create**.

NOTE: Do not click the **Furnish a new private key** or **Enable Google Apps Domain-wide Delegation** check boxes; the functionality of these check boxes is described in the "Upload a Private Key" section which uses a different part of the Google API Console User Interface (UI).

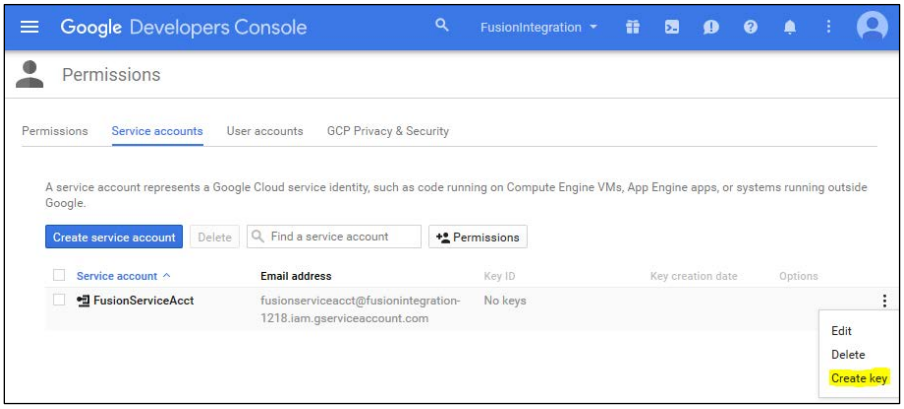
6. Return to the **Service accounts** page, and record the e-mail address of the service account that Crestron Fusion Cloud will use to access the Google Calendar API. The e-mail address is used in a later step.

Service Account Email Address



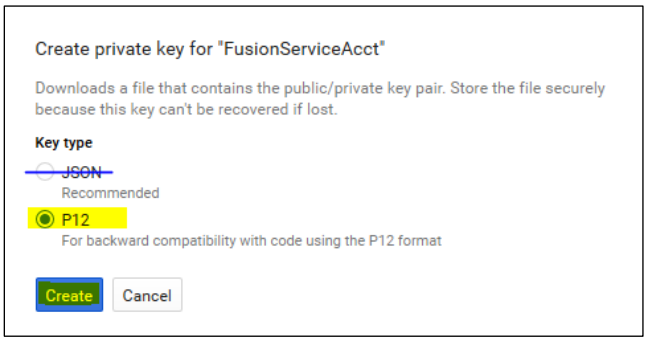
7. Click the menu icon to the right of the service account. This is the service account that Crestron Fusion Cloud will use to access the Google Calendar API.

Service Account Menu Icon



8. Click **Create key** from the drop-down list to open the **Create private key** form.

Create Private Key Form

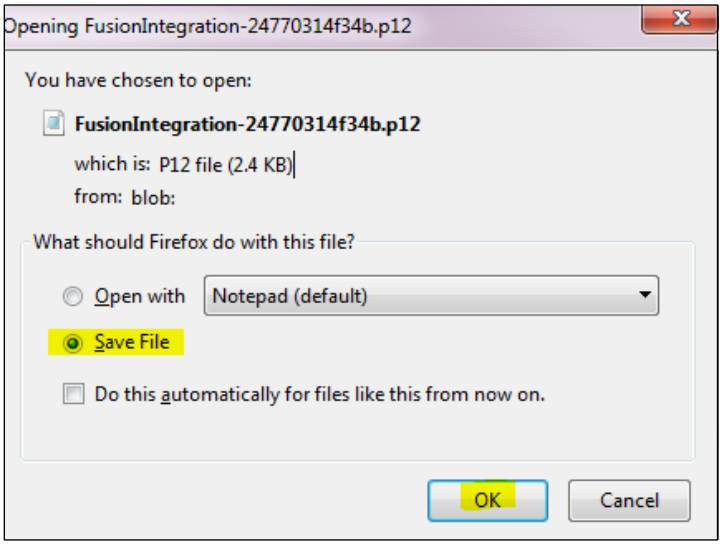


9. Click the **P12** key type.

NOTE: The **JSON** key does not work with Crestron Fusion Cloud and should not be used.

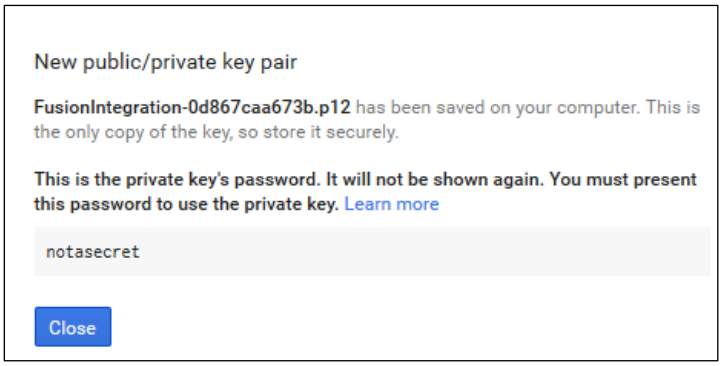
10. Click **Create** to open the file download page.

File Download Page - Save P12 Key Type



11. Click **Save File** to save the key file in a local storage folder. Note down the name of the folder for later use.
12. Click **OK** to open the key creation confirmation form.

Key Creation Confirmation Form



13. Check that the password displayed is notasecret. Crestron Fusion Cloud is already set up to use this password. Click **Close**.

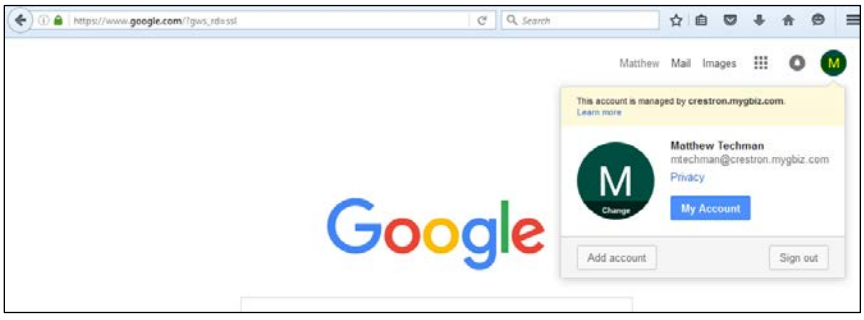
Share Room Accounts with Service Account

NOTE: Impersonation can be used (if preferred) rather than sharing accounts. Refer to "Appendix B: Using Impersonation in Google Calendar API" for more information.

1. Navigate to Google.com using a Google Chrome or Firefox browser.
2. Check if a green circled icon appears in the upper right-hand corner. If so, click the icon and check if the current account in use is the administrator account noted in the Initial Setup section.

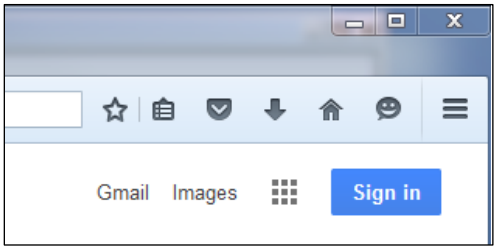
   NOTE: If it is not an administrator account, click Sign out and move to the next step. If it is an administrator account, skip the next two steps.

Google.com Sign In



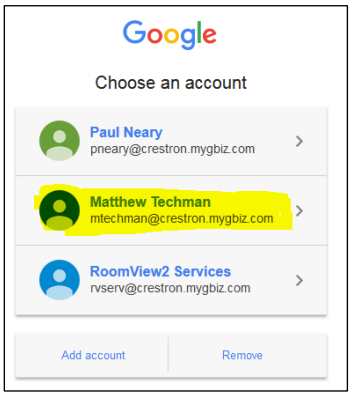
3. Sign in as an administrator by clicking Sign in. From the resulting list, select the administrator account noted in the "Initial Setup" section.

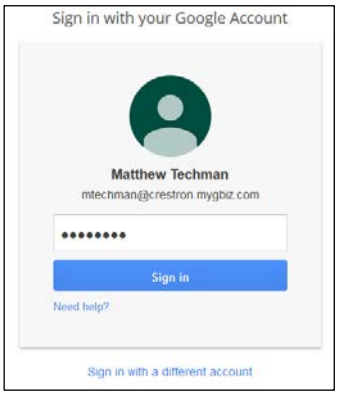
Account Sign In



4. Enter your password and click **Sign in**.

Account Sign In Screens





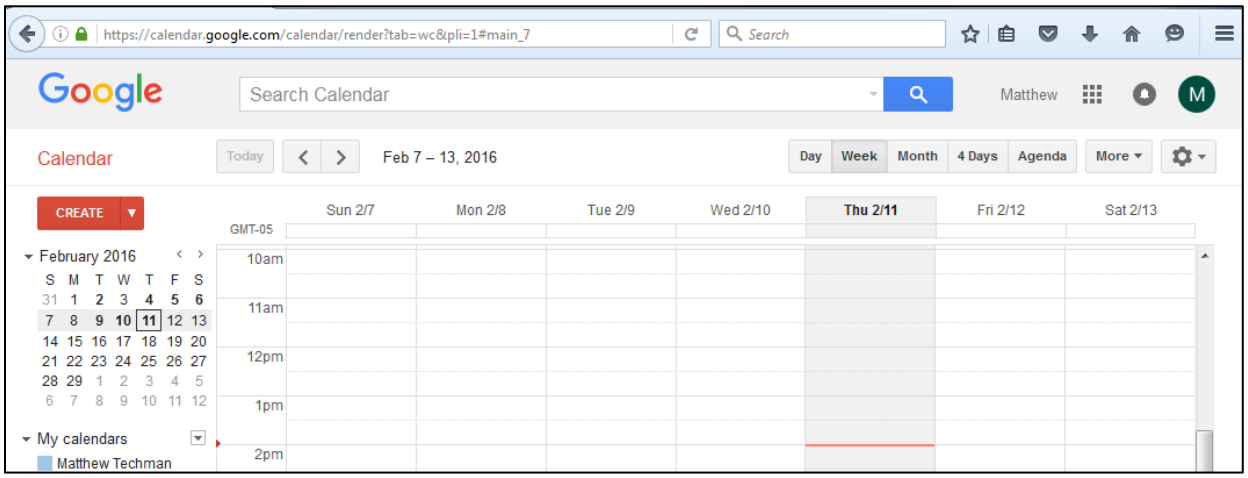
5. Click the grid icon to open the **Google Application** menu.

Grid Icon

6. Click the Calendar icon to open the Google Calendar application.

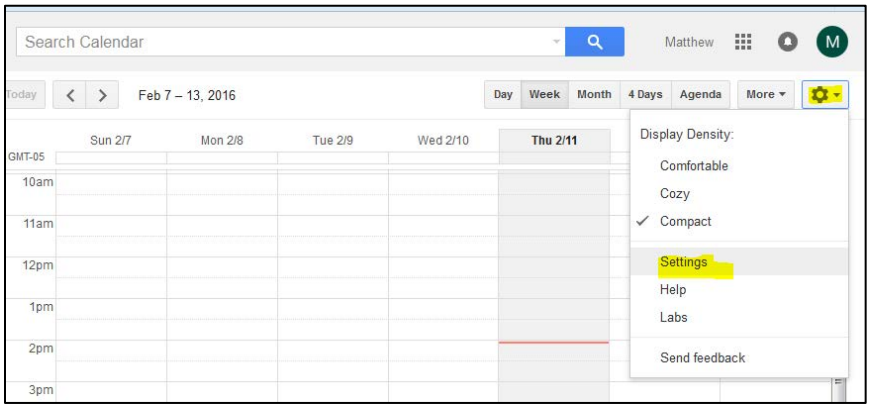
Calendar Icon

Google Calendar Application

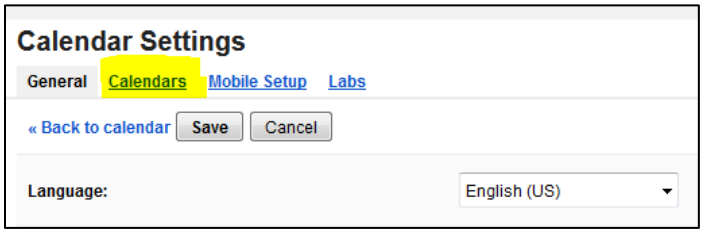


7. Click the gear icon, and then click **Settings** to open the **Calendar Settings** page.

Calendar Settings Page

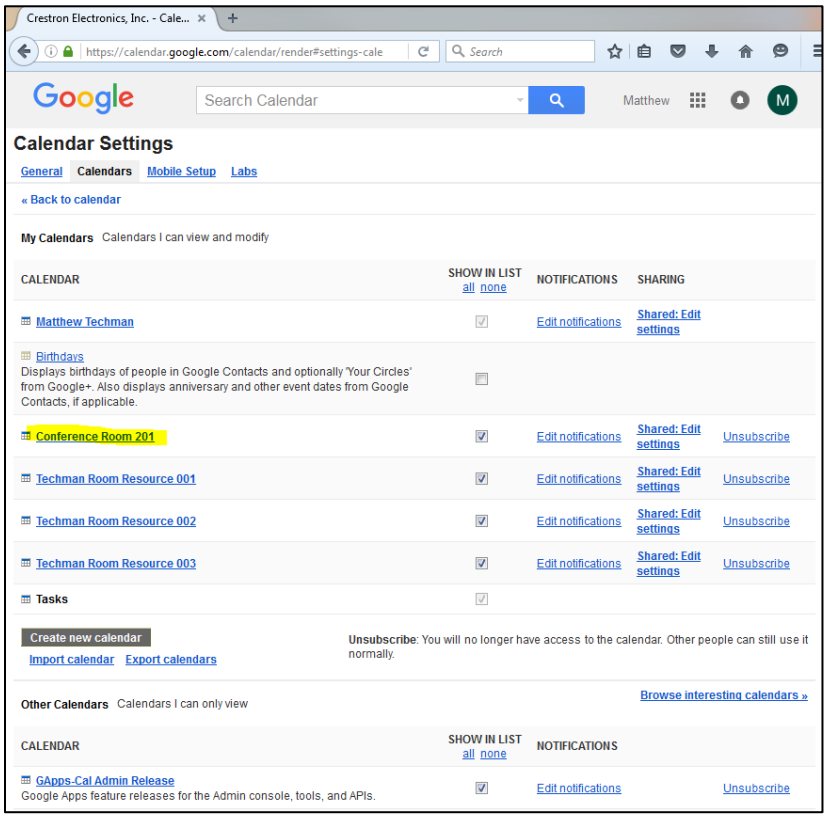


Calendar Settings Page



8. Click the **Calendars** link to view the room calendars.

Room Calendars on Calendar Settings Page



9. Review the room calendars; there should be a calendar for each physical room to be integrated with Crestron Fusion Cloud.

   If no room calendars are shown or more are needed, refer to "Appendix A: Creating Room Resources" for more information.

NOTE: Typically, room calendars are shared with the service account, as discussed in the "Set Up Security" section. However, some customers prefer to allow the service account to impersonate a user with elevated privileges. If impersonation is needed, refer to "Appendix B: Using Impersonation in Google Calendar API" and skip step 5 in that section.

10. Complete the steps below on each room calendar to be integrated with Crestron Fusion Cloud. This will share calendars with service accounts that Crestron Fusion Cloud will use to access the Google Calendar API.

    a. Click the room name link to open the **Room Details** page.

    b. Click the **Share this Calendar** link to open the sharing area.

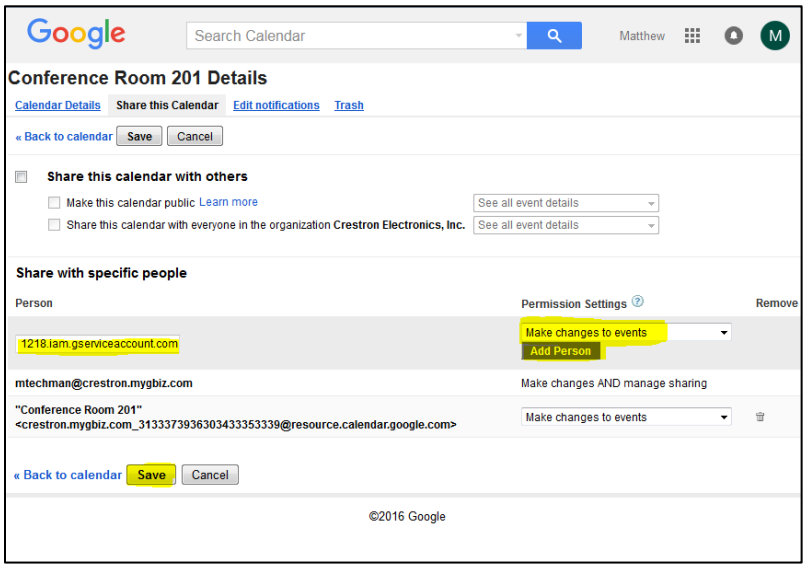
    c. Enter the service account from the **Share with specific people** section e-mail address (from the "Set Up Security" section) into the **Person** field.

    d. Click **Make changes to events** from the **Permission Settings** drop-down list.

    e. Click **Add Person**. Note down the e-mail address of the room (to be used later in this document.)

    f. Click **Save**.

Room Details Page – Room Calendar Sharing

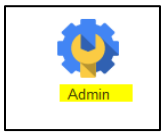


11. Click the grid icon to open the **Google Application** menu.

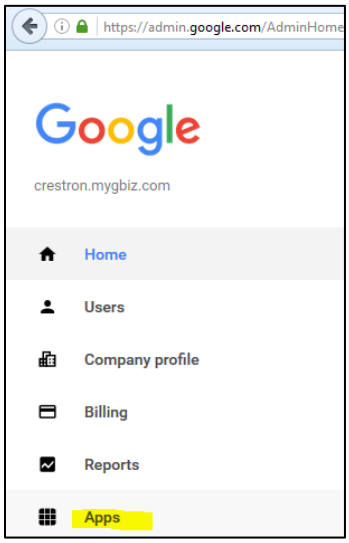
Grid Icon

12. Click the **Admin** icon to open the **Google Console** menu.

Admin Icon



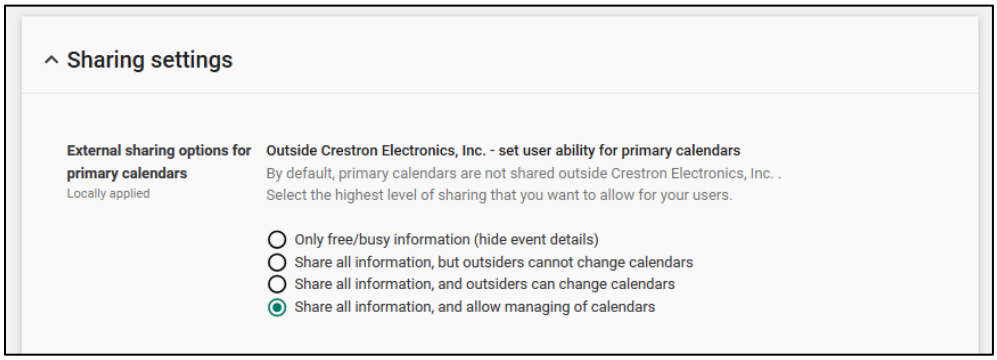
Google Console Menu



13. Click the **Apps** link, and then click **Calendar**.

14. Click **Sharing settings**, and then click **Share all information, and allow managing of calendars**.

Sharing Settings Page



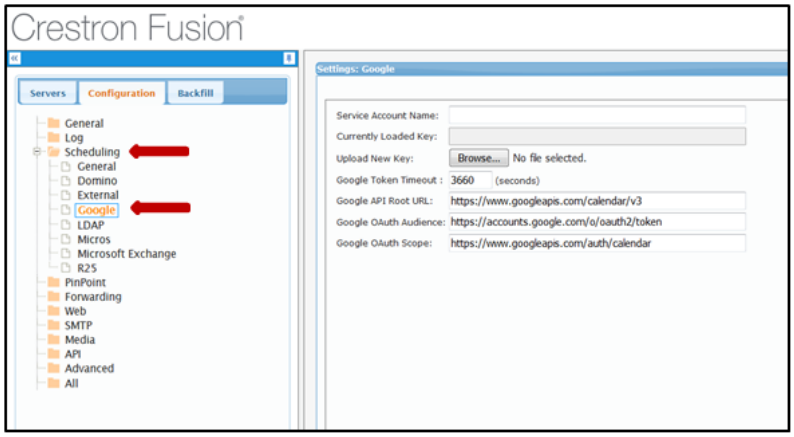
Set Up Crestron Fusion Cloud to Access the Google Calendar API

This section describes how to configure Crestron Fusion Cloud to access the Google Calendar API. The system-wide security settings will be configured using data from the previous section. This section also includes instructions on how to link a room represented by Crestron Fusion Cloud to a Google Calendar.

Upload a Private Key

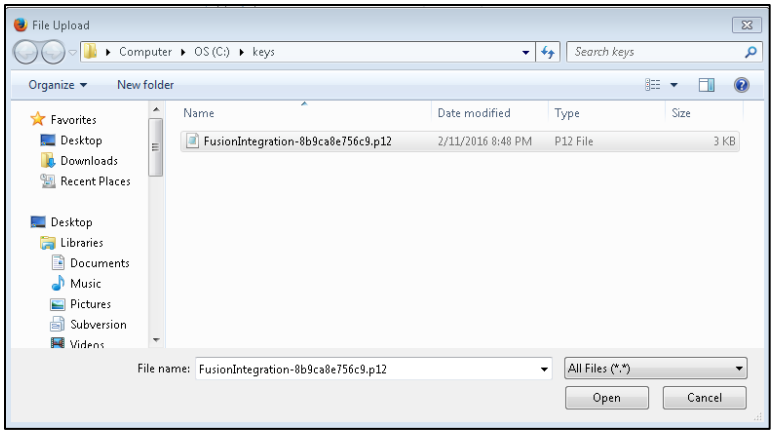
1. Navigate to the Crestron Fusion Cloud Configuration Web Client.
2. Click **Scheduling** and then click **Google** to open the **Settings: Google** form.

   Crestron Fusion Cloud Configuration Web Client – Settings: Google Form



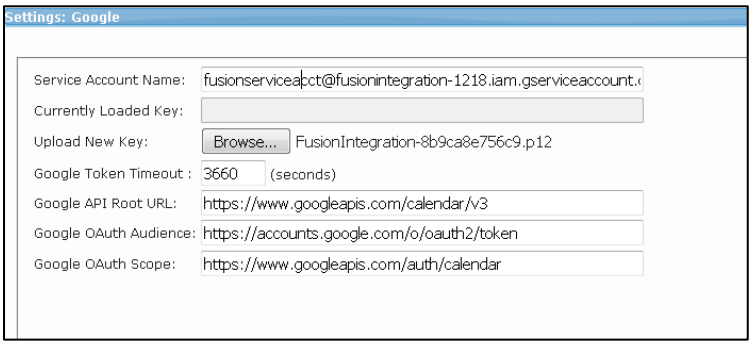
3. Click **Browse** to open the **File Upload** dialog box.

   File Upload Dialog Box with Key File



4. Navigate to the location where the key file was stored. Locate and select the private key file, and then click **Open**.
5. Enter the Service Account e-mail address entered in step 6 on page 8.
6. Click **Save**.

Settings: Google Form - Completed

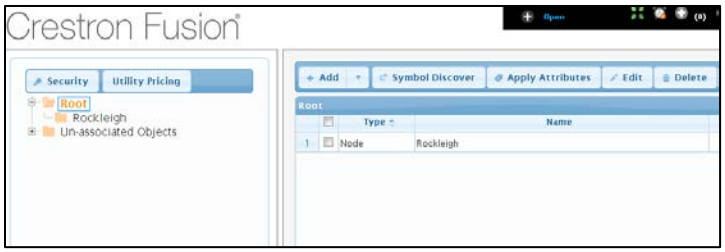


Configure Rooms in Crestron Fusion Cloud to Use Google Calendar API

1. Do the following for each room represented by a Google calendar.

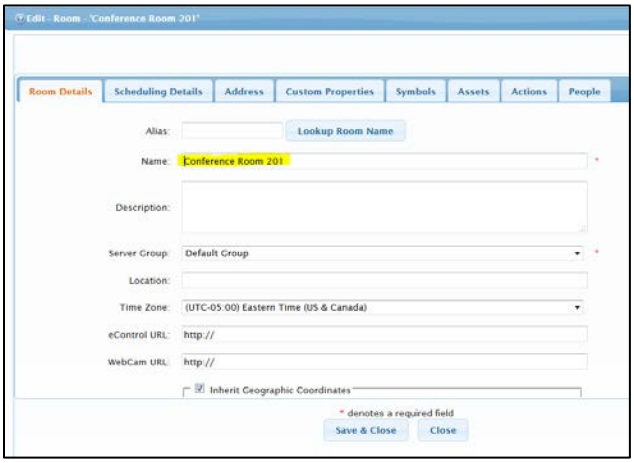
   a. Navigate to the Crestron Fusion Cloud Setup Web Client, select the node, and then add the room.

   Crestron Fusion Cloud Setup Web Client



   - Click the **Add** drop-down list (if the room has not been created), and then click **Add Room**.
   - Click the Room node if the room has already been created.
   - Complete the first page of the **Room Details** tab, if adding a new room.

   Room Details Tab



b. Click the **Scheduling Details** tab, and then select **Google** from the **Server Access** drop-down list.

Scheduling Details Tab

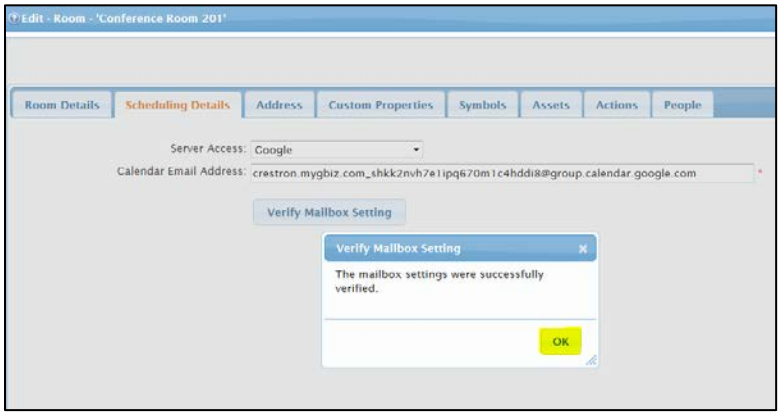
c. Enter the e-mail address of the first room entered in step 9 on page 13.

d. Click **Verify Mailbox Setting** to ensure the room is configured for proper integration with Crestron Fusion Cloud.

Verify Mailbox Setting

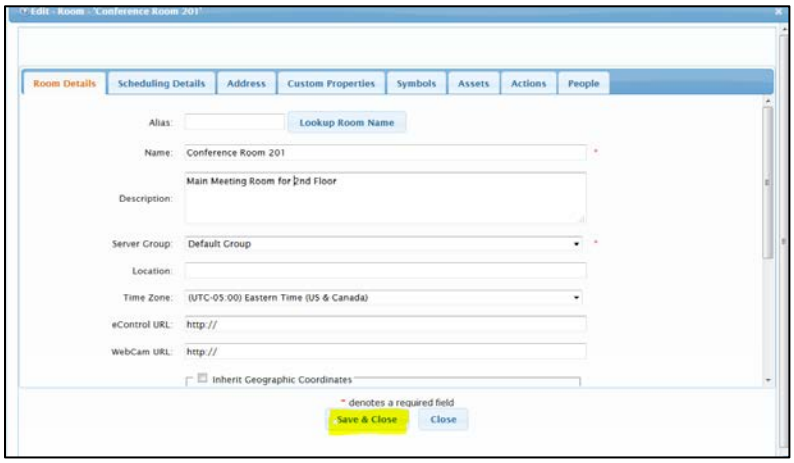
e. If the room is configured properly, the **Verify Mailbox Setting** message box displays. Click **OK**.

Verify Mailbox Setting Message Box



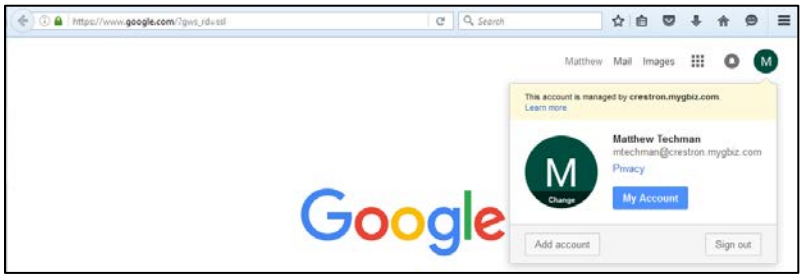
2. If creating a new room, fill in the required fields (shown with red asterisks) in the **Room Details** tab.

Room Details Tab



3. Repeat the above steps for the remaining room e-mail addresses entered in step 9 on page 13.
4. Click **Save & Close** after adding e-mail addresses for the rooms,
5. Perform a test of the synchronization between the Google and Crestron Fusion Cloud calendars as follows:
    a. Navigate to Google.com and sign in as an Administrator. Refer to the "Initial Setup" section.

    Administrator Sign In

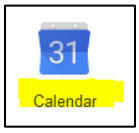
    

    b. Click the grid icon to open the **Google Application** menu.

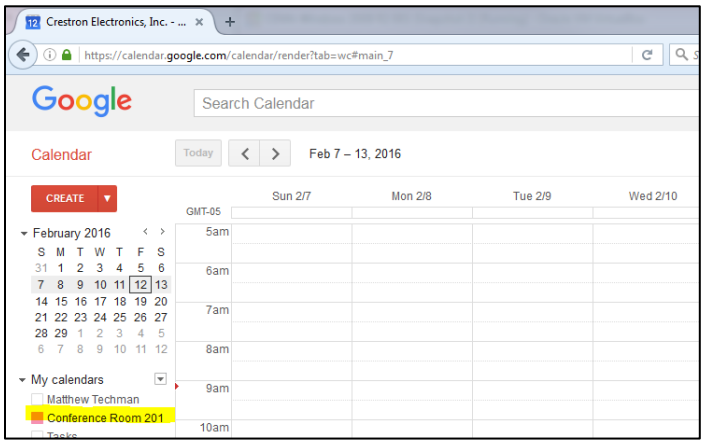
    Grid Icon

    c. Click the **Calendar** icon to open the Google Calendar page.

    Calendar Icon

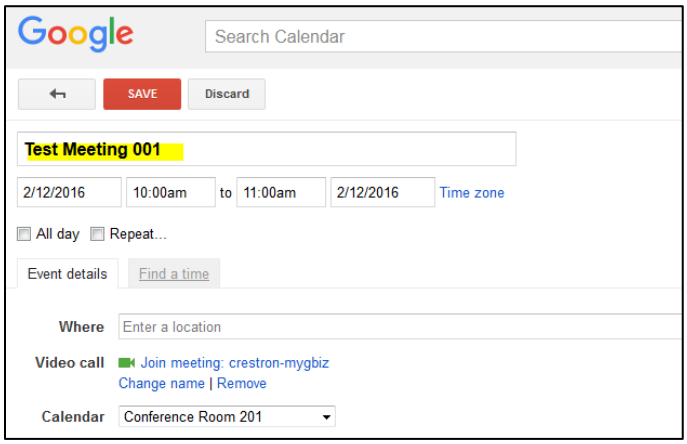
Google Calendar Page



d. Select one room created in the previous section. This will display the Room's calendar in the UI.

e. Double-click any time slot (after the current time) to open the **Add Meeting** form.

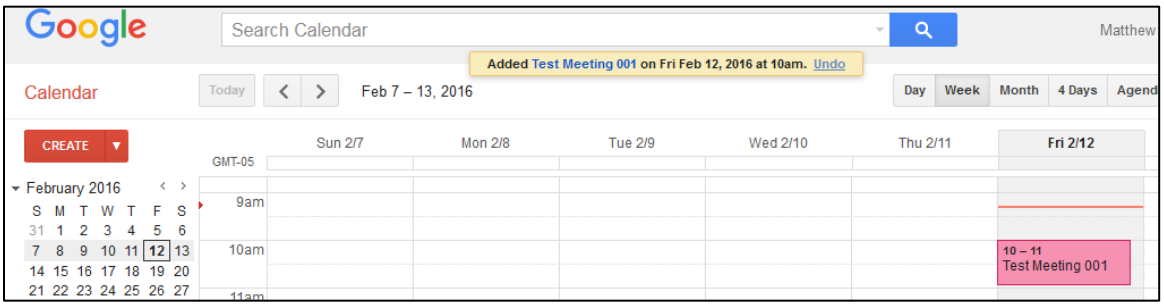
Add Meeting Form



f. Enter a title for the meeting and then click **Save**.

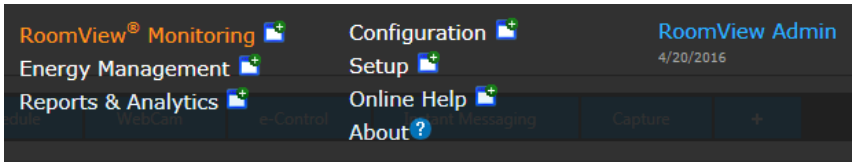
g. A message indicating the meeting was created should appear along with the meeting displayed on the room's calendar selected in step 0 above.

Booked Meeting on Google Client Calendar



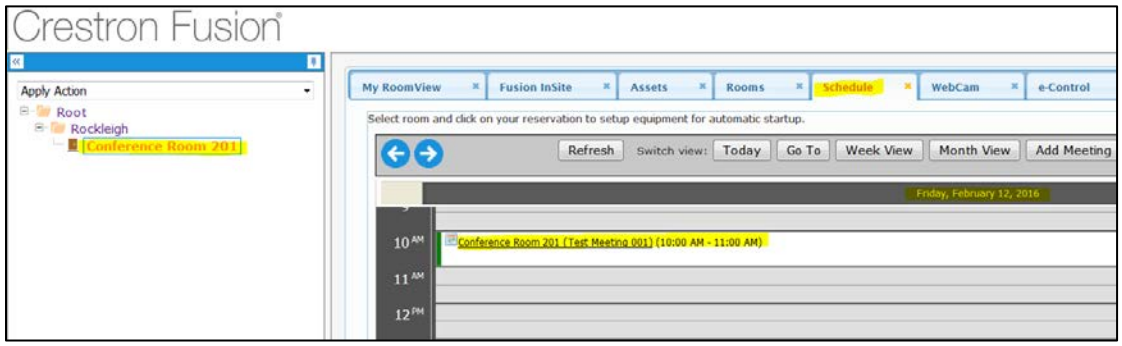
h. Open the Crestron Fusion Cloud Web Client and select the **RoomView® Monitoring** button.

RoomView® Monitoring Selection



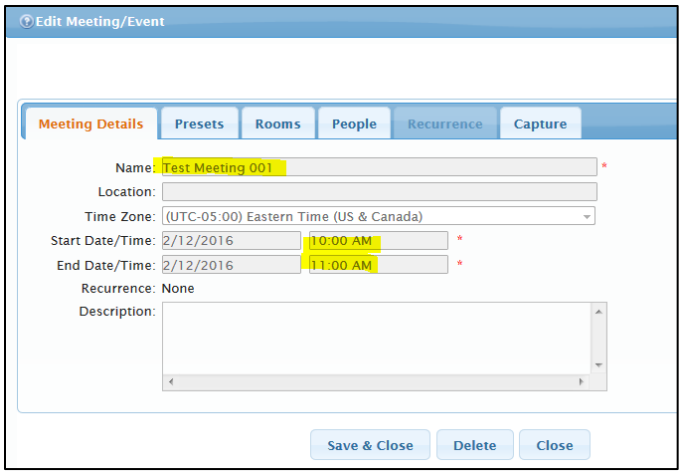
i. From the **Schedule** tab, select the room and the date the meeting is scheduled. The meeting created in step f above should appear on the Crestron Fusion Cloud calendar.

Crestron Fusion Cloud Calendar Showing Meeting



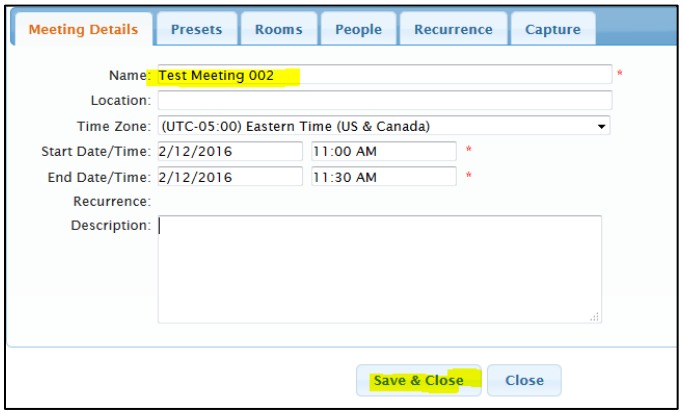
j. Double-click the meeting and verify the meeting times (**Start Date/Time** and **End Date/Time**) and name.

Verify Meeting Details



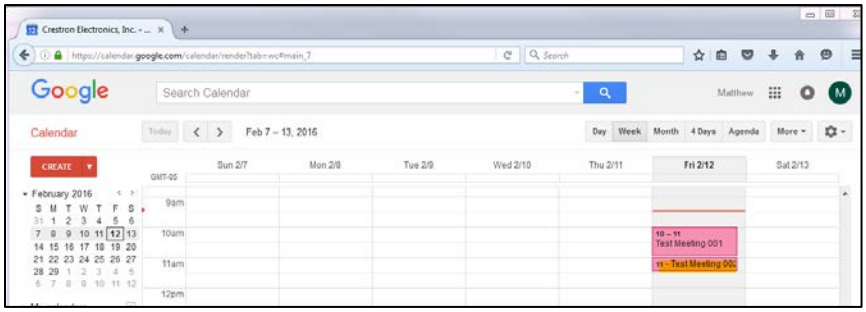
k. Create a meeting in Crestron Fusion Cloud after the meeting is set by the Google Calendar.

Create New Meeting



l. Navigate back to the Google Calendar shown in step g above. The meeting created in Crestron Fusion Cloud should appear on the Google Calendar below the meeting created in step d above.

Google Calendar Showing Meeting Created in Crestron Fusion Cloud

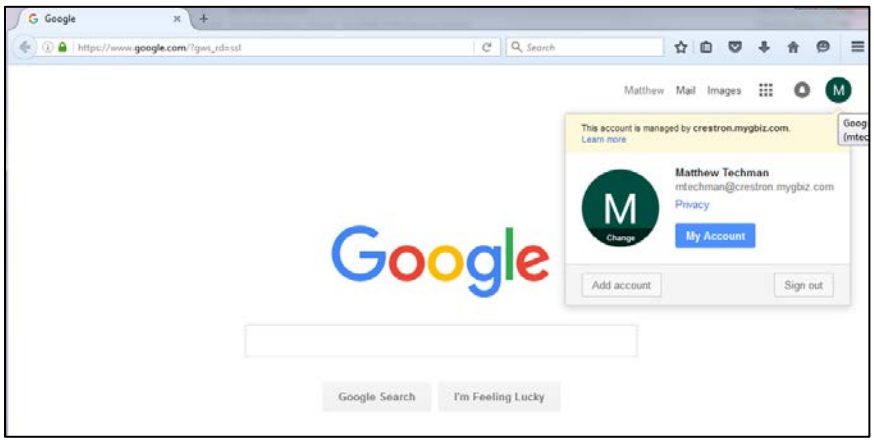


Appendix A: Creating Room Resources

This section provides information on how to create room resources in Crestron Fusion Cloud.

1. Navigate to Google.com and sign in as an Administrator.

   Google Sign In

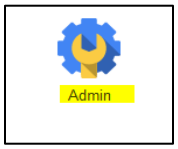
   

2. Click the grid icon to open the **Google Application** menu.

   Grid Icon

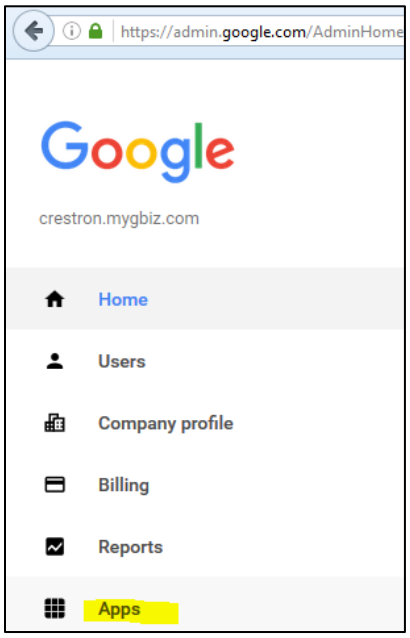
3. Click the **Admin** icon to open the **Google Console** menu.

   Admin Icon

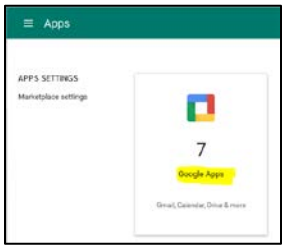
4. Click the **Admin** icon to open the **Google Console** menu.

Google Console Menu



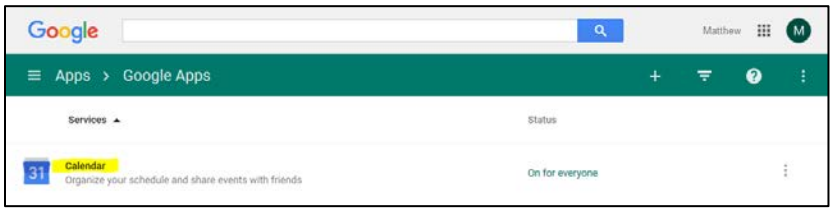
5. Click **Apps** to open the **Google Apps**™ page.

Google Apps Page

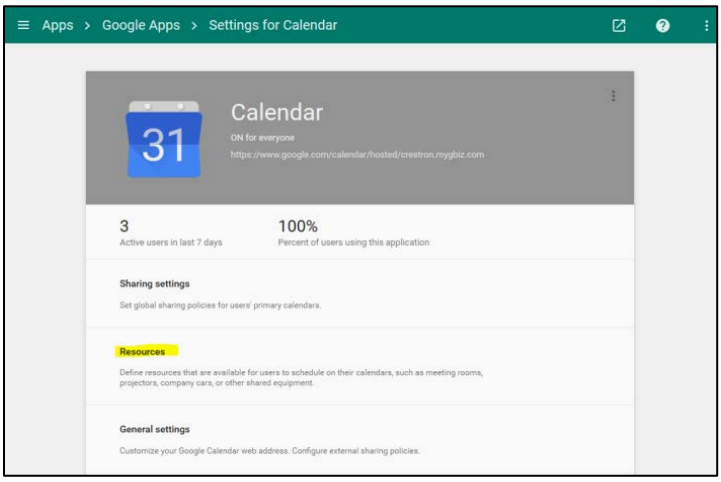


6. Click **Google Apps**.
7. From the next page, click the **Calendar** link to open the **Settings for Calendar** page.

Calendar Link

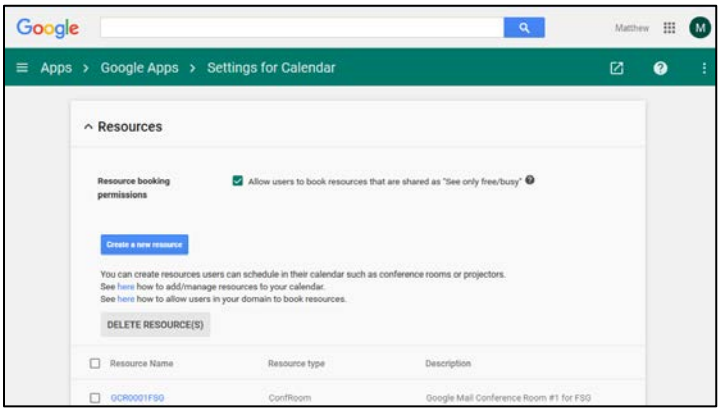


Settings for Calendar Page



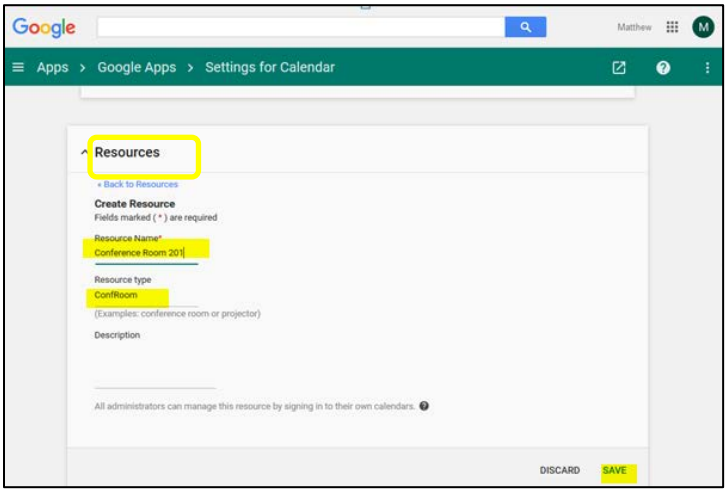
8. Click **Resources** to open the **Resources** page.

Resources Page



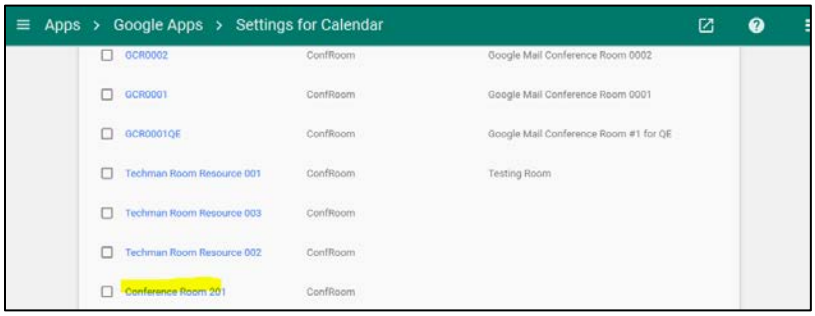
9. Click **Create a new resource** to create a new room resource.

Resources Page - Configuring a Room Resource



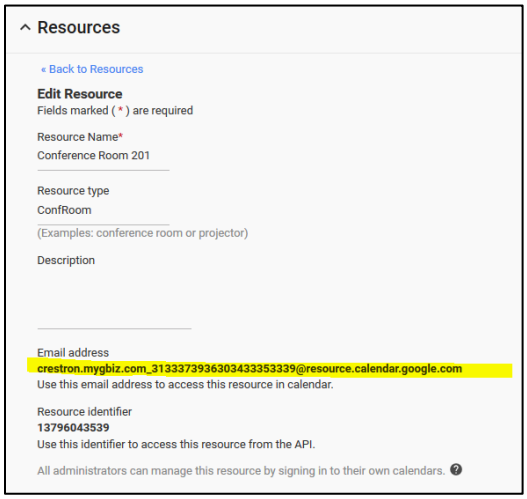
10. From the **Create Resource** section, enter a **Resource Name** and **Resource type** (room name and type.) Typically the room type is ConfRoom, but any name will work. If the configuration is successful, the room is listed on the **Settings for Calendar** page.

Settings for Calendar Page – Room Resource List



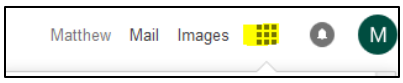
11. Click the newly created room resource to display the room details (including the e-mail address.)

Room Details Displayed



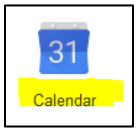
12. From the **Edit Resource** section, note the e-mail address of the room resource. This will be used to create a calendar.
13. At the top of the **Resources** page, click the grid icon.

Grid Icon



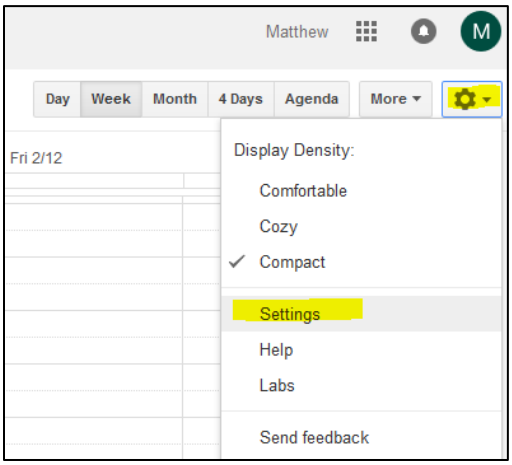
14. Click the **Calendar** icon.

Calendar Icon

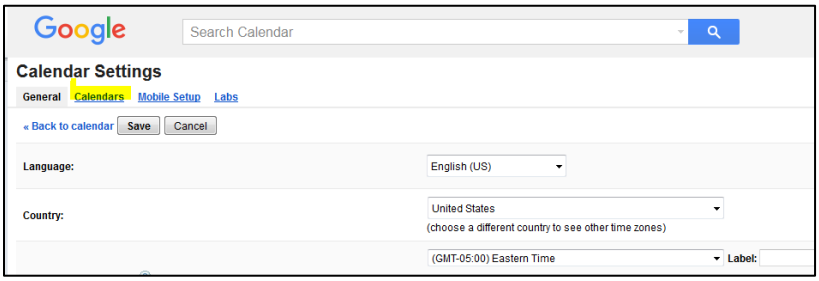


15. Click the gear icon and then click **Settings** to open the **Calendar Settings** page.

Gear Icon and Google Calendar Settings Link

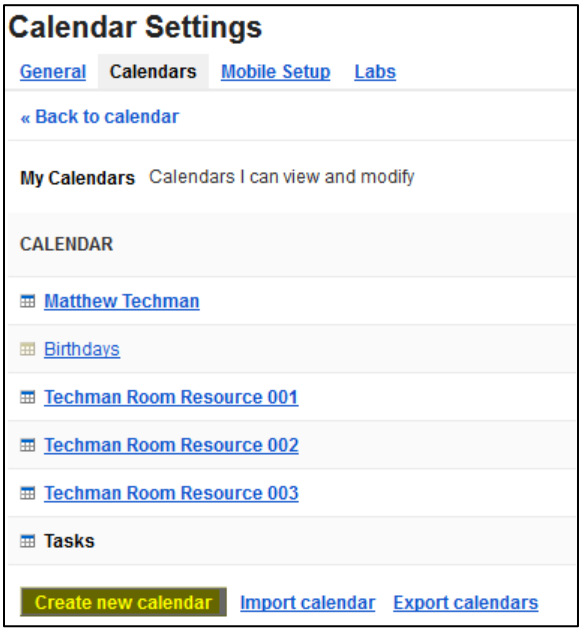


Calendar Settings Page



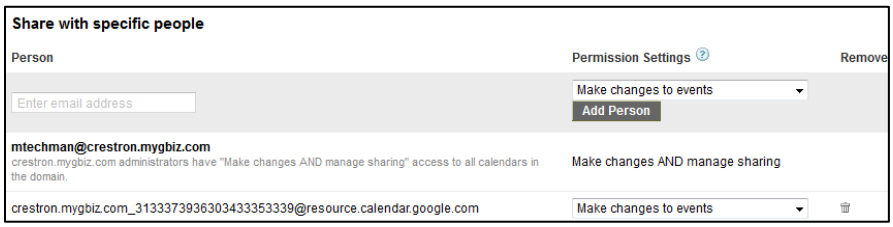
16. Click the **Calendars** tab and then click **Create new calendar**.

Create New Calendar



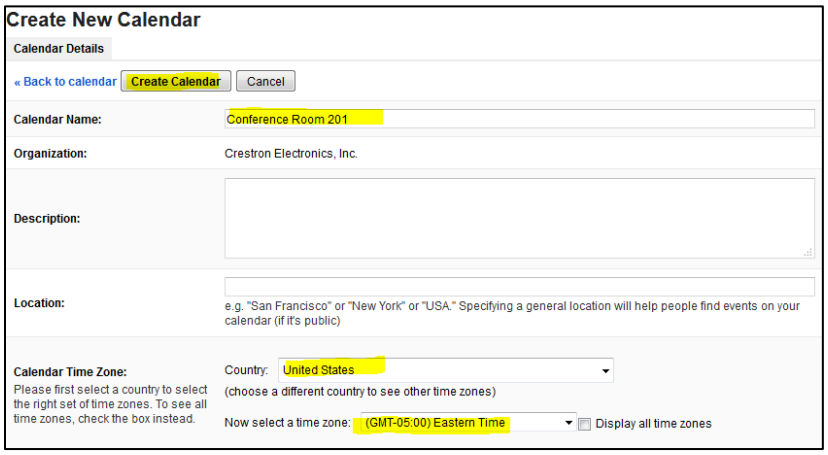
17. Enter the e-mail address (noted above) into the **Person** field, and then select **Make changes to events** from the **Permission Settings** drop-down list.
18. Click **Add Person**.

Calendar Sharing Detail Form



19. Enter the name of the room resource into the **Calendar Name** field. If needed, set the time zone and click **Create Calendar**.

Create New Calendar Form

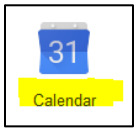


20. Click the grid icon to confirm successful creation of the room resource calendar.

Grid Icon

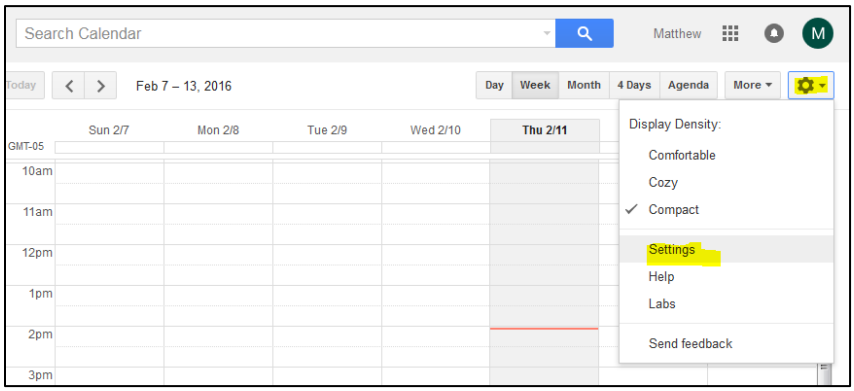
21. Click the **Calendar** icon to open the Google Calendar application.

Calendar Icon

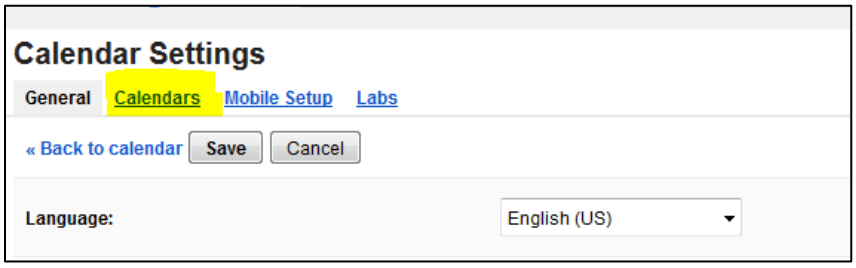


22. Click the gear icon and then click **Settings** to open the **Calendar Settings** page.

Calendar Settings Page

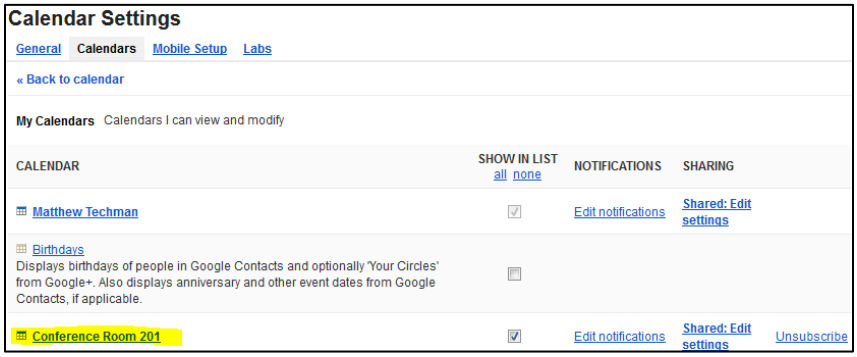


Calendar Settings Detail Page



23. Click the **Calendars** link to open the **Calendar Settings** room list.

Calendar Settings Room List



24. Locate the newly created calendar for the room resource in the list.

NOTE: If the room is listed, the room resource creation was successful. If the room is not listed, review the steps in this appendix.

Appendix B: Using Impersonation in Google Calendar API

Customers may not prefer the opt-in model (described in step 9 on page 13) where the room shares the calendar with the service account. Instead, a second configuration option is available that will allow the service account (used by Crestron Fusion Cloud) to access the Google Calendar API to use the identity of another account.

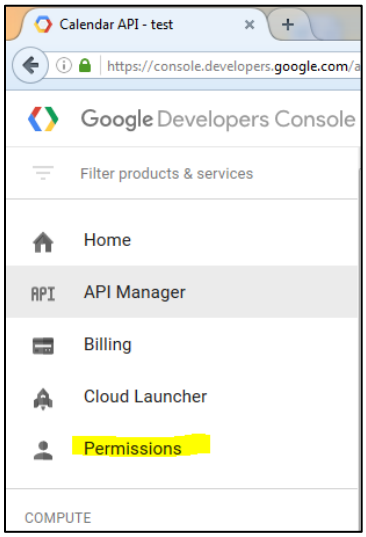
Typically, the account that the service account impersonates has elevated privileges. With elevated privileges, the account being impersonated can read and write to the room calendar that is being shared.

NOTE: For impersonation, it is not necessary to complete the "Share Room Accounts with Service Account" section and should be avoided.

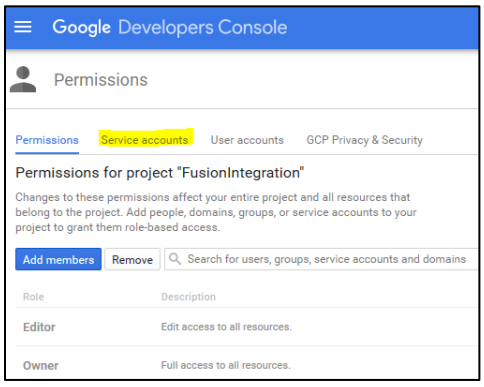
To configure impersonation, do the following:

1. Open the **Google API Console** menu using the process described in the "Activate the Google Calendar API for the Domain" section.
2. Click the **Permissions** link to open the **Permissions** page. The user can access the service accounts Crestron Fusion Cloud will use to access the Google Calendar API.

Permissions Link



Permissions Page

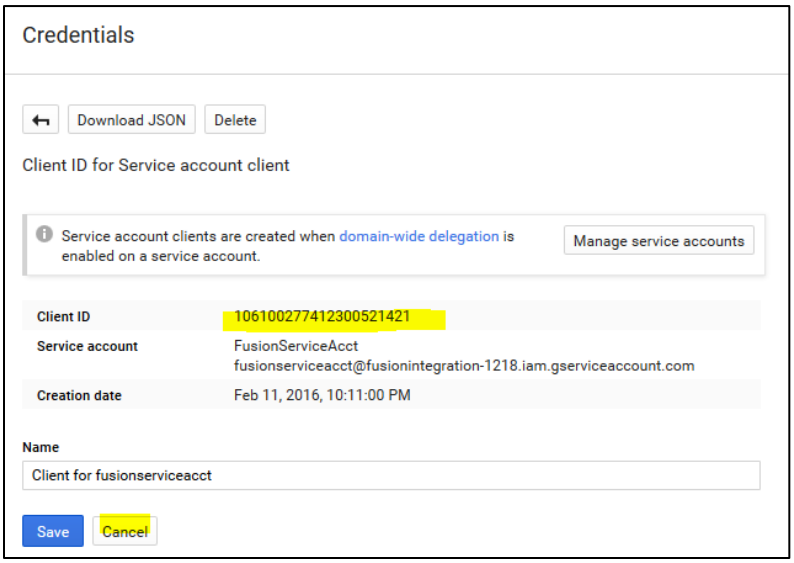


3. Click the **Service accounts** link to display the services accounts list.

Service Accounts List

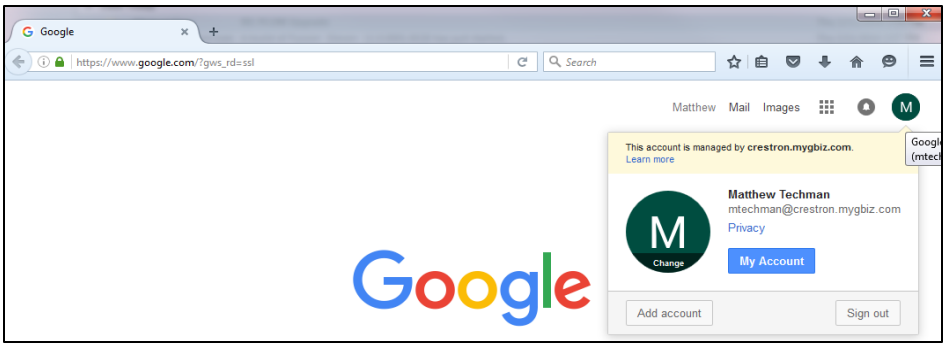
4. Click the **View Client ID** link to open the **Credentials** form. The **View Client ID** contains the service account that will use impersonation.

Credentials Form



5. Note the client ID for use in a later step, and then click **Cancel**.
6. Navigate to Google.com and sign in as Administrator.

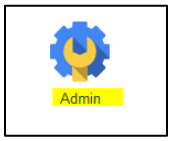
Google API Console - Sign in Page



7. Click the grid icon, and then click the **Admin** icon.

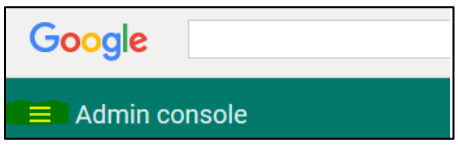
Grid Icon

Admin Icon



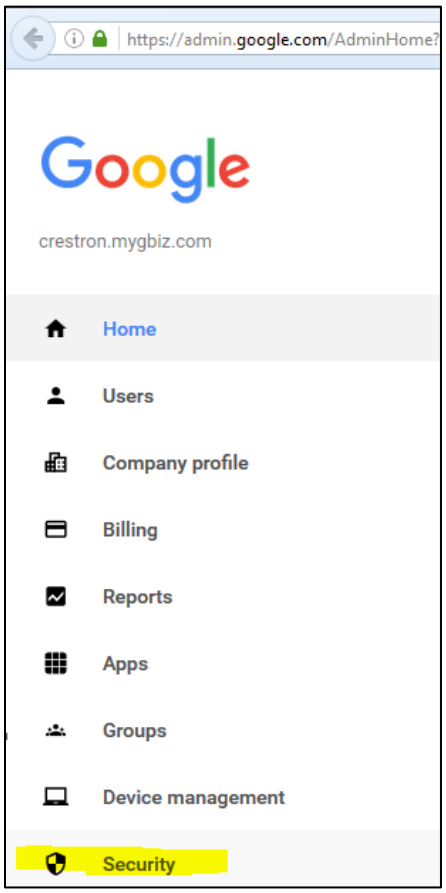
8. Click the menu icon to open the **Admin console** menu.

Admin Console Menu

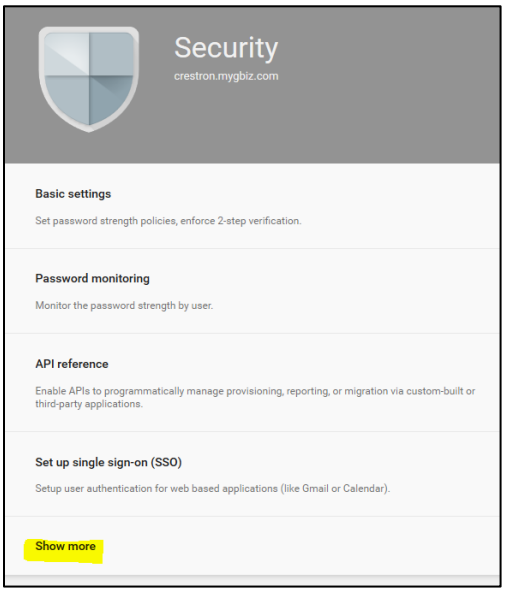


9. Click the **Security** link to open the **Security** form.

Security Link

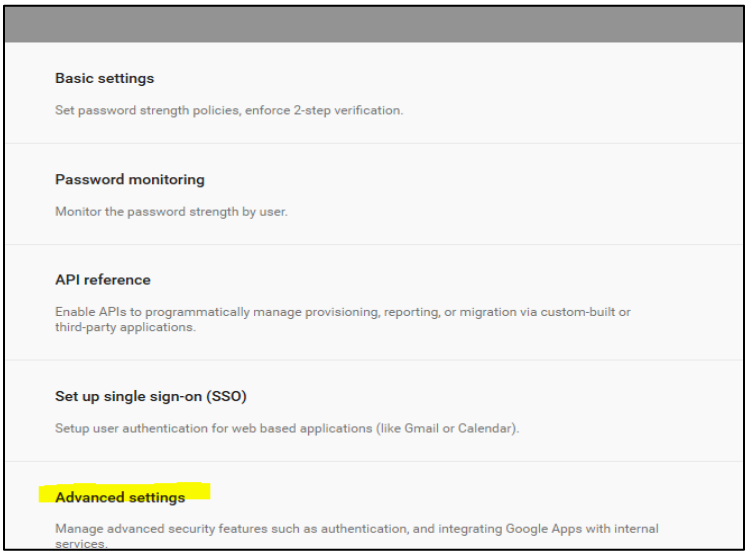


Security Form



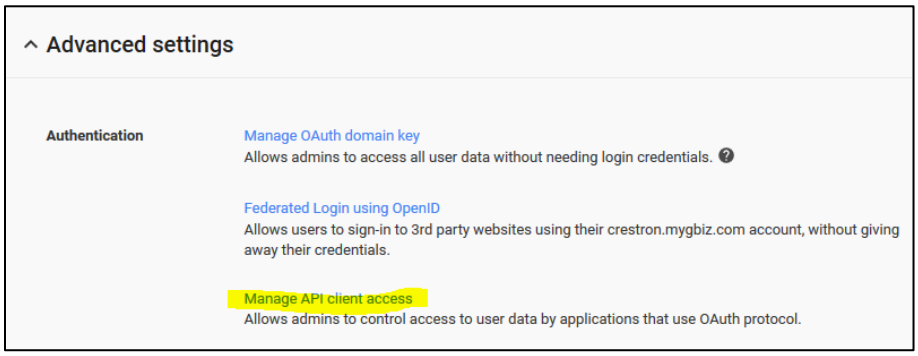
10. Click the **Show more** link, and then click the **Advanced settings** link.

Advanced Settings Link

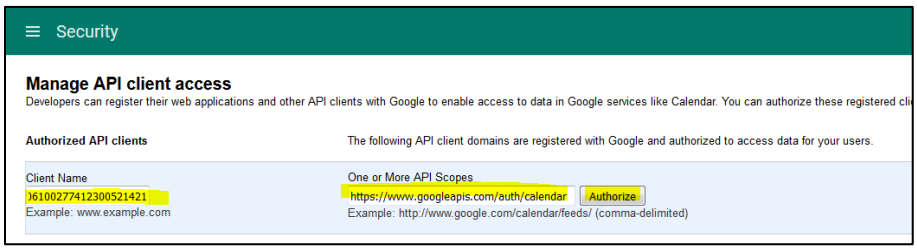


11. Click the **Manage API client access** link to open the **Manage API client access** page.

Manage API Client Access Link



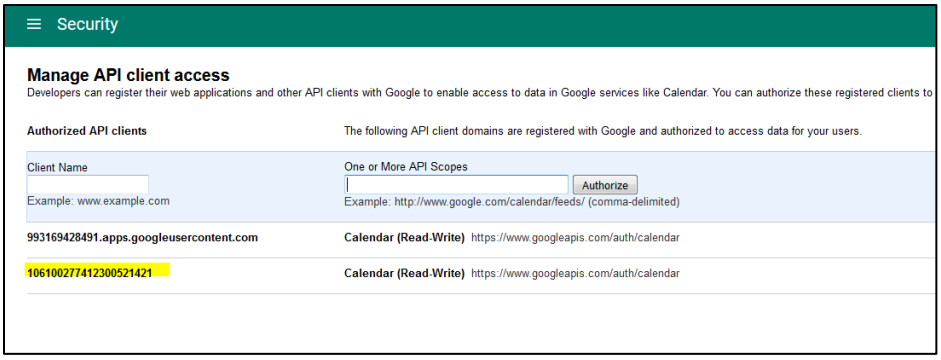
Manage API Client Access Page



12. Enter the following:
    - **Client Name:** Enter the Service Account Name from the **Credentials** form.
    - **One or More API Scopes:** Enter the following URL: https://www.googleapis.com/auth/calendar.
13. Click **Authorize**.
14. Confirm that the service account was added to the list.

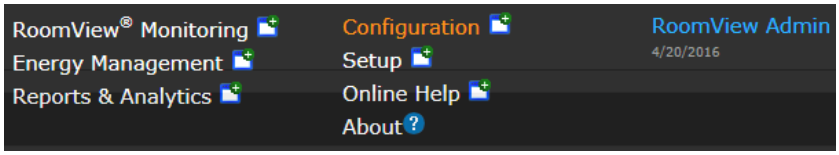
NOTE: At this point, the service account is authorized to access any account.

Manage API Client Access Page showing Service Accounts

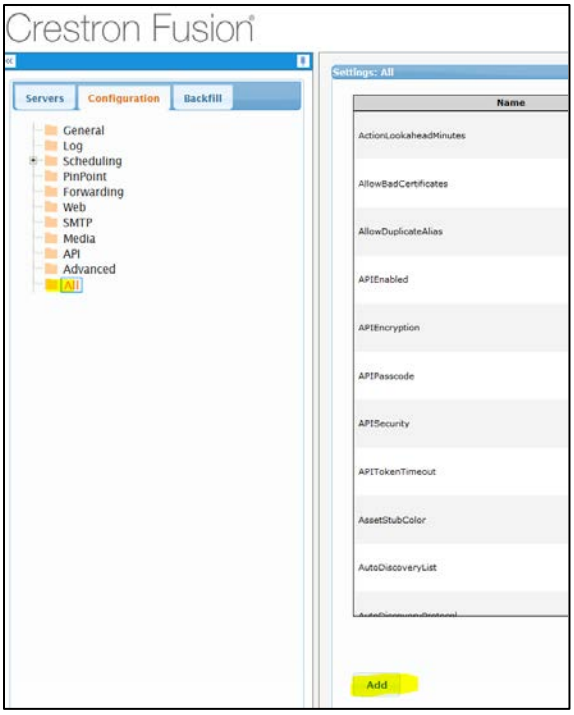


15. Open the Crestron Fusion Cloud Web Client and select **Configuration** to open the **Configuration** page.

Configuration Selection

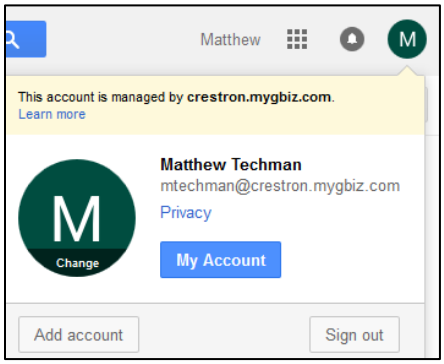


Configuration Page



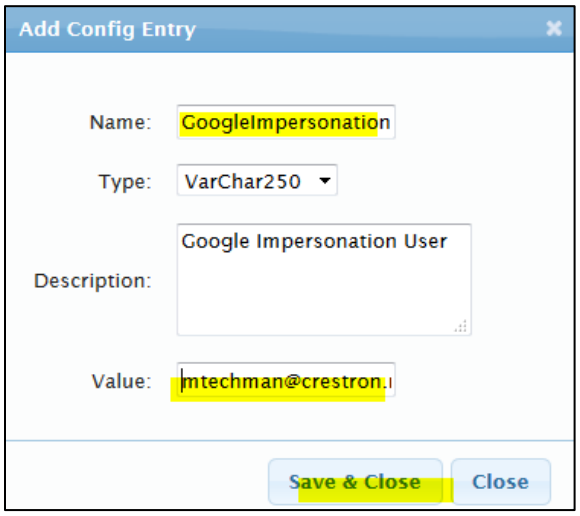
16. Click **All** from the tree menu and then click **Add** to open the **Add Config Entry** window.
17. Determine the user account to be used for impersonation. Typically the admin account is used. However, an account with elevated privileges can be used.
18. Obtain the e-mail for this account from the **Google API Sign In** page.

Google API Sign In Page



19. In the **Add Config Entry** page, enter the following:
    - **Name**: GoogleImpersonationUser
    - **Type**: VarChar250
    - **Description**: Google Impersonation User
    - **Value**: E-mail address (from step 18 above)

Add Config Entry Page



20. Click **Save & Close**.

    The service account is now set to impersonate the account with the elevated privileges noted above. Run the tests at the end of "Setting Up Crestron Fusion Cloud to Access the Google Calendar API" section to confirm the impersonation has been configured properly.

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Setup & Configuration – DOC. 7886C
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09.16
Specifications subject to
change without notice.