## Contents

### Chapter 1 / About This Documentation
- Other Resources ......................................................... 1

### Chapter 2 / Learn the Basics
- Add the SAS Tag to Your Site ........................................ 3
- Set Up a Domain ......................................................... 3
- Identify Users .......................................................... 5
- Add and Manage Search Tags ........................................ 7
- About GDPR Support in SAS Customer Intelligence 360 .... 9

### Chapter 3 / Discovering Audience Behavior
- Define Traffic Sources .................................................. 11
- Capture Page URLs ..................................................... 17
- Define Advanced Collection Rules .................................. 19
- View Reports .............................................................. 20
- Create and Manage Access Agents .................................. 23
- Use the SAS 360 Discover Download API ....................... 28

### Chapter 4 / Planning Marketing Strategy
- Plan Your Marketing Strategy ......................................... 31
- Create a Plan ............................................................. 32
- Allocate Budgets and Track Expenses ............................. 33
- View the Plans Calendar ............................................... 35
- Customize Your Marketing Hierarchy ............................... 36
- Integrate with Other Items in SAS Customer Intelligence 360 37
- Import Planning Information ......................................... 38
- Export Planning Information ......................................... 38

### Chapter 5 / Using Workflows
- Creating Workflows ..................................................... 39
- Working with Your Workflow Tasks ................................. 41
- Working with Your Workflows ....................................... 43
- View the Workflows Calendar ....................................... 45

### Chapter 6 / Creating Content
- Work with Assets ....................................................... 49
- Upload and Update Multiple Assets at Once ..................... 52
- Share Assets ............................................................. 53
- Monitor Assets .......................................................... 55
- Work with Assets Folders ............................................. 55
- Work with Creatives .................................................... 57
- Work with Messages .................................................... 58

### Chapter 7 / Delivering Content
- Create, Update, or Delete Tasks ..................................... 59
- Work with Spots ......................................................... 60
- Create and Personalize Email Content ............................. 61
- Deliver Emails .......................................................... 61
- Deliver Content to a Mobile Spot ................................... 72
- Deliver Mobile In-App Messages .................................... 77
## Contents

Deliver Mobile Push Notifications .......................................................... 80
Deliver Web Content .................................................................................. 83

### Chapter 8 / Targeting Your Audience .................................................. 91
- Track User Interaction with Events and Data Views ............................. 91
- Create a Segment .................................................................................... 94
- Discover a Segment ................................................................................ 100
- Profile Segments .................................................................................... 100
- Add a Target Audience to Your Task .................................................... 100
- Refine Task Targeting ............................................................................ 101

### Chapter 9 / Understanding Customer Journeys .................................. 103
- Create an Activity .................................................................................... 103
- Use Events to Guide Customers Through an Activity ......................... 103
- Create New Paths Based on Customer Behavior .................................. 104
- View Tasks from the Activities Page ..................................................... 104
- Attributing Credit to Touchpoints .......................................................... 105

### Chapter 10 / Testing ............................................................................ 107
- Creating an A/B Test Task ...................................................................... 107
- Test Activity Paths .................................................................................. 111

### Chapter 11 / Programming Interfaces ................................................ 113
- Import a Data Descriptor through the REST API .................................. 113
- Import Customer Data ............................................................................ 116
- Upload Data Through the REST API ..................................................... 116
- Use the SAS 360 Discover Download API ............................................ 119
- Set Up Mobile Applications ................................................................... 122
About This Documentation

Other Resources

The documentation included in Tutorials and Examples highlights some of the features of SAS Customer Intelligence 360. For more information about these tasks, or to access all of our documentation, see SAS Customer Intelligence 360 Documentation.
Learn the Basics

Add the SAS Tag to Your Site ........................................................................................................... 3
Set Up a Domain ............................................................................................................................... 3
   About Domains .............................................................................................................................. 3
   Define a Domain ............................................................................................................................. 4
   Activate or Deactivate a Domain ................................................................................................... 4
   Manage Unapproved Domains ..................................................................................................... 5
Identify Users .................................................................................................................................... 5
Add and Manage Search Tags ............................................................................................................ 7
   About Tags ...................................................................................................................................... 7
   Global Tag Management ................................................................................................................ 8
   Manage Tags on an Item .................................................................................................................. 8
About GDPR Support in SAS Customer Intelligence 360 ................................................................. 9

Add the SAS Tag to Your Site

See the video here: SAS Customer Intelligence 360 - Website Tagging.

Set Up a Domain

This tutorial for SAS Customer Intelligence 360 explains how to define and manage domains that implement the SAS tag.

About Domains

Domains are classified in two primary categories: approved (active or inactive) and unapproved. Data collection depends on which category a domain is included in.

Approved

- Domains that you explicitly defined (or approved from the unapproved list). These are domains that you know traffic is going to come from.
  - Active domains are approved domains that you want to collect data for.
  - Inactive domains are approved domains that you do not want to collect data for. Possible reasons are because you want resources for a rush on another domain or you want to suspend collection from that domain.
Define a Domain

After your site includes the SAS tag and is ready to collect data, you need to define the domain of the site to monitor. When you define a domain, any data that is collected from that domain is associated with the definition that you provided.

1. From the navigation bar, click **General Settings** and select **Site Configuration ➔ Domains**.

2. Click and complete the fields on the **Domain** page.

   On the **Domain** page, complete these actions:
   - activate or deactivate data collection.
   - specify a default path for elements in that domain.
   - create rules to exclude data collection from certain elements. You can use keywords or regular expressions in this field.

   Here is an example of values that you can use to define a domain:

   **Table 2.1 Domain Definition**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain</td>
<td><a href="http://www.mysite.com">www.mysite.com</a></td>
</tr>
<tr>
<td>Note:</td>
<td>Do not include a protocol (for example, http://), path (for example, mysite.com/some_path), or port number (for example, <a href="http://www.mysite.com:7556">www.mysite.com:7556</a>) in the <strong>Domain</strong> field.</td>
</tr>
<tr>
<td>Default URL</td>
<td><a href="https://www.mysite.com/homepage#lnk=gnavweeklyad">https://www.mysite.com/homepage#lnk=gnavweeklyad</a></td>
</tr>
<tr>
<td>Data Collection Status</td>
<td>Active</td>
</tr>
</tbody>
</table>

   Here is an example of an exclusion rule that you can define that excludes any "admin" pages from being tracked:

   **Table 2.2 Exclusion Rule for a Domain**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>URL path</td>
<td>Contains admin</td>
</tr>
</tbody>
</table>

3. **(Optional)** Set the domain as the default in the **Approved Domains** list. When you set a domain as the default, that domain is used to automatically populate the domain fields for configuration rules for other data collection settings.

Activate or Deactivate a Domain

You can suspend data collection for one or more sites if you want SAS Customer Intelligence 360 to stop monitoring it. For example, a site might be offline for a few days for maintenance and you no longer need to use
resources to monitor it. In another case, you might have a promotion for one site that generates heavy customer traffic, and you want to deactivate other domains and focus data collection and processing on that site.

To suspend data collection for a domain that you defined:

1. Select a domain from the Approved Domains list.
2. Set the status to Inactive on the Edit Domain page.

To activate, deactivate, or delete multiple domains at the same time:

1. Click Select on the Approved Domains list.
2. Select one or more domains in the list, or select the checkbox at the top of the list to select all domains.
3. Click Activate, Deactivate, or , depending on the action that you want to take.

Manage Unapproved Domains

If you implement a site with a SAS tag without defining a domain for the site, the data is collected in the Unapproved Domains section of the Manage Domains page.

To approve a domain that is not defined:

1. Select a domain from the Unapproved Domains list.
2. Click Approve.

To delete entries from the list of unapproved domains:

1. Click Select in the Unapproved Domains table.
2. Select one or more domains.
3. Click .

Identify Users

SAS Customer Intelligence 360 has the ability to collect data for both anonymous users and users with identifiable characteristics. These users can be identified through forms or by page view events. When users enter information that is recognized, you can map their interactions to their user profiles. You must republish data collection settings after you create, edit, delete, or change the priority of an identity definition.

1. From the navigation bar, click General Settings and select Classification ⇒ User Identities.
2. Click .
3. Select the event type.
   - Select Click if you want to monitor a page element when it is clicked. The page element that a user clicks is known as the click target.
   - Select Form Submit if you want to specify form elements on a page to monitor.
   - Select Page View when you want to specify a specific page or pages that match a pattern that you define.
**Note:** The Advanced Event option is no longer available. Existing advanced events still generate data for SAS 360 Discover, but they cannot be used in other licenses of SAS Customer Intelligence 360.

4 Select the page on your site to watch for this event.

**CAUTION!** Define only one identity event for a page on a site. When more than one identity event exists for the same page on a site, there is no way to ensure which event is triggered. Also, be sure your site’s pages follow the guidelines for preparing your site.

- For a click event, navigate to the page that contains the click target. From the navigation bar, change the radio button to **Select** (from **Navigate**).
  - Select the click target to highlight it. You can change this element later on the **Target Location** tab.
- For a form submit event, navigate to the page that contains the form. From the navigation bar, change the radio button to **Select** (from **Navigate**).
  - Select the form element to highlight it. You can change this page or form element later on the **Form Location** tab.
- For page view events, select the page that you want to monitor.
  - Note: You can change this page or page view event later on the **Page Location** tab.

5 Click **Create Definition**.

6 Select the identification type. The identification type is the category that best fits the user ID that you are capturing. All identity types are bridged together in the system to create unique customer profiles.

Select one of these types:

- **Login**
  - a login ID that represents a customer. For example, this value could be the user name that the customer uses for your site. Customer profiles can be associated with more than one login ID.
  - Note: For SAS 360 Discover, you must define the user identity as a login type to ensure it is written to the SESSION_FACT LAST_USER_ID table and automatically used as the primary key for the ECV process.

- **Customer ID**
  - a unique ID for a customer on your site. For example, this value could be the customer’s account number. Typically, a customer has only one customer ID, but customers can be associated with multiple customer identities.

7 Refine which pages to include in the event on the **Event Configuration** tab.

- For form submit events, refine the elements that are used to identify the form in the **Form Identification** section.
- In the **Pages Containing Form** or **Pages in Event** section (depending on your event type), specify the pages to monitor for this event.
  - To use only the page that you selected originally, select **Only page where selector was chosen** or **Selected page** (depending on your event type).
  - Select **Pages matching attribute pattern** to define rules that determine which pages to include.
  - Select **Any page** to include all pages.

8 Complete the fields on the **User ID Attribute** tab.

- Define how to capture the identification data.
  - For form submit events, click for the **Field Name, ID** field and select the form field to use.
  - For the **Return** field, select the appropriate value from the menu. You might need to complete additional information based on the option that you choose.
For click events and page view events, select an element that contains the information that you need.

For the **Return value from** field, select a value based on the type of element:

- For attributes, select the name of the attribute.
- For field values, select `value`.
- For the content of a node, select `innerHTML` or `innerText`, depending on the node type.

b For the **Obscured** option, select **Yes** or **No**. This option specifies whether values are obscured before they are saved.

**CAUTION!** For best results, do not modify this setting after identities are created. If you change the obfuscation value after identities are created, the existing identities can be adversely impacted in the back-end database.

9 (Optional) Define an event to confirm a user's ID.

a Set the time period in which the user ID must be confirmed. The time can be in seconds or minutes. The default is one minute.

b Specify the page attributes that identify the confirmation event.

For example, assume that the body tag contains the text "isLoggedIn" for logged-in users. In the **Page Attributes** section, enter this text in the **Page element** field: `body:contains(isLoggedIn)`

10 Republish data collection settings after you create, edit, delete, or change the priority of an identity definition. For more information, see “Publish Data Processing Settings” in *SAS Customer Intelligence 360: User’s Guide*.

## Add and Manage Search Tags

### About Tags

Tags are simple strings that you can associate with item instances in SAS Customer Intelligence 360. You can create tags independent of any item, or you can create and add a tag directly from an item itself. You can also edit or delete tags from an item's details or from the global tag list.

Here are some of the benefits of using tags:

- **Explicit association.** Tagging an item enables you to associate it with a known value, so you can group items that might not be naturally related.
  
  For example, you might want a group of assets that are associated with cloth. This category could contain items such as jeans, car seats, and towels. Without tags, you would need to create a custom attribute or include specific words in the description so that the search could find the items. However, if you add a "cloth" tag, retrieving this group is simple.

- **Precise search result.** Some items might have names or descriptions that are useful for their purpose but are not precise enough for some searches. Tags enable you to select distinct words that you know are associated with items.

- **Multiple associations.** Items can have as many tags as you need, so you could have one item that is a member of multiple tag groups.

- **Global content management.** You can review global tag lists to see all the items in your environment that use specific tags. This benefit enables you to quickly retrieve and operate on items that are in separate areas.
Global Tag Management

Create a New Tag
1. Click [+].
2. Enter a name in the New Tag dialog box.
3. Click Save.

Edit a Tag
1. Click the check box to select the tag that you want to edit. You can rename only one tag at a time.
2. Click Rename, and enter a new name in the Rename window.
3. Click Save.

Reconcile Tags
You can reconcile tags by consolidating several tags to a single tag and removing the unwanted tags.
1. Click the check boxes to select two or more tags that you want to reconcile and click [Reconcile]. The Reconcile Tags window displays the list of tags that you selected.
2. (Optional) Click + and select additional tags to reconcile.
3. Select a tag that you do not want to reconcile and click [Remove] to remove the tag.
4. To reconcile the selected tags to a new tag, in the Tag name field, enter a new tag.
   To reconcile the selected tags to an existing tag, click Browse and select the existing tag. Click OK.
5. Click Save. The tags that you selected are replaced by the reconciled tag.

Delete a Tag
1. Click Select, and select one or more tags to delete.
2. Click -.
3. Click Yes to confirm that you want to delete the selected tags.

Manage Tags on an Item
When you are viewing the Summary tab of an item, you can add a search tag or manage any tags that are associated with it.

Add a Tag
1. Start typing in the Tags text field.
   - If the tag already exists, it appears with similar tags in a drop-down list. Select the tag that you need from the list.
If the tag does not exist, finish entering the tag and click **Add to List**. If the tag is new to the global tag universe, an asterisk (*) appears next to it.

2. Save the item.

**Remove a Tag**

1. Click the (x) that appears next to the tag's name.
2. Save the item.

---

### About GDPR Support in SAS Customer Intelligence 360

General Data Protection Regulation (GDPR) is a data privacy regulation that enables individuals to have more control over how organizations use their data.

**Right to Access**

The **right to access** is a regulation that enables individuals to request that an organization disclose any information they have on that individual.

SAS Customer Intelligence 360 provides export REST APIs to retrieve customer data and event data that has been collected about a specific customer. The data is exported as CSV files that can be downloaded by the person issuing the request through the REST API. The response from the export request returns an ID that can be used to retrieve the CSV files after processing is complete, typically in a few minutes.

See these topics for more information:

- “Exporting Customer Identity Data” in *SAS Customer Intelligence 360: User’s Guide*
- “Exporting Customer Event Data” in *SAS Customer Intelligence 360: User’s Guide*

**Right to Be Forgotten**

The **right to be forgotten** is a regulation that enables individuals to request that an organization delete any data about them.

SAS Customer Intelligence 360 provides the deleteList import descriptor that can be used with the existing REST API. This descriptor enables you to define the type of customer IDs that need to be deleted and then upload a corresponding list of IDs. After the IDs are imported and processed, SAS Customer Intelligence 360 deletes all customer data about the individual, as well as identity types and mappings to IDs that might not identify them (such as visitor IDs and device IDs). This deletion effectively orphans the identity ID and event data so that it cannot be matched to an individual.

For information about this feature, see “Deleting Customer Identity Data” in *SAS Customer Intelligence 360: User’s Guide*.

### Protecting Customer Data

In its **initial proposal to reform data protection rules**, the European Commission defined personal data as “any information relating to an individual, whether it relates to his or her private, professional or public life. It can be anything from a name, a home address, a photo, an email address, bank details, posts on social networking websites, medical information, or a computer’s IP address.” This information is typically referred to as personally identifiable information, or PII.

SAS Customer Intelligence 360 enables you to customize messages and create segments with PII and discard the data afterward. When you import PII with a data descriptor that uses the transient type, the system creates a temporary table to process the data and deletes it afterward, so sensitive information is not
kept in the database. For more information, see "Using a Transient Table for Temporary PII Data" in SAS Customer Intelligence 360: User’s Guide.

For general information about GDPR and SAS, see General Data Protection Regulation on www.sas.com.
Discovering Audience Behavior

Define Traffic Sources

Traffic sources help you see how visitors are coming to your site. This knowledge enables you to analyze the effectiveness of marketing and email campaigns, search engine optimizations (SEOs), and other channels that you use to communicate with visitors.

First, you establish rules to identify a visitor's origin by parsing the referral URL, using cookie information, examining search terms, and so on. You then assign the visitor to a traffic source based on these rules.

About Originations

An origination is the original link, ad, search result, and so on, that leads a customer to your site. Originations contain referral information that helps you determine how visitors arrived at your website. This knowledge enables you to analyze the effectiveness of marketing and email campaigns, search engine optimizations (SEOs), and other channels that you use to communicate with visitors.

The source of a visit might be from one of the following origins:

- a personal referral or brand aware link
An origination link should be constructed so that it contains referral information that you can use in your traffic source definitions. For example, a link might have the parts shown in this image:

Figure 3.1  Traffic Source Link

The query string is the series of characters that follow the question mark (?) in the URL of the landing page. The query string has these features:

- the string consists of [identifier]=[value] or name/value parameter pairs, which are typically separated by an ampersand (&) character
- the string can provide instructions that define what to display to your content management system

You can add additional data to the query string, which can assist with identifying a campaign or promotion, without affecting the content management system.

**TIP** If you include a CID query attribute in your link, then SAS Customer Intelligence 360 can use the link to populate some of the traffic source’s attributes (such as placement, type, and creative). Alternatively, if a visitor uses a generic link, then SAS Customer Intelligence 360 can process the link based on custom or built-in rules.

### Defining Rules for a Traffic Source

To define a rule to assign traffic sources:

1. From the navigation bar, click **General Settings**.
2. Click **Classification ➔ Traffic Sources**.
3. Click ✉️ to create a new rule.
4. On the **Source Properties** tab, define rules to identify the landing page for this traffic source. You can match patterns based on parts of the URL, a referral URL, values in a stored cookie, page attributes, and so on.
5. Perform these steps on the **Source Information** tab:
Define rules for how to construct the name for this source. Enter a custom value, or click + to construct the name based on attributes or elements from the page.

For example, you can use these attribute rules to construct the traffic source name based on part of the referring URL’s domain:

**Table 3.1 Definition for Traffic Source Name**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribute name</td>
<td><strong>Referrer site</strong></td>
</tr>
<tr>
<td>Source attribute</td>
<td><strong>Referrer URL domain</strong></td>
</tr>
<tr>
<td>Return</td>
<td><strong>After</strong></td>
</tr>
<tr>
<td>After</td>
<td><strong><a href="http://www">http://www</a>.</strong></td>
</tr>
</tbody>
</table>

Select a type that fits this traffic source. Types of traffic sources might be displayed in other parts of SAS Customer Intelligence 360 if traffic source information is used (such as the Attribution tab for a data view).

You can select one of these types:

- **Affiliate**: an origination that contains information for an affiliate program.
- **Email**: an origination from an email.
- **Organic Search**: an origination that is the result of a customer entering one or more terms into a search engine and then clicking a search result that is not a paid ad. Organic searches are generated by a search engine’s algorithm, and the results are based on relevance instead of sponsored placement.
- **Poster**: an origination that is associated with a poster ad campaign.
- **Print**: an origination that is associated with a print ad campaign. For example, this link could be tied to a QR code in a magazine.
- **Referrer**: an origination associated with a referral link from a third-party website.
- **Search**: an origination that is associated with a search type. You can use this type to cover both sponsored searches and organic searches, or you could use this type to cover an origination that might not fit those other types.
- **Sponsored Search**: an origination that is the result of a customer entering one or more terms into a search engine and then clicking one of the paid ads.
- **TV**: an origination that is associated with a television ad campaign.
- **Other**: an origination that does not fit another, predefined type.
- **Custom value**: an origination that is a custom type that you define.

If an origination does not match one of the traffic source types, it is processed based on built-in rules. In this case, all of the origination information (such as creative or placement) might not be assigned to the traffic source record.

**TIP** You can define a rule as one of the general types (such as Other) to act as a default in case you want to prevent a session or visit from being evaluated with the built-in rules.

Here are the built-in rules:
Bookmark
classifies visitors who land deep in your site and there is no referrer information. Landing page URLs are generally long and not likely entered by hand, so visitors most likely used a bookmark to visit this page. Sessions and visits are assigned to this type if these conditions are true:

- The visitor’s first page is not a home page.
- There is no referral information.

These values are assigned for this type:

**Table 3.2 Values for Bookmark Traffic Sources**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origination type</td>
<td>Organic</td>
</tr>
<tr>
<td>Origination name</td>
<td>Bookmark</td>
</tr>
<tr>
<td>Origination placement</td>
<td></td>
</tr>
<tr>
<td>Origination creative</td>
<td></td>
</tr>
<tr>
<td>Origination tracking code</td>
<td></td>
</tr>
</tbody>
</table>

Brand Aware
identifies visitors who arrive directly to the website. A session or visit is assigned to the brand-aware origination if these conditions are true:

- The first page matches a landing page that is defined in SAS Customer Intelligence 360.
- There is no referral information, which means that the visitor entered the URL or used a bookmark.

Note: A search might start from a search engine (such as Google), but it is evaluated as a Brand Aware source when the visitor uses a set of predefined search terms (such as the website address, a brand name, or a brand product).

These values are assigned for this type:

**Table 3.3 Values for Brand Aware Traffic Sources**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origination type</td>
<td>Organic</td>
</tr>
<tr>
<td>Origination name</td>
<td>Brand Aware</td>
</tr>
<tr>
<td>Origination placement</td>
<td></td>
</tr>
<tr>
<td>Origination creative</td>
<td></td>
</tr>
<tr>
<td>Origination tracking code</td>
<td></td>
</tr>
</tbody>
</table>

Organic Search
a traffic source or a search result that is a product of a search engine’s algorithm. A session or visit is assigned to this definition if these conditions are true:

- The referrer matches a search engine that is recognized by SAS Customer Intelligence 360.
- The referrer contains the query string for a known search engine.

These values are assigned for this type:

**Table 3.4 Values for Organic Search Traffic Sources**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origination type</td>
<td>Organic Search</td>
</tr>
<tr>
<td>Origination name</td>
<td>The name of the search engine (such as Google, Yahoo, or Bing)</td>
</tr>
<tr>
<td>Origination placement</td>
<td>The referrer’s domain (such as google.com, yahoo.com, or bing.com)</td>
</tr>
<tr>
<td></td>
<td>but without the specific server</td>
</tr>
<tr>
<td>Origination creative</td>
<td></td>
</tr>
<tr>
<td>Origination tracking code</td>
<td></td>
</tr>
</tbody>
</table>

**Social Media**

traffic from social network sites. A session or visit is assigned to the name of the social network if it does not match a defined type and the referrer matches a social network site.

These values are assigned for this type:

**Table 3.5 Values for Social Media Traffic Sources**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origination type</td>
<td>Social Media</td>
</tr>
<tr>
<td>Origination name</td>
<td>The name of the social media site (such as Facebook or Twitter).</td>
</tr>
<tr>
<td>Origination placement</td>
<td>The complete referral information</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Origination creative</td>
<td></td>
</tr>
<tr>
<td>Origination tracking code</td>
<td></td>
</tr>
</tbody>
</table>

**Unlisted Campaign**

classifies visitors who land deep in your site and there is referral information. The visitor has most likely clicked a link that was provided at a third-party site that did not contain any campaign parameters. Sessions and visits are assigned to this type if these conditions are true:

- The visitor’s first page is not a home page.
- The referrer is not null.

These values are assigned for this type:

**Table 3.6 Values for Unlisted Campaign Sources**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origination type</td>
<td>Unlisted Campaign</td>
</tr>
</tbody>
</table>
Unlisted Affiliate classifies visitors who land on one of your publicly advertised home pages, and there is information about the referring site. Sessions and visits are assigned to this type if the following conditions are true:

- The visitor’s first page is a home page.
- The referrer is not null.

These values are assigned for this type:

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origination type</td>
<td>Affiliate</td>
</tr>
<tr>
<td>Origination name</td>
<td>Unlisted Affiliate</td>
</tr>
<tr>
<td>Origination placement</td>
<td>The domain of the referrer</td>
</tr>
<tr>
<td>Origination creative</td>
<td>The complete referral information</td>
</tr>
<tr>
<td>Origination tracking code</td>
<td></td>
</tr>
</tbody>
</table>

6 (Optional) On the Source Attributes tab, configure the following items:

- In the Traffic Source Placement section, define a placement rule. This rule defines the location of the element or link that led a visitor to your site. This location can be a specific page, site, or even location within a web page.

For example, you can define the placement by extracting the title for a landing page:

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribute name</td>
<td>Product landing page</td>
</tr>
<tr>
<td>Source attribute</td>
<td>Page element</td>
</tr>
<tr>
<td>Selector</td>
<td>div#product-805 &gt; div.summary.entry-summary &gt; h1.product_title.entry-title</td>
</tr>
<tr>
<td>Return value from</td>
<td>Inner text</td>
</tr>
</tbody>
</table>
In the Traffic Source Tracking Code section, define a rule to determine the tracking code. This tracking code could be something that you use to identify specific demographics, targeted campaigns, and so on.

In the Traffic Source Creative section, define a rule to associate this traffic source with a creative.

7 Publish the configuration changes. For more information, see “Publish Data Processing Settings” in SAS Customer Intelligence 360: User’s Guide.

**Capture Page URLs**

The rules for transforming URLs determine how the different parts of a URL are parsed to create collections that are useful in site analysis.

1 From the navigation bar, click Basic Collection Rules and select Page URLs.

2 Click to create a new rule.

3 On the Rule to Find Page tab, define a rule for how the page URL is matched.

   - If you select Equals in the drop-down menu of the URL domain section, you can select one or more domains from the Manage Domains tab.

4 (Optional) On the Page URL tab, define a rule for how you want to transform a page URL. This rule enables you to add or remove parts in the URL. For example, the links to some pages might contain strings that are not useful, but you need to record the rest of the URL. In other cases, you might want to append user-specific information from a cookie or referrer to associate the URL with a specific use case.

   a Select the check box to enable Transform Page URL, and the domain entry is created by default.

   
   Note: For most attributes, you can use regular expressions to capture complex text patterns.

   b (Optional) Click to add another attribute. A section to define the attribute appears, and an entry for the attribute is added to the page URL.

   To match a page based on its URL, define your criteria based on how you want to parse the URL:

   i Add page attribute for URL path (entire path), and set the value to profile/ui.

   ii Add a page attribute for URL query parameters. Set the parameter to returnURL and the value to  
   `https://example.com/myLogon/login?service=aHR0`.

   Note: Be aware of the case for all elements and selectors on your site when you configure rules. This includes form names, IDs, elements, and class names that are used in a CSS selector. For most comparisons, search terms and the page source is converted to lowercase and compared. However, regular expressions are left in their original case to preserve special characters.

   c (Optional) Review or modify the page URL that is constructed from your attributes. You can add separators in the fields that are between attributes.
TIP If you select URL path (entire path) for a section’s Source attribute value, typically you should remove the default separator ( / ) for the attribute sections. Removing the default separator avoids issues where an extra forward slash is added to a URL part that already contains a forward slash.

d Click Preview Value to see the final page URL.

For example, assume that you want to transform a URL to remove everything after the string "testurl". Complete these steps on the Page URL tab:

a Add these values to the Domain section:

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribute name</td>
<td>Domain</td>
</tr>
<tr>
<td>Source attribute</td>
<td>URL domain</td>
</tr>
</tbody>
</table>

b Add a section called "URL without testurl".

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribute name</td>
<td>URL without testurl</td>
</tr>
<tr>
<td>Source attribute</td>
<td>URL path (entire path)</td>
</tr>
<tr>
<td>Return</td>
<td>After</td>
</tr>
<tr>
<td>After</td>
<td>testurl</td>
</tr>
</tbody>
</table>

c Add a forward slash between the attributes in the preview URL.

(Optional) On the Query Parameters tab, define a rule to keep or remove query parameters from the URL. Like transforming the URL, defining this rule gives you more control over the URL that data collection is associated with.

Use a comma (,) to separate multiple values.
Publish the configuration changes. For more information, see “Publish Data Processing Settings” in SAS Customer Intelligence 360: User’s Guide.

Define Advanced Collection Rules

The advanced collection rules enable you to collect data on common actions by users on your site. These actions are more complex, so simple collection rules might not capture your user's behavior in a way that enables you to see the larger picture. These actions include behaviors such as using shopping carts, filling out specific forms, going through a check-out sequence, or performing a custom business process.

The advanced rules that you can configure align with the model for how the data is stored in the database. In this way, you can easily find the data that you need in the targeting and analytics components of SAS 360 Discover.

Note: When you first start SAS Customer Intelligence 360, no advanced collection rules are defined.

The procedure to define an advanced collection rule is similar for most types. These are the common steps:

1. From the navigation bar, click Advanced Collection Rules.
2. Click and select the type of rule.
3. Define attributes to identify the page or pages that relate to the collection rule. Define attributes that are based on values such as the path, page elements, attributes, and so on.

   To match a page based on its URL, define your criteria based on how you want to parse the URL:
   a. Add page attribute for **URL path (entire path)**, and set the value to profile/ui.
   b. Add a page attribute for **URL query parameters**. Set the parameter to returnURL and the value to https://data.example.com/MyLogon/login?service=aHR0.

   Note: Be aware of the case for all elements and selectors on your site when you configure rules. This includes form names, IDs, elements, and class names that are used in a CSS selector. For most comparisons, search terms and the page source is converted to lowercase and compared. However, regular expressions are left in their original case to preserve special characters.

4. Define attributes to identify additional details. This information can come from page elements, page or element attributes, cookie data, and so on. For example, you define rules that capture data such as this:
   - content change on a page
   - changes to the value of a JavaScript variable inside an object
   - form interactions
   - an element ID or the onClick() value for a click event
   - HTML5 custom attributes that exist on an element

   Note: Be aware of the case for all elements and selectors on your site when you configure rules. This includes form names, IDs, elements, and class names that are used in a CSS selector. For most comparisons, search terms and the page source is converted to lowercase and compared. However, regular expressions are left in their original case to preserve special characters.

5. Assign a name for categories or types. You can use either a static term for everything that fits that type, or you can construct the name based on a combination of static terms and attributes that extract information.

   a. Click and define a page load attribute.
Publish the configuration changes. For more information, see “Publish Data Processing Settings” in SAS Customer Intelligence 360: User’s Guide.

**Note:** The Last Published date in the table is the same for all advanced collection rules. This is because all configuration changes are published at the same time.

### View Reports

SAS Customer Intelligence 360 has predefined Discover and real-time reports. To view these reports, click 览 from the navigation bar. Click a report name to open the report.

### Real-Time Reports

The real-time reports provide information for the preceding 24 hours. For more information, see “About Real-Time Insights” in SAS Customer Intelligence 360: User’s Guide.

The following are the real-time reports:

- **Real-Time Email Task Performance**: Displays email task activity over the preceding twenty-four hours. For more information, see “Real-Time Email Task Performance Report” in SAS Customer Intelligence 360: User’s Guide.
- **Real-Time Mobile App Performance**: Displays active, returning, and new users for unique mobile device ID. Results are displayed for the preceding twenty-four hours. For more information, see “Real-Time Mobile App Performance Report” in SAS Customer Intelligence 360: User’s Guide.
- **Real-Time Push Notification Task Performance**: Displays information about push notifications that were sent and opened during the preceding twenty-four hours. For more information, see “Real-Time Push Notification Task Performance Report” in SAS Customer Intelligence 360: User’s Guide.

### Discover Reports

The Discover reports contain detailed data about website visitors and their activities during a browsing session. You can filter the data by metric, date range, visitor type, device type, bounce status, and other options. For more information, see “About Discover Reports” in SAS Customer Intelligence 360: User’s Guide.

The following are the predefined Discover reports:

- **Advertising and Campaigns**: Uses the highest number of conversions or highest number of visits to evaluate overall marketing performance. For more information, see “Advertising and Campaigns Report” in SAS Customer Intelligence 360: User’s Guide.
- **Content**: Analyzes the most-visited URLs, entry pages, and exit pages. For more information, see “Content Report” in SAS Customer Intelligence 360: User’s Guide.
- **Downloads**: Analyzes content that has the highest download rate. For more information, see “Downloads Report” in SAS Customer Intelligence 360: User’s Guide.
- **Ecommerce**: Analyzes product performance, purchases, and revenue over time. For more information, see “Ecommerce Report” in SAS Customer Intelligence 360: User’s Guide.
- **Forms**: Uses the highest number of completed forms and highest number of abandoned forms to analyze user interaction with forms. For more information, see “Forms Report” in *SAS Customer Intelligence 360: User’s Guide*.

- **Goals**: Analyzes the highest-performing goals. For more information, see “Goals Report” in *SAS Customer Intelligence 360: User’s Guide*.

- **Internal Searches**: Analyzes the effectiveness of internal searches in locating information. For more information, see “Internal Searches Report” in *SAS Customer Intelligence 360: User’s Guide*.

- **Media**: Uses the highest number of views or highest total viewing time to evaluate media content. For more information, see “Media Report” in *SAS Customer Intelligence 360: User’s Guide*.

- **Promotions**: Uses the highest number of displays or highest number of click-throughs to evaluate site-specific promotions. For more information, see “Promotions Report” in *SAS Customer Intelligence 360: User’s Guide*.

- **Visits**: Analyzes types of visits and tools that are used to access websites. For more information, see “Visits Report” in *SAS Customer Intelligence 360: User’s Guide*.

**Figure 3.2 Sample Report**

Each report contains charts and a table.
Figure 3.3  Sample Line Chart

Figure 3.4  Sample Pie Chart
Create and Manage Access Agents

Email Summary Report

The Email Summary report compares the performance of email tasks. For more information, see “About the Email Summary Report” in SAS Customer Intelligence 360: User’s Guide.

Create and Manage Access Agents

To get access to APIs that are exposed through the API gateway, you must first set up an agent in SAS Customer Intelligence 360. This agent enables you to generate a JWT that is required to make REST calls to the API.

Add an Access Point

To use the on-premises gateway functionality, you must define an access point in SAS Customer Intelligence 360. If you need to set up SAS Real-Time Decision Manager or on-premises SAS Event Stream Processing to process SAS Customer Intelligence 360 events, you must download the access point ZIP file, unzip it, and configure it. You do not need to download the ZIP file to send external events to SAS Customer Intelligence 360. You can also set up your own process to receive SAS Customer Intelligence 360 events without downloading the ZIP file.

To add an access point:

1. Click **Create and Manage Access Agents**.
2. Click **Access Point Credentials**.
3. Enter unique information in the **Name** field.
   - The **ID** is automatically generated by the system.
4. To add access point credentials (that is, a key for the access point), click **Add**.
To activate the access point, select **Active**. By default, the status of the access point is **Inactive**.

**Note:** You must add access point credentials before you can change the status of the access point to Active.

In the **Request New Credentials** dialog box, click **OK** to accept the system-generated **Tenant ID** and **Client secret**.

If necessary, replace or remove the credentials. To replace the client secret, click **Replace**, and then click **OK** in the **Request New Credentials** dialog box. To remove the system-generated tenant ID and client secret, click **Remove**, and then click **Yes** in the confirmation dialog box.

To identify the events that you want SAS Customer Intelligence 360 to send to the access point, click **Associations**, select **Select events**, and then complete these actions:

a. Click **OK**.

b. Select the check box in the row for the event that you want to add. To add all items in the table, select the check box in the top row of the event table.

   To search for an event, enter information in the search box in the **Select Event** window.

c. Click **OK**.

To identify the data views that you want SAS Customer Intelligence 360 to send to the access point, click **Associations**, select **Select data views**, and then complete these actions:

a. Click **OK**.

b. Select the check box in the row for the data view that you want to add. To add all items in the table, select the check box in the top row of the data view table.

c. Click **OK**.

To specify the IDs that become mapped to the internal ID for outgoing and incoming events:

a. Click **Associations**.

b. Select **Associated IDs**.

c. Select one or more items in the **Available items** panel, and then click **Add**. To select all available items, click **Add**. To undo your selection, click **Remove**.

The values for these IDs are inserted into events sent from SAS Customer Intelligence 360 to the on-premises access point (outgoing events) and into events sent from the on-premises access point to SAS Customer Intelligence 360 (incoming events).

Email send agents must be associated with an on-premises access point in order for the email send agent to send generated opt-out events to the on-premises access point for processing. For more information, see “Email Settings” in SAS Customer Intelligence 360: User’s Guide.

**Note:** If any of the email send agents are associated with an external access point, then that external access point also receives all hard-bounce events for that tenant.

To associate an email send agent with the access point, click **Email**, select **Select send agents**, and then complete these actions:

a. Click **OK**.

b. Select the check box in the row for the send agent that you want to add. To add all send agents in the table, select the check box in the top row of the send agent table.

c. Click **OK**.
To enable the access point to use an on-premises data source for segmentation, to create export files, or to use an on-premises SAS installation to run SAS code from SAS Customer Intelligence 360, click **Data access**, select the **Enable on-premises data access** check box, and then complete these steps:

a. Enter the URL for the satellite connection in order to connect SAS Customer Intelligence 360 to on-premises data.

b. Enter the user ID for the satellite connection.

c. Enter the password for the satellite connection.

d. When you use an on-premises data source for segmentation or for creating export files, you must specify a SAS Information Map. Enter the path to the SAS Information Map to be used by the access point for accessing the on-premises data source. The SAS Information Map must be located on the SAS Metadata Server and the path must be specified as follows: 

```
"<metadata root folder>/<sub-folder>/<case-sensitive SAS Information Map name>".
```

For example, you might enter /CI Assets/Information Maps/<case-sensitive SAS Information Map name>.

e. Download the satellite package to access on-premises data and click the **Download** button.

To associate a third-party content management system (CMS) with the access point, click **Content Management**, and then complete these steps:

a. Select the **Enable content management** check box. Only a single access point for a tenant is allowed to have CMS integration enabled.

b. Enter appropriate information into the **Name** field.

c. Enter the name of the class defined in your JAR file into the **Class** field.

d. (Optional) Select the **Allow search** check box if your CMS is enabled to allow searches.

e. (Optional) Select the **Allow folders** check box if your CMS includes folders.

To map SAS Event Stream Processing windows either inbound to or outbound from SAS Customer Intelligence 360 external events, click **SAS Event Stream Processing**, and complete these actions:

a. Select the **Enable events from or to SAS Event Stream Processing** check box.

b. Enter the location of the SAS Event Stream Processing application in the **SAS Event Stream Processing URL** field.

c. Click either the **Inbound Events** or **Outbound Events** tab.

d. Click the **Add Event Maps** button.

e. Enter the names of SAS Event Stream Processing windows that are being mapped into (inbound) or out from (outbound) SAS Customer Intelligence 360 external events in the **Event Stream Processing window** field.

f. In the **Trigger event** field, click ⊕, and select external events that are being mapped into (inbound) or out from (outbound) SAS Customer Intelligence 360.

Note: For inbound events, the **Event Stream Processing window** field appears first, followed by the **Trigger event** field to signify that the mapping goes in the direction of SAS Customer Intelligence 360. For outbound events, these fields appear in reverse to signify that the mapping is out from SAS Customer Intelligence 360.

g. In the **Attributes** field, enter SAS Event Stream Processing window variables and SAS Customer Intelligence 360 event attributes in this format: `window variable name, event attribute` for inbound mappings and `event attribute, window variable name` for outbound mappings. You can enter multiple pairs of window variables and event attributes that are separated by a new line.
To map additional SAS Event Stream Processing windows to SAS Customer Intelligence 360 events, click +.

To remove an event map, click in the panel for the map.

To map SAS Customer Intelligence 360 events to SAS Real-Time Decision Manager events, click SAS Real-Time Decision Manager, and then complete these actions:

a. Enter the location of the SAS Real-Time Decision Manager application in the SAS Real-Time Decision Manager URL field.

b. Click and then select a SAS Customer Intelligence 360 trigger event. The occurrence of this event generates an offer from SAS Real-Time Decision Manager.

c. In the Real-Time Decision Manager event field, enter the SAS Real-Time Decision Manager event that you want to map to a SAS Customer Intelligence 360 event.

d. (Optional) Click and select an external event in SAS Customer Intelligence 360 to use as a response event.

e. In the Attributes field, enter SAS Customer Intelligence 360 event attributes and SAS Real-Time Decision Manager event attributes in this format: SAS Customer Intelligence 360 event attribute, SAS Real-Time Decision Manager event attribute. You can enter multiple pairs of event attributes that are separated by a new line.

f. To map additional SAS Customer Intelligence 360 events to SAS Real-Time Decision Manager events, click +.

g. To remove an event map, click in the panel for the map.

Click Done. The access point appears in the table on the Access page.

**Edit an Access Point**

**Note:** Edits to associated IDs, associated SAS Real-Time Decision Manager and SAS Event Stream Processing events, and associated email send agents are updated dynamically. Edits to the client secret and the class name for the CMS require a restart of the access point.

1. In the table on the Access page, select an access point.

2. Click Access Point Credentials to modify the access point name, access point status, and access point credentials.

   **Note:** You cannot edit the existing access point ID.

3. If you want to discontinue sending events to the access point, click Associations and select None.

   To change the events that are sent to the access point, click , select the events that you want to send, and then click OK.

   To delete an event that is being sent to the access point, click in the row for the event.

   To search for an event, enter information in the search box in the Select Event window.

4. If you want to discontinue sending data views to the access point, click Associations and select None.

   To change the data views that are sent to the access point, click , select the data views that you want to send, and then click OK.

   To delete a data view that is being sent to the access point, click in the row for the data view.

5. If you want to modify the associated IDs for an access point, perform the following actions:
a Select **Associations**.

b Select **Associated IDs**.

c Select one or more items in the **Available items** panel, and then click \( \Rightarrow \). To select all available items, click \( \Rightarrow \). To undo your selection, click \( \Rightarrow \).

To deselect items, select one or more items in the **Selected items** pane, and then click \( \Leftarrow \). To deselect all items, click \( \Leftarrow \). To undo your deselection, click \( \Rightarrow \).

6 If you want to discontinue the access point’s existing association with email send agents, click **Email** and select **None**.

To change an existing association with send agents, click \( \cancel{\text{X}} \), select the email send agents that you want to associate with the access point, and then click **OK**.

To delete an email send agent that is associated with the access point, click \( \text{trash can} \) in the row for the email send agent.

7 If you want to enable the access point to use an on-premises data source for segmentation, to create export files, or to use an on-premises SAS installation to run SAS code from SAS Customer Intelligence 360, click **Data access**, select the **Enable on-premises data access** check box, and then complete these steps:

a Enter the URL for the satellite connection in order to connect SAS Customer Intelligence 360 to on-premises data.

b Enter the user ID for the satellite connection.

c Enter the password for the satellite connection.

d When you use an on-premises data source for segmentation or for creating export files, you must specify a SAS Information Map. Enter the path to the SAS Information Map to be used by the access point for accessing the on-premises data source. The SAS Information Map must be located on the SAS Metadata Server and the path must be specified as follows: “/<metadata root folder>/<sub-folder>/<case-sensitive SAS Information Map name>.” For example, you might enter /CI Assets/Information Maps/<case-sensitive SAS Information Map name>.

e Download the satellite package to access on-premises data and click the **Download** button.

8 If you want to associate a CMS with the access point, click **Content Management**, and then complete these steps:

a Select the **Enable content management** check box. Only a single access point for a tenant is allowed to have CMS integration enabled.

b Enter appropriate information into the **Name** field.

c Enter the name of the class defined in your JAR file into the **Class** field.

d (Optional) Select the **Allow search** check box if your CMS is enabled to allow searches.

e (Optional) Select the **Allow folders** check box if your CMS includes folders.

9 If you want to modify existing map events for SAS Event Stream Processing, click **SAS Event Stream Processing**, and then enter information in fields and make selections as desired.

10 If you want to modify existing map events for SAS Real-Time Decision Manager, click **SAS Real-Time Decision Manager**, and then enter information in fields and make selections as desired.

11 Click **Done**.
Deactivate an Access Point

1. In the table on the Access page, select an access point with the status of Active.
2. Select Inactive.
3. Click Done.

Delete an Access Point

1. Click Select.
2. Click the check box in the row for the access point that you want to delete. To delete all access points in the table, click the check box in the top row of the access point table.
3. Click 🗑.
4. Click Yes in the confirmation dialog box.

Use the SAS 360 Discover Download API

Overview

The SAS 360 Discover Download API enables you to download data that was collected by SAS 360 Discover. After setting up the agent in the user interface, you access this API through a REST client or by using PROC HTTP in SAS.

To set up and use the API:

1. Set up the agent in SAS Customer Intelligence 360.
2. Generate the JSON web token (JWT).
3. Use REST to get a signed URL to download the data. This step is performed only once at the beginning of the process (or whenever the client secret is changed).
   
   Here are the types of files that you can download from the API:
   - non-partitioned identity data files
   - partitioned detail data files
   - Discover base table (DBT) files from the report mart
4. Download and process the data file.

Set Up the Agent

To get access to the SAS 360 Discover Download API, you must first set up an agent in SAS Customer Intelligence 360. This agent enables you to generate a JWT that is required to make REST calls to the API.

To set up an agent:
1 Sign in to SAS Customer Intelligence 360.
2 From the navigation bar, click General \(\Rightarrow\) External \(\Rightarrow\) Access.
3 On the Access page, click \(\bullet\) to create an agent.
4 Enter a name for the agent, and ensure that the agent is activated.
5 To get the tenant ID and client secret, click Add under Access Key, and then click OK.
   Take note of the following information for the agent:
   - agent name, which is needed for REST calls
   - tenant ID, which is needed for REST calls and to generate the JWT
   - client secret, which is needed to generate the JWT
6 Determine the URL for the API.
   a The URL is displayed in the Access section of the interface where agents are created and downloaded so that the endpoint is known to the user.
   b In your REST calls, substitute the SAS 360 Discover Download API string in the following example with your actual host name and path:

   ```
   GET https://<SAS 360 Discover Download API>/marketingGateway/discoverService/dataDownload/eventData/detail/nonPartitionedData
   ```

**Generate the JWT**

Access to the SAS 360 Discover Download API is controlled by a JWT that is generated from the tenant ID and a string that is used as a client secret. JWTs are self-contained objects that enable two parties to transmit data securely between them. JWTs are defined by the RFC 7519 standard. They are digitally signed and can be independently verified. For added security, you can also generate a new client secret at any time. If you generate a new client secret, you must also generate a new JWT. To change the client secret, edit the agent defined in the interface and click Replace in the Agent Credentials section. Contact your SAS account representative for more information.

Here are two methods that you can use to generate a JWT:
- an online tool such as JSON Web Token by Stormpath
- a local installation of Python and the pyjwt package

The JWT library must first be installed in your Python installation. To generate a JWT with a local Python installation:

1 Install version 3.x or later of Python (external link).
2 Use the pip command in Python to install the pyjwt package. Navigate to the Python home directory and enter this command:

   ```python
   python -m pip install pyjwt
   ```
3 Start Python, and use the interactive Python console to generate a JWT.
   The print() function of this script displays the value for the JWT in the console window. Use this JWT for authentication when sending REST calls.

   Place the Python file that generates the JWT token in the same directory. In SAS Customer Intelligence 360, customize the agent, tenant ID, and client secret that will be included in the file. Right-click the Python file and select IDLE, Run, and Run module. The Python script returns a token. Here is a sample Python script:
Note: Although the sample code is written in Python, you can use another language to generate a JWT tenantID and clientSecret.

```python
#Using Python 3.4.3
#Also install the jwt library 'pip install pyjwt' from cmdline
#import http.client
#import urllib
#import re
#import base64
#import jwt

clientID = '1838da3a650001349e2fece2'
secret = b'MjAxNzAyNjExMmpjZGZkZjFsYmJsWzBsbWNqM2dnM2dqazNqM2c='
#encode the encoded secret
encodedSecret = base64.b64encode(secret)
#Generate the JWT
token = jwt.encode({'clientID': clientID}, encodedSecret, algorithm='HS256')
print ('Your token is:')
print (bytes.decode(token))
```

4. Provide the tenant ID as the “clientID” attribute in the JWT payload.

5. Use the client secret to encode the payload.

6. The full format of header to be used for providing JWT is: authorization: Bearer {JWT}.

Send a REST Call to Get the Download Location

After you have generated the JWT, use a REST call to get a list of data files and schema files (in JSON format) to download. You can issue REST calls from a REST client (such as REST Client for Firefox or the stand-alone Insomnia REST Client), the PROC HTTP method in SAS, or a command line application such as curl.

Generally, the URL for a REST call looks similar to this example:

```plaintext
GET https://<SAS 360 Discover Download API>/discoverService/dataDownload/eventData/detail/<download_type>?params...
```

Use these guidelines to construct the URLs:

- The protocol for the REST call is HTTPS.
- The host address for the SAS 360 Discover Download API depends on the region in which your tenant is hosted.
- With each REST call, be sure to include the JWT in the header or send the JWT through a parameter. The JWT can be passed to the API by using one of these methods:
  - In SAS, specify the header statement in PROC HTTP.
  - Specify the JWT in the header option or header tab of the REST client that you are using. For more information, see the documentation for your REST client.
  - If you are using curl to send REST calls, specify the JWT with the -H parameter.

The URL string for the REST call depends on the data that you want to download.
Planning Marketing Strategy

Plan Your Marketing Strategy ................................................................. 32
Create a Plan ................................................................................. 33
Allocate Budgets and Track Expenses .................................................. 33
  Allocate Budgets ............................................................... 33
  View Rolled-up Budget ........................................................... 34
  Budget with Cost Centers ........................................................ 34
  Bulk Edit of Budgets .............................................................. 34
  Add Commitments and Invoices ................................................. 34
  Reconcile Invoices ................................................................. 35
View the Plans Calendar .................................................................. 35
  View the Calendar for a Day, Week, or Month ......................... 35
  View Items on a Gantt Chart .................................................. 36
  Configure Settings for Planning Items ..................................... 36
Customize Your Marketing Hierarchy .................................................. 36
Integrate with Other Items in SAS Customer Intelligence 360 ............... 37
  Integrate with Activities and Tasks ......................................... 37
  Integrate with Messages ......................................................... 37
Import Planning Information ............................................................. 38
Export Planning Information ............................................................... 38
Plan Your Marketing Strategy

Marketing departments that use SAS 360 Plan can operate more efficiently by integrating and managing end-to-end marketing processes.

- Plan strategically and collaboratively to ensure that your marketing plan aligns with your organization’s objectives. Create and approve plans in a centralized repository, so that you can easily manage and retrieve them.
- Manage finances with an integrated budget that tracks expenses and automatically updates your plans and calendars.
- Use an integrated calendar to schedule and track timing of your plans and tasks for marketing efforts.
- Use workflows to manage assignments and get real-time visibility into project timelines. You can customize the available workflow templates to match your business needs.

By combining SAS 360 Plan with other licenses, you can integrate planning, execution, and monitoring of your marketing objectives. Integration with other licenses gives you the information to ensure that your objectives are on track or enable you to quickly change your strategy when necessary.

By default, plans use programs and campaigns to organize marketing objectives. You can either use these defaults, or you can create a marketing hierarchy that represents your organizational hierarchy.

The default marketing hierarchy contains three levels: plan, program, and campaign. The marketing hierarchy follows these rules:

- A plan can contain programs, tasks, activities, and messages.
- A program can contain campaigns, tasks, activities, and messages.
- A campaign can contain tasks, activities, and messages.
Create a Plan

Create a marketing plan to help you achieve your goal. A plan contains marketing strategies, objectives, and other information. A plan can include tasks, activities, and other elements that have been created in SAS Customer Intelligence 360. In this tutorial, you create a plan and add an activity to it.

1. From the navigation bar, click Plans.
2. Click 🍁.
3. Click Plan.
4. On the Details tab, enter this information on the Properties page:
   - The name and description.
   - Enter a search tag or click View all tags to select a tag from a list. You use search tags to associate plans with a known value so that they can grouped together.
   - The business unit. When you select a business unit, the correct currency is associated with the plan. For example, if you select INDIA, INR is displayed as the currency.
     - Note: If the business unit setting is on, then select the business unit for the planning object. If the business unit setting is off, then select the currency for the planning object.
   - The start and end dates.
5. On the Relationships tab, click Add Activities to add an activity that has been created in SAS Customer Intelligence 360. An activity is a coordinated series of tasks that are designed to meet the goals of a marketing campaign. For more information, see “Create an Activity” on page 103.

Allocate Budgets and Track Expenses

A plan enables you to specify the budget and track the expenses of your marketing campaign. In this tutorial, you add financial information to an existing plan. For more information, see “Create a Plan” on page 33.

Allocate Budgets

1. From the navigation bar, click Plans.
2. Open a plan.
3. On the Financials tab, enter this information on the Budgets page:
   - The planned budget.
   - The budgeted amount, or the amount that you have allocated to expenses. The rolled-up budget is the amount that is rolled up from lower levels in the planning hierarchy. The Available budget displays the difference between the planned budget and the budgeted amount.
**View Rolled-up Budget**

To view the budget that is rolled up from the lower levels in the planning hierarchy, navigate to **Financials ➔ Rolled-up Budget**. You can view the planned budgets for each of the immediate lower-level items. Click on the planning item to view the financial details of the lower-level items. Use the breadcrumbs available at the top left of the screen to return to the previous planning item.

**Budget with Cost Centers**

You can add new cost centers to the system. Click **General Settings** from the navigation bar and select **Plans ➔ Cost Centers**. Authorized users create the cost centers that populate the selection list.

To add a cost center:

1. Navigate to **Financials ➔ Budget ➔ Cost Centers**.
2. Click +.
3. Select each cost center that you want to add and click **OK**.
4. Enter the amount that you want to use from each cost center in the **Level** field. The total amount taken from the cost centers should not exceed the **Level** amount.

**Bulk Edit of Budgets**

A bulk edit of budgets enables marketers to reallocate budgets for a set of programs, activities, and tasks. Unused budgets can be reallocated from one planning item to another or moved to an activity that is running low on funds.

1. Select the planning item whose budget you want to edit.
2. Click ⌎ and select ⚙.
3. View the budgets for the entire hierarchy of items on one screen and edit the budgets all at once.
4. Click **Apply**.

**Add Commitments and Invoices**

Commitments are monetary amounts that you commit to vendors. Invoices are submitted by the vendors for services rendered to the organization.

1. You can add commitments and invoices on the **Expenses** page:
   - Click **Add Commitment** and enter the commitment number, name, and other information.
     - If the setting for Cost Centers is enabled, you can distribute the commitment amount to the appropriate cost centers.
   - Click **Add Invoice** and enter the invoice number, name, and other information.
     - If the setting for Cost Centers is enabled, you can distribute the invoices amount to the appropriate cost centers.
   - To add existing invoices to a commitment or to create an invoice:
On the Invoices tab, click Add Invoices. Select from the existing invoices and click OK. To add invoices, click New Invoice.

To add more invoices, click + on the Invoices tab.

To remove invoices from a commitment:

On the Invoices tab, click Select and select an invoice.

Click and confirm the removal.

**Reconcile Invoices**

You can reconcile invoices to reflect the actual amount that is adjusted for payment against an invoice. To reconcile an invoice:

1. In the Invoices section, select an invoice.
2. Click .
3. In the Invoice Reconciliation window, select the payment date and enter the reconciled amount for the invoice.
4. In the Invoice details table, you can distribute the reconciled amount to the appropriate cost centers.

   Select the invoice for which you want to add a cost center. At the top of the Invoice Details table, click + to add a cost center.

   **Note:** You can add cost centers only if the setting for Cost Centers is enabled. For more information, see “Manage Budget Settings” in SAS Customer Intelligence 360: User’s Guide.

5. The Select Cost Centers window displays the cost centers that are associated with the planning item. You can search for a cost center, and you can also activate the switch for Show all the cost centers. Activating this switch displays all of the cost centers that are available in the system. Select one or more cost centers that you want to add and click Save.

6. In the Invoice Details table, in the Reconcile Amount column, add or edit the reconciled amount for that cost center.

   **Note:** The total amount that you distribute to the cost centers should match the reconcile amount that you entered in the table in step 3.

7. Click Save.

**View the Plans Calendar**

You can view the schedule for the planning items on the calendar, based on the information that you specified for each planning item. By default, Plans displays all of the items in the Table view. Click to see all of the items in the Calendar view.

**View the Calendar for a Day, Week, or Month**

You can view the planned schedule for one or more items for a specified day, week, or month. By default, the Calendar view for Plans displays items in the Month view, and the current date is selected. Click Day, Week, or Month to see the items that occur on the selected date, in the selected week, and in the selected month.
To change the selected day, click **Week** or **Month** and select a date. Use `<` and `>` to navigate between consecutive days, weeks, and months. To return to the current date, click **Go to Today**.

Click an item to open it. In the **Week** and **Month** views, on a selected date, you can see only a few items due to limitations on the size and resolution of the screen. To view all of the items on a selected date, click **+ (n) more**. All of the items for the date are displayed in the **Day** view.

### View Items on a Gantt Chart

In the **Calendar** view for **Plans**, click **Gantt** to display all of the items on a Gantt chart.

On the Gantt chart, you can view items in a month, quarter, or year. The **Quarterly** view is the default view, which displays the items that occur in a selected quarter. Click the **View range** drop-down list and select **Monthly** or **Yearly** to view items for that time period.

You can specify a time period to view the items that occur during that period. In the **View range** drop-down list, click **below Custom range**, and select the ‘from’ and ‘to’ dates. The calendar displays the items that occur during that date range. The selected date range is displayed at the top of the window.

### Configure Settings for Planning Items

You can configure preferences and settings to customize the look and feel of the calendar for all of the planning items in the hierarchy. On the **Plans** page, click **Settings**. The **Settings** window shows the **Display** page.

### Configure Time Span to Display Items

On the **Display** page, in the **Time span to display items** drop-down list, the **Show through entire time span** option is selected by default. To customize the time span to show planning items, click the drop-down list and select an option:

### Configure Display of Holidays and Weekends

You can configure the visual display settings to show holidays and weekends in a different color from working days. On the **Display** page, make these selections:

### Customize Your Marketing Hierarchy

A marketing hierarchy can represent the structure of your organization based on the functions and divisions of your company either by region or subdivision, or based on business requirements. You can create only one hierarchy and customize it to meet your needs. Create a maximum of 10 planning levels, and assign unique values to each level.

In SAS Customer Intelligence 360, the Plan, Program, and Campaign hierarchy is available by default.

To create a marketing hierarchy:

1. Navigate to the Configuration settings and select **General**.
2. In the Planning Settings section, click **Marketing Hierarchies**.
3. Click **+**
4. Enter a name and description for the level. The name for each level should be unique.
5. By default, an icon is selected for the level. You can change the icon by clicking **Change**.
Integrate with Other Items in SAS Customer Intelligence 360

Integrate with Activities and Tasks

Activities and tasks can be part of the hierarchy, if they are used with Plans. Budget information can be assigned and tracked for the activities and tasks and the numbers can be rolled up. Associating activities and tasks with planning items can help you complete these actions:

- attribute revenue to marketing activities
- ensure that what you planned is actually completed
- align planning and execution teams
- make decisions about future marketing activity
- compare the amount you actually spent with the amount that you planned to spend
- analyze what works best and what you should not do again

To associate activities or tasks with the planning item:

1. On the Relationships tab of a planning item, click Add Activities or Add Tasks.
2. You can select an existing activity or task and click OK.
3. Create an activity or task by clicking New Activity or New Task.

Integrate with Messages

As multiple messages or offers are communicated across planning items, associating messages with planning items enables marketing managers to track the flow of messages. A message can contain creatives that can be associated with a planning item. After the planning item is associated with a message, the creatives in that message are available to the planning item and all the parent items. At higher levels, a single list of messages can be viewed across the hierarchy. The message can be used with different campaigns, and you can assess the performance of that message.

1. On the Details tab of a planning item, click the Messages tab.
2. Click Add Message. The Select Message screen displays a list of messages. To view the messages that are associated with a parent item, select the Associated with Parent check box.
3. Select the messages to be associated with the planning item and click OK. These messages are associated with all the planning items located in the hierarchy above the planning item.
4. To add messages, click +.
Import Planning Information

Create multiple planning items and their hierarchy at once using a template that is available from SAS Customer Intelligence 360. The template is a Microsoft Excel file that contains worksheets generated by the system. Each worksheet corresponds to a level in the marketing hierarchy. For example, if your hierarchy contains Plans, Programs, and Activities, then the template contains worksheets for Plans, Programs, and Activities.

Note: Changing the worksheet names or adding worksheets might invalidate the template.

1. Begin by downloading the Microsoft Excel template. From the navigation bar of the planning item list screen, click \( \text{ download template } \).

2. Add information to the Microsoft Excel file that is relevant to your planning items and hierarchy.

3. Update SAS Customer Intelligence 360 with the information from the updated template. Click \( \text{ import Excel } \).

Export Planning Information

You can export information about a single planning item to a Microsoft Excel spreadsheet. The exported file contains worksheets generated by the system. Each worksheet corresponds to a level in the marketing hierarchy. For example, if your hierarchy contains Plans, Programs, and Activities, then the template contains worksheets for Plans, Programs, and Activities.

When you select an item to be exported, the exported file contains information about that item and any associated planning items, tasks, and activities. The exported information shows details for the selected plan item and any of its children.

Note: Tasks and activities are associated with plan items with planning properties. As a result, only those activities and tasks that contain planning properties can be exported.

There are three ways to export planning information.

- From Plans, select the item that you want to export. Click \( \text{ export to Excel } \).

  Note: You can export only one planning item at a time.

- From Plans, open the item that you want to export. Click \( \text{ export to Excel } \).

- From Plans, open an item and navigate to the Relationships tab. Click Select and select the planning items that you want to export. Click \( \text{ export to Excel } \).

When you export an item, all of the details associated with that item are exported.
Creating Workflows

About Workflows
Workflows enable you to automate processes to save time. A workflow consists of a series of steps that are executed in a specific order to track the progress of a project. Marketing teams can build workflow templates based on best practices. These templates can be created for product launches, collateral designs, advertising, direct marketing, sponsorships, event management, and so on.

Create a Workflow
To create a workflow:

1. Click the Workflows tab of the planning item.
2. Navigate to Workflow List ⇒ Start Workflow.
3 Select a workflow template and click **Continue**. A diagram of all the workflow tasks for each workflow template is displayed. The workflow templates are configured by your administrator and made available to the users in your organization.

4 On the **Details** tab, enter a **Name** and **Description** for your workflow.

5 On the **Workflow Tasks** tab, select the contributors who will execute the tasks by clicking +.

6 For each contributor, enter the duration in days. The duration is the number of working days, excluding weekends and holidays, that the contributor has to complete the workflow task. When you enter the duration, the due date is automatically calculated.

7 Alternatively, you can change the due date and the duration is calculated accordingly.

8 Click **Add** to provide instructions to each contributor individually.

9 Click : and select **Edit details** to add these details to the workflow task:
   - Enter the duration in days.
   - Click **Add** to provide instructions to the contributor.
   - Click \( \) to change the contributor.
   - Click \( \) to change the task name.
   - Click \( \) to add attachments. Click **Add** and add the supporting files.
   - Click \( \) to add comments. Enter the topic name and comments, and then click **Post** to post the comments.

10 Click **Activate** to start the workflow on the supplied start date. To save a draft of the workflow, click \( \).

11 A workflow with a status of In Progress is initiated.

You can switch between a table view of the workflow task and a calendar view by clicking the appropriate icons. You can access a Gantt view to visualize the start and end dates for each workflow task and the contributors. If a contributor is removed from a task, that contributor is not visible in the calendar view.

**Cancel a Workflow**

When you create and initiate a workflow, its status is In Progress. To cancel the workflow:

1 On the **Workflow List** tab, click the workflow. A workflow details screen is displayed.

2 Click \( \).

3 The status of the workflow changes to Canceled.

**Update Tasks**

1 On the **Workflow Tasks** tab, a list of your assigned tasks is displayed.

2 Click the workflow to enter your response, and then click **Mark Complete**.

3 The completed task is removed from the list.

**Delete Workflows**

You can delete workflows that are completed, canceled, or in draft form.
On the Workflow List tab, select the workflows that you want to delete.

Click 🗒️.

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**Working with Your Workflow Tasks**

**View the Workflow and Approval Task List**

To view all the workflow and approval tasks that are active and assigned to you:

1. On the left navigation bar, click 📖 My Workflow Tasks or click the link that you receive in the email notification about the task.

2. A list of the workflow and approval tasks assigned to you is displayed.

For approval tasks, the workflow name column refers to the item name that has been routed for approval.

**Respond to a Workflow Task or an Approval Task**

To respond to a workflow task or an approval task that is assigned to you:

1. Click the task name in the task list. You can view details such as start date, due date, and status, and whether the task is on time.

2. The Reference Information section is displayed with a link to the planning item where the workflow was initiated. The link is available only if the administrator configures the option to show a link in the task so that the contributor can view the details. You can click the link to view the details of the planning item.

3. In the Preceding Workflow Task section, the details of the task that is configured as a preceding task by the administrator are displayed. All the configured information from the previous task can be viewed.

4. In the Status Update section, all the files for approval are listed on the Items for Approval tab. You can annotate the video and image files. For more information, see “Annotating Files" on page 42.

   On the Details tab, responses from previous tasks are displayed. You can download the annotated PDF files with all annotations and comments embedded in the file. You have the option to download files with or without annotations.

5. Enter a response in the text area. A response can be mandatory depending on how the workflow task is configured.

6. Upload files to support your response by clicking Add. There is no restriction on the file type. You can upload multiple files. Ensure that the upload is complete and there are no errors. Files with errors are removed from the list. These files can be downloaded by the initiator and by other contributors. You can delete an uploaded file by clicking 🗑️.

Note: By default, the file upload feature is not available for an approval task. This feature can be configured if required.

To add reference files, click 📝, and then click Add and upload the files.

If you select a template with multiple contributors and file approvals when creating a workflow, the contributors can upload files for approval. All the contributors in the Workflow can view and approve or reject the files individually and add comments. If a file is rejected, the contributor of the previous task needs to change and upload the files again for approval.
You can save the task without marking it complete by clicking . Saving the task enables you to keep adding details to the task as you progress. You can mark the task complete when you have entered all the necessary details.

**Annotating Files**

**Annotate an Image File**

These image files can be annotated:
- GIF
- JPEG
- BMP
- PNG
- SVG

To annotate an image file:
- Click an image file to open it.
- Select the annotation tools, mark the area, and add comments in the comments pane.
- You can view all comments in the comments pane by clicking **View All Comments**. To view a specific comment, use the select tool and select the annotation.
- You can edit a comment by clicking , delete a comment by clicking , and respond to the comment.
- To view the latest responses, click to synchronize the responses.
- Use the search box to search for a specific comment.
- The annotations are saved automatically.

**Annotate a Video File**

These video files can be annotated:
- Mp4
  
  **Note:** Mp4 videos must conform to video H264 codec and audio AAC codec standards.
- WebM
- OGV

To annotate a video file:
- Click a video file to open it.
- Play the video. Pause when you want to annotate a frame.
- Select the annotation tools and mark the area. Add comments in the comments pane.
- You can view all comments in the comments pane by clicking **View All Comments**. To view a specific comment, use the select tool and select the annotation.
- You can edit a comment by clicking , delete a comment by clicking , and respond to the comment.
- To view the latest responses of other contributors, click to synchronize the responses.
- Use the search box to search for a specific comment.
- The annotated frames are listed in the **Annotation Navigator** section.
The annotations are saved automatically.

**Annotate a PDF File**

To annotate a PDF file:
- Click the PDF to open it. All the comments on the first page, if any, are displayed.
- Select the annotation tools such as rectangle, ellipse, freehand drawing, and polygon, and then mark the area. Add comments in the comments pane. You can use text tools such as highlight, strikethrough, and underline.
- You can view all comments in the comments pane by clicking **View All Comments**. To view a specific comment, use the select tool and select the annotation.
- Click the toggle sidebar icon to expand the sidebar. You can switch between viewing the thumbnail of each page and viewing the document outline. The document outline can be viewed only if it has been configured for the PDF file.
- You can edit a comment by clicking ☐️, delete a comment by clicking -trash, and respond to the comment.
- To delete an annotation, select the annotation and click -trash.
- To view the latest responses, click ⏳ to synchronize the responses.
- Use the search box to search for a specific comment.
- The annotations are saved automatically.

You can search for specific items in the file by clicking 🕵️‍♂️ and use the zoom tools to change the magnification.

**Complete a Workflow Task**

To complete a workflow task that is assigned to you:

1. Click the workflow task name in the workflow task list. You can view all the task details.
2. After you respond to the task, click **Mark Complete**.

**Complete an Approval Task**

To complete an approval task that is assigned to you:

1. Click the approval task name in the task list. You can view all the task details.
2. Select **Approve** or **Reject** and add your comments.
3. Click **Submit**.

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**Working with Your Workflows**

**View the Workflow and Approval List**

To view all the workflows and approvals that you initiate:

1. From the left navigation bar, click 📚.
A list of all the workflows and approvals that you initiated is displayed. By default, this list displays workflows that are in progress or in draft form and all the approvals that you have initiated. To view all the workflows, remove any filters you placed on your workflows.

Note: The projected end date is the date that the system has calculated for completion of the task. The actual end date is updated when the workflow tasks are completed.

**Edit Workflow Details**

Click a workflow name to view the workflow details.

The initiator of a workflow can edit a workflow, which is in progress or in draft form.

- **On the Summary tab**, these workflow details are displayed:
  - start date.
  - planned and projected end dates.
  - status.
  - diagram. Click a task to view its details in the section below the workflow. You can click the task name to add instructions, add or delete contributors, and change the duration of the contributors.

- **On the Details tab**, you can edit and modify the name and description of the workflow. You can also view the details of the source planning item. The source planning item is the item instance where the workflow was initiated. Click ☑ to add comments. Enter the topic name and comments, and then click **Post** to post the comments.

  Note: Depending on the duration for each contributor, the end date is updated.

- **On the Workflow Tasks tab**, you can perform these actions:
  - Add, edit, or delete the contributors for the workflow tasks that are not initiated.
    - For a workflow that is in progress, you can only delete the contributors.
  - Edit the duration or enter the due date for each contributor and provide instructions. When specifying the duration or due date, remember these details:
    - The duration of the task does not exceed 999 days.
    - If the duration or due date is not specified, by default, the due date is set to the same date as the start date and the duration is 0. This setting indicates that the task should start and end on the same day.
    - For the due date selection, the dates that occur before the current date and weekend are not available for selection.
    - If the duration is specified and the calculated due date falls on a weekend, the due date is automatically changed to Monday.
  - Click **View** to view the responses of the contributors for the completed tasks.
  - View the progress bar for each task, which indicates the percentage of completed work. For multi-contributor tasks, the completion percentage is calculated by dividing the duration of the completed work by the total duration. If the workflow task is delayed, the progress bar is red and a warning sign is visible in the **Status** column. The initiator can view the responses of the contributors for each task in the workflow.

- **On the File Catalog tab**, you can view all the files that are uploaded by the contributors of the tasks.
  - To catalog these files into Assets, select the files to be cataloged and click ☑. Then, select the folder to catalog the asset and click **OK**.
  - In the **Catalog Assets** window, click **Catalog**. The status of the catalog job is displayed. Click **Close**.
Delete Workflows and Approvals
You can delete workflows and approvals that are completed, canceled, or in draft form.

1. Select the workflow or approval that you want to delete.
2. Click 
3. Confirm the deletion.

Note: If a workflow has an approval type of task, the annotations associated with the workflow are also deleted.

View the Workflows Calendar

View Workflow Items in the Calendar View
You can view the schedule for workflow items on the calendar based on the information that you entered for each workflow and workflow task.

On the navigation bar, click My Workflows to view the workflows and approvals that you initiated. Click My Workflow Tasks to view all of the workflow and approval tasks that are active and assigned to you. By default, the items are displayed in the Table view. Click to see all of the items in the Calendar view.

The items are displayed in different color variants, depending on the attribute that is selected for color configuration. For workflow items, the status attribute is configured by default. Click to view the color legend for each of the calendar items.

To view details about a workflow or a workflow task in the Month, Week, or Day view, position your mouse pointer on the item. The tooltip displays the following information about the item, which includes the name of the workflow item, and these fields and their values:

Note: The fields listed in the table display variable values in the tooltip for each item, depending on the information that you entered when you created the items.

Table 5.1 Tool Tips

<table>
<thead>
<tr>
<th>My Workflows</th>
<th>My Workflow Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start date</td>
<td>Start date</td>
</tr>
<tr>
<td>Planned start date</td>
<td>Due date</td>
</tr>
<tr>
<td>Projected end date</td>
<td>Status</td>
</tr>
<tr>
<td>Status</td>
<td>Delayed by</td>
</tr>
<tr>
<td>Progress</td>
<td>Workflow name</td>
</tr>
<tr>
<td>Delayed by</td>
<td>Submitted by</td>
</tr>
</tbody>
</table>
View the Workflow Schedule for a Day, Week, or Month

You can view the schedule for one or more workflow items or workflow tasks for a specified day, week, or month. By default, the Calendar view displays items in the Month view, and the current date is selected. Click Day, Week, or Month to see the items that occur on the selected date, in the selected week, and in the selected month.

To change the selected day, click Week or Month and select a date. Use < and > to navigate between consecutive days, weeks, and months. To return to the current date, click Go to Today.

View Items on a Gantt Chart

In the Calendar view, click Gantt to display all of the items on a Gantt chart.

View Items in a Month, Quarter, or Year

On the Gantt chart, by default the bars are displayed in the Quarterly view for the items that span three months. But, if you selected a month in another view, the bars for items that occur in the selected month are displayed.

The Quarterly view displays the items that occur in a selected quarter. Click the View range drop-down list and select Monthly to view the items that occur in a selected month. Select Yearly from the View range drop-down list to view the items that occur in a selected time span of several months or a selected year. Use < and > to navigate between consecutive months, quarters, or years.

On the Gantt chart, the bars display the status for each item. Alongside the Gantt chart, the items are also displayed in a flat list. The listed items are sorted by the Last Modified date.

Note: In the Gantt view, the Go to Today link is not available for navigation.

Specify a Time Period

You can specify a time period to view the items that occur during that period. In the View range drop-down list, click below Custom range and select the ‘from’ and ‘to’ dates. The calendar displays the items that occur during that date range. The selected date range is displayed at the top of the window.

Depending on the custom date range that you specified, the calendar displays these views:

**Table 5.2 Custom Date Ranges**

<table>
<thead>
<tr>
<th>Selected Custom Date Range</th>
<th>Display Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30 days</td>
<td>Monthly format</td>
</tr>
<tr>
<td>31 days to 90 days</td>
<td>Quarterly format</td>
</tr>
<tr>
<td>90 days to less than one year</td>
<td>Quarterly format, with multiple quarters</td>
</tr>
</tbody>
</table>
### Configure Settings for Workflow Items

**About Settings for Workflow Items**

You can configure preferences and settings to customize the look and feel of the calendar for workflow items. On the My Workflows page and My Workflow Tasks page, click and click Settings. The Settings window shows the Display page.

Note: Changes to these settings affect only workflow items in the Calendar view.

**Configure Time Span to Display Items**

On the Display page, in the Time span to display items drop-down list, the Show through entire time span option is selected by default. To customize the time span to display for workflow items, click the drop-down list and select an option:

- Show only start date
- Show only end date
- Show only start and end dates

Note: The Time span to display items drop-down list displays the default selection, based on the settings that are configured in the calendar definition after the tenant is onboarded.

**Configure Display of Holidays and Weekends**

You can configure the visual display settings to show holidays and weekends in a different color from working days. On the My Workflows page and My Workflow Tasks page, click and click Settings. The Settings window shows the Display page.

Make these selections:

- Select the Show holidays check box to show holidays in a different color.
  
  The holiday labels are displayed, depending on the holidays that are configured for your organization.

- Select the Highlight weekends check box to show weekends in a different color.

The settings are applied to the Day, Week, Month, and Gantt views.

Note: In the Gantt view, holidays are displayed only in the Monthly view. To view the holiday label, move your mouse pointer over the blue bar on that date.
Creating Content

Work with Assets

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create an Asset</td>
<td>49</td>
</tr>
<tr>
<td>Supported File Formats</td>
<td>50</td>
</tr>
<tr>
<td>View an Asset</td>
<td>50</td>
</tr>
<tr>
<td>Create a Version</td>
<td>51</td>
</tr>
<tr>
<td>Create a Rendition</td>
<td>51</td>
</tr>
<tr>
<td>Delete an Asset</td>
<td>52</td>
</tr>
<tr>
<td>Recycle Bin</td>
<td>52</td>
</tr>
</tbody>
</table>

Upload and Update Multiple Assets at Once

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share Assets</td>
<td>53</td>
</tr>
<tr>
<td>Share the Link to an Asset</td>
<td>53</td>
</tr>
<tr>
<td>Share Assets Externally</td>
<td>53</td>
</tr>
</tbody>
</table>

Monitor Assets

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work with Assets Folders</td>
<td>55</td>
</tr>
<tr>
<td>Create a Folder</td>
<td>55</td>
</tr>
<tr>
<td>Edit Folder Properties</td>
<td>55</td>
</tr>
<tr>
<td>Move a Folder</td>
<td>56</td>
</tr>
<tr>
<td>Share a Folder</td>
<td>56</td>
</tr>
<tr>
<td>Sort Folders</td>
<td>56</td>
</tr>
<tr>
<td>Configure Views</td>
<td>56</td>
</tr>
<tr>
<td>Delete a Folder</td>
<td>56</td>
</tr>
</tbody>
</table>

Work with Creatives

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work with Messages</td>
<td>58</td>
</tr>
<tr>
<td>Add Creatives</td>
<td>58</td>
</tr>
<tr>
<td>Remove Creatives</td>
<td>58</td>
</tr>
<tr>
<td>Information about the Message</td>
<td>58</td>
</tr>
</tbody>
</table>

Work with Assets

Learn how to create and view assets, and create versions and renditions from an asset. To begin working with assets, click **Assets** from the navigation bar.

Create an Asset

1. On the top navigation bar, click **Assets**.
2. In the **Standard** properties section, enter this information:
Enter a **Name** for the asset.

(Optional) Enter a **Description** for the asset.

Click **Browse** to select the original file to upload. You can save the asset without uploading a file and add the file later. A file size of 20 MB is supported for a single asset.

Click **Browse** to select the appropriate location for the asset. The folder that you are currently in is the default.

Add or search for a tag in the **Tags** field. To add a tag, enter the text and click **Add to list**. Click **View all tags** to view all of the available tags.

Select a **Category** for the asset.

(Optional) Click **** to select an expiration date for the asset.

In the **Custom** properties section, enter information for your custom properties.

Click ****. The asset is uploaded, and a preview and a thumbnail are created. Click **Close**.

For a video asset, you can upload any file as the original asset file and upload the video file in a supported format as a preview rendition. The thumbnail image is generated by default. Click the asset to view the properties. The thumbnail image is displayed on the **Asset Details** tab. Click the image to play the video file in your browser, in the **Preview** window.

Click **** to preview the asset, download the original, download a preview, open the asset, delete the asset, move the asset, copy the asset, rename the asset, or share the asset.

### Supported File Formats

Assets support various file formats for upload. However, only these types of file formats are supported for media processing and autogeneration of thumbnails and preview renditions:

- The supported image file formats are .tiff, .jpeg, .jpg, .bmp, .gif, .png, .dng, and .wpg.

  **Note:** The .pcx file format is not supported for creatives. The supported image file formats for mobile in-app message and mobile push notification creatives are .jpeg, .jpg, and .png.

- The supported document formats include .xls, .xlsx, .ppt, .pptx, .doc, .docx, and .pdf.

- The supported video file formats include .mp4, .avi, .flv, .wmv, .mov, .mpeg, and .mpg.

  **Note:** Mp4 videos must conform to video H264 codec and audio AAC codec standards.

- The supported file formats also include HTML files.

  **Note:** The supported character encoding is UTF-8. Other formats in an uploaded HTML file might display garbage characters.

### View an Asset

You can view and edit an asset and its properties, and create versions and renditions.

1. Click an asset.

2. Click the image to display a preview. Click **Close**.

3. On the **Properties** page, view or edit the information. Click **** or **Close**.

4. On the **Summary** page, view the properties of the asset.

5. On the **Versions** page, view or edit the information.
On the Usage page, view the creatives and tasks that use the asset. To go directly to the associated task, click ![ ] and click View.

You can download the original or preview, save the file with a different name, or share the asset.

- To download the asset, click ![ ] and select Download Original or Download Preview. The file appears at the bottom left of the screen.
- To save the asset with a different filename, click ![ ] and select Save as. Enter a name, select the location to copy the asset to, and then click OK.
- To share the asset, click ![ ] and select Share. Select the access level of the user that you want to share the asset with, copy the URL, and then click Close. Provide the link to the user.

From the Tile view, you can click ![ ] on each individual asset to preview the asset, download the original, download a preview, open the asset, delete the asset, move the asset, copy the asset, or share the asset.

To work with several assets at the same time, select the Select all check box, click ![ ] and complete these actions:

- To update attributes for the selected assets, click ![ ] Update Properties. Edit as necessary and click Apply. You can clear the description and expiration date.
- To share the selected assets, click ![ ] Share. Select the access level of the user that you want to share the assets with, copy the URLs, and then click Close. Provide the links to the user.
- To move the selected assets, select Move. Select the location and click OK.
- To copy an asset, select Copy. Enter a name, select the location, and then click OK. All attribute values, other metadata, and renditions are copied from the source asset to the new copy.
- To rename an asset, select Rename. Enter a name and click OK.
- To download the selected assets, select Download Assets. You can select the original, the preview, or the thumbnail. Enter a filename and click Create. (Do not use /, \, :, ;, *, ?, <, >, or |.) Click Download. Ensure that your pop-up blocker is disabled.
- To create a properties file, select Download Properties File. This Microsoft Excel file contains the standard properties (folder path, name, description, and expiration date) and any custom properties and tags associated with the assets. The Excel file can be used as a template for batch uploads. Open the file to view or edit the properties. Update from Excel. Ensure that your pop-up blocker is disabled.
- To view the recycle bin, select Recycle Bin.
- After you update properties in the spreadsheet, click Update from Excel.

**Create a Version**

1. Click an asset.
2. On the Versions page, click ![ ].
3. Click Browse to select an image to upload.
   (Optional) Select the Generate custom renditions check box to generate custom renditions for the asset.
4. (Optional) Click Browse to select the image for the thumbnail.
5. (Optional) Click Browse to select the image for the preview.
6. Add any Comments for the new version of the asset.
7. Click Save, and then click Done.
Click ‼️ to preview, download, restore, or delete the version.

Create a Rendition

A rendition is a different base file format (for example, a different size, resolution, or format). Each asset version has a set of defined renditions.

1. Click an asset.
2. Click the Renditions tab to see the original asset, a preview of the asset, and a thumbnail of the asset. Additional renditions of the asset are also displayed.
3. Click ‼️ to create a rendition. Enter a Rendition name, and then click Browse to select the image to upload.
4. Click Save.

After a rendition is added, you can download, rename, delete, or replace the rendition:
- To download the rendition, click ⬇️ and open or save the asset.
- To rename the rendition, click ⏋️ and enter a new name. Click Save.
- To delete the rendition, click 🗑️. Click Yes.
- To replace the rendition, click 🎥. Click Browse and navigate to the appropriate file to upload. Click Save.

Delete an Asset

To delete an asset, on an asset, click ‼️ and select Delete, or from the table view, select an asset and click 🗑️. Deleted assets are sent to the recycle bin.

Recycle Bin

You can restore assets and permanently delete assets from the recycle bin.

1. On the top navigation bar, click ‼️ and select Recycle bin.
2. To restore an asset, select the appropriate asset and click 🎭. Click Yes to confirm the restoration of the asset to its original folder.
   - Click Select all to restore all of the items in the recycle bin.
3. To permanently delete an asset, select the appropriate asset and click 🗑️. Click Yes to confirm the permanent deletion of the asset.
   - Click Select all to delete all of the items in the recycle bin.
4. Click Close.

You can also click ‼️ and select Delete or Restore.

Upload and Update Multiple Assets at Once

Learn how to upload or update multiple assets at one time.

See the video here: Upload Multiple Assets.
Share Assets

Share the Link to an Asset

You can share a link to an asset with another SAS Customer Intelligence 360 user.

1 In the Tile view, select an externally shared asset, click on the asset, and select Share. Or, you can select the asset from the Tile view or Table view, click , and select Share.

2 Select the access level of the user that you want to share the asset with.
   - Select Anyone with the link and authorized access to enable only a SAS Customer Intelligence 360 user with the authorized permission to access the URL.
   - Select Anyone with the link to enable any SAS Customer Intelligence 360 user to access the URL.

3 Click Copy. The available URLs are copied to the clipboard.
   
   Note: If the asset is not enabled for external sharing, the URL is not displayed. To display the URL, you must first enable the asset for external sharing.

4 Click Close and provide the copied URL to the user.

5 Alternatively, to view the URL from an open asset, on the Orchestration tab, click View Link.
   
   Note: If the asset is not enabled for external sharing, View Link is not displayed.

Share Assets Externally

You can select one or more assets and make them available to external users. You can also select one or more externally shared assets and make them unavailable to external users. You can view the external sharing status in an open asset, on the Orchestration tab. You can also view the external sharing status for an asset in the Tile view and in the Table view. In the Tile view, externally shared assets are displayed with the label “External”.

Enable External Sharing

To enable external sharing for a single asset:

1 Navigate to the asset.

2 In the Tile view, click on an asset and select Enable External Sharing.

   TIP An alternative action is to click the Orchestration tab in an open asset, and then click Enable External Sharing.

When you enable external sharing for an asset, an asset URL is generated, which is accessible to external users. On the Orchestration tab in an open asset, click View Link to view, copy, and share the URL. For more information, see “Share the Link to an Asset” on page 53.

To enable external sharing for several assets:

1 Select all of the assets for which you want to enable external sharing.

2 On the top menu bar, click and select Enable External Sharing.
A batch update job is run to enable several selected assets for external sharing. To view the job information for the selected assets, click 🗄️. On the **Job Information** page, click the **Updates** tab to see the job status. To view the log messages for the job, in the **View Details** column, click 🗂️.

**Note:** You cannot enable external sharing for expired assets, assets with unsupported file formats, assets without original renditions, and assets that you do not have permission to edit. Currently, only image file formats are supported.

### Disable External Sharing

To disable external sharing for a single asset:

1. Navigate to the asset that is enabled for external sharing.
2. In the Tile view, click `:` on an asset and select **Disable External Sharing**.

   **TIP** An alternative action is to click the **Orchestration** tab in an open asset, and then click **Disable External Sharing**.

To disable external sharing for several assets:

1. Select all of the assets for which you want to disable external sharing.
   **Note:** Only assets that are enabled for external sharing can be disabled.
2. On the top menu bar, click `:` and select **Disable External Sharing**.
   **Note:** If you disable external sharing, the items that use the externally shared assets might be affected.

A batch update job is run to disable several selected assets for external sharing. To view the job information for the selected assets, click 🗄️. On the **Job Information** page, click the **Updates** tab to see the job status. To view the log messages for the job, in the **View Details** column, click 🗂️.

**Note:** You can disable external sharing for assets only if you have Edit permissions for the selected assets.

### Manage Externally Shared Assets

When you enable external sharing for one or more assets, a URL is generated for the original rendition of the asset. The URL refers to the location of the asset on the external content delivery server. If you update the asset or upload a new version, the URL remains unchanged and refers to the latest version of the original rendition of the asset.

However, if you replace the original rendition or upload a new version of the asset with an unsupported file type, external sharing is automatically disabled for the asset. Currently, only image file formats are supported.

If you delete an asset, or the asset expires, external sharing is disabled and the URL is inaccessible.

### Filter Externally Shared Assets

Click the **Filters** tab to filter assets that are enabled for external sharing or disabled for external sharing. In the **External Sharing** section, select the check box next to **Yes** to filter assets that are enabled for external sharing. Select the check box next to **No** to filter assets that are disabled for external sharing. Select the check box next to **In Progress** to filter assets for which the job status is in progress.

**TIP** Click ⌁ to filter assets that are enabled or disabled for external sharing.
Monitor Assets

Use the information that is available from the Insights tab to monitor the asset performance over a period of time.

The Asset Performance section displays the reports for the performance of the open asset. Click 🔄 at the top of the report and select a predefined time period from the drop-down list to filter report information. To view the performance of the asset for a channel, select an option from the Channel drop-down list.

Below each report, you can view information about the tasks that are associated with the asset.

You can view the following information about asset performance:

- Click the Metric comparison tab to view a report that compares asset metrics such as impressions and impressions viewable, or impressions viewable and conversions.
- Click the Impressions tab to view a report about the total impressions for an asset.
- Click the Impressions Viewed tab to view a report about the number of impressions that were viewed for the asset.
- Click the Conversions tab to view a report about user interaction with the asset that resulted in a conversion.

Work with Assets Folders

Learn how to create, edit, arrange, share, sort, and delete folders. You can also configure views for folders.

Create a Folder

Complete these actions:

1. On the left navigation bar, under Folders, click 🔄.
2. Enter a Name for the folder.
3. (Optional) Enter a Description for the folder.
4. Click OK.

Edit Folder Properties

Complete these actions:

1. Select a folder.
2. Click 🎨.
3. Edit the information on the Properties tab.
4. Click OK.
Move a Folder
Complete these steps:
1 Select a folder.
2 Click ➔ and select Move folder.
3 Select the appropriate location.
4 Click OK.

Share a Folder
Complete these steps:
1 Select a folder.
2 Click ➔ and select Share folder.
3 Select the access level of the user that you want to share the folder with.
4 Copy the URL.
5 Click Close.
6 Provide the URL to the user.

Sort Folders
Complete these steps:
1 Click ⚪.
2 Sort the folders by Name or Most recent.

Configure Views
Complete these steps:
1 Click ➔ and select Configure views.
2 Select whether you want to view assets for the selected folder only, or for the selected folder and subfolders.
3 Click OK.

Delete a Folder
Complete these steps:
1 Select a folder.
2 Click ⌚. If you delete the folder, all associated subfolders and assets are also deleted.
3 Click Yes.

The folder is sent to the recycle bin.

---

**Work with Creatives**

A creative represents the content that a task delivers to a web page, via email, or to a mobile application. There are many ways to build creatives, including importing or using assets, using an HTML editor, or importing treatments from external applications. Creatives can be used in a spot or in a task, and you can group several creatives in a message.

For example, you can define a default creative for a spot so that the spot is never empty. Or, you can create a task that displays a creative on a web page when a known user is logged in. If you use merge tags or personalization variables in your creatives, you can deliver personalized content to your users.

To add creatives, click **Creatives** from the navigation bar.

- To import assets, click ![Assets](assets.png) and then select **Add creative from asset**.
  
  **Note:** If you import an asset from **Creatives**, the imported asset is saved as a new creative.

- To import treatment offers from external applications, click ![Spots](spots.png) and select **Import Creatives**.

- To build a creative, click ![Tasks](tasks.png) and select the creative type.
  
  - **HTML**: Edit the HTML source, embed content from a URL, embed assets, and add merge tags to personalize the creatives. HTML creatives are used for web and email tasks.
  
  - **Recommendation**: Specify the information that a web task needs before the task can deliver personalized recommendations. A recommendation creative specifies the URL template that you want a task to use when making product recommendations.

  - **Mobile In-App Message**: Build the creatives that are displayed while a user is active within your mobile application.

  - **Mobile Push Notification**: Build the creatives that are used in a push notification.
Work with Messages

Messages give you a way to group creatives. In a message, you might add all of the creatives that are associated with a campaign, even though the creatives are designed for different channels. You can also import treatment offers from external applications to be used as messages. Messages can be added to plans and tasks.

Add Creatives

1. From the navigation bar, click Messages.
2. Click .
3. Navigate to the Creative tab to add creatives or import assets as creatives.
4. (Optional) Navigate to the Properties tab to add properties to the message.

Note: You can add different creative types to a message. However, the Recommendation creative type is available only after a URL template has been created in General Settings ➔ Analytic Settings ➔ Recommendation Task.

Only creatives that have a Ready or Published status can be used by tasks. You can update the status of a creative, rename the creative, or remove the creative from within the message. To access actions related to a creative from within a message, click .

Remove Creatives

Deleting a creative removes the creative from the message but not from SAS Customer Intelligence 360.

1. Click  on the creative.
2. Click Delete.

Note: A creative that is deleted from a message can still be accessed from the Creatives page.

Information about the Message

The Orchestration tab displays a list of the items that are associated with the message. For example, you can see which tasks use the message or which creatives are used in the message.

If you want to specify information about the message, such as a description and message type, navigate to the Properties tab.
Delivering Content

Create, Update, or Delete Tasks ........................................ 60

Work with Spots ........................................................................ 60
  Create a Spot ........................................................................ 60
  Copy a Spot .......................................................................... 61
  Manage a Spot .................................................................... 61

Create and Personalize Email Content ...................................... 61

Deliver Emails ......................................................................... 61
  Create an Email Task ............................................................ 61
  Add Content to Your Task .................................................... 62
  Define Email Header Information ......................................... 68
  Previewing and Testing Email Content ................................... 68
  Add a Target Audience ......................................................... 69
  Set Metrics ........................................................................... 69
  Deliver Your Task ................................................................. 70
  Add Task to an Activity ........................................................ 72
  End the Task .................................................................... 72

Deliver Content to a Mobile Spot ............................................... 72
  Add Content to Your Task .................................................... 72
  Set Distribution of Content .................................................. 72
  Set Impression Limits ............................................................ 74
  Add a Target Audience ........................................................ 74
  Set Metrics ........................................................................... 75
  Set the Priority of Your Task ................................................ 75
  Schedule and Start Your Task ................................................ 75
  End the Task .................................................................... 77

Deliver Mobile In-App Messages ............................................... 77
  Add Content to Your Task .................................................... 77
  Set Impression Limits ............................................................ 77
  Add a Target Audience ........................................................ 78
  Set Metrics ........................................................................... 78
  Set the Trigger Event for Your Task ....................................... 78
  Set the Priority of Your Task ................................................ 78
  Schedule and Start Your Task ................................................ 79
  End the Task .................................................................... 80

Deliver Mobile Push Notifications ............................................ 80
  Add Content to Your Task .................................................... 80
  Add a Target Audience ........................................................ 81
  Set Metrics ........................................................................... 81
  Schedule and Start Your Task ................................................ 81
  End the Task .................................................................... 82
Create, Update, or Delete Tasks

This video tutorial for SAS Customer Intelligence 360 explains how to create, update, or delete tasks. See the video here: Create, Update, or Delete Tasks.

Work with Spots

A spot is the place on a mobile application or web page where a task delivers content. When you create a spot, you specify the location on a mobile application or web page where you want content to appear. You can also define spot attributes for use in data collection and task targeting. When you create a task, you select the spot that you want the task to deliver content to.

Create a Spot

1. From the navigation bar, click Spots.
2. Click.$\text{Create Spot}$.
3. Select the spot type.
   - Select Mobile to define the place in a mobile application where a message is displayed.
   - Select Web to define the place on a web page where creatives are displayed.
   - Select Web Single-Page Set to create a set of spots on a single web page. Use single-page sets to coordinate the delivery of your content to multiple same-page spots at once.
   - Select Web Multi-Page Set to create a set of spots on different web pages. Use multi-page sets to coordinate the delivery of your content to multiple spots on different pages.
4. Select the spot location.
5. Update the properties of the spot by navigating to Spot Details $\Rightarrow$ Spot Configuration. For example, you can edit the spot identification, location, or dimensions.
6. Add additional spot attributes by selecting Spot Details $\Rightarrow$ Spot Attributes.
7. Navigate to the Default Content tab and activate the switch to add default content to your spot. Specifying default creatives ensures that content is displayed in your spot even if the spot is not used in an active task.
8. Navigate to the Orchestration tab and select either Mark Ready or Mark Ready and Publish. This action makes your spot available to a task.
   A Ready status indicates that the spot is ready to be published with a task. When someone publishes a task that uses a Ready spot, that person is prompted to confirm that the spot should be published along with the
task. Spots with a Ready status can be changed back to a Designing status by clicking Return to Designing. Changing the status prevents the spots from being published by a task.

To move a spot from a Ready status to an Active status, click Publish. Spots with an Active status cannot be changed back to Designing. A spot with an Active status does not prevent a task from publishing.

Note: To see which tasks use a spot, navigate to the Orchestration tab of that spot.

Copy a Spot

1. From the navigation bar, click Spots.
2. Click the check box next to a spot to select it.
3. Click \ and select Copy.
4. Enter a name for a spot. For mobile spots, enter a unique ID. For web spots, enter a selector.

Manage a Spot

While your spot is active, you can monitor its performance on the Insights tab. You can use the information to gauge how much traffic your spot is getting, which can help you determine whether your spot is in a good location.

Click End from the Orchestration tab to change the status from Active to Complete. Completed spots cannot be used in a task and cannot be modified. Ending a spot stops any associated data collection and makes the spot's content unavailable. In addition, any unsaved changes to the spot are lost.

Note: If you complete a spot that is associated with an active task, then that active task is also completed. If you complete a spot that is associated with an active task that is part of an activity, then both the task and the activity are completed. As a result, all data collection ends for these items. In addition, any spot sets that use the spot are also completed. Content cannot be delivered to completed spots. As a result, any unpublished tasks that use the completed spot need to be updated to use a different spot before the tasks can be published.

Create and Personalize Email Content

Learn how to create and personalize email content. Email content includes the layout, message, and creatives that you want to deliver in an email task.

See the video here: Create and Personalize Email Content.

Deliver Emails

Learn how to deliver content to your recipient’s inbox by creating email tasks.

Create an Email Task

1. From the navigation bar, click Tasks.
2. Click \ and select Email to deliver content through the email channel.
3 You can determine whether the task delivers all content at the same time or when event conditions are met. Select a delivery type to specify how the task delivers content:

- Click **Bulk** to deliver messages at the same time. You specify the schedule on the **Orchestration** tab. A bulk task can be used as the Start task in an activity.

- Click **Triggered** to add a trigger event. You can add a trigger event on the **Trigger** page on the **Orchestration** tab. You can also specify criteria and values to add attribute conditions for the event. Content is delivered when all of the conditions are met.

4 Select one of these methods to build your layout. An email layout contains text, images, creatives, and HTML content.

- Select **Design your own layout** to build a new layout.

- Select **Use saved layout** to use an existing layout in HTML format.

5 To use a saved layout, select a layout. Click **Done**, and then click **Create Task**. A new task is created.

### Add Content to Your Task

All the content that your task delivers in an email is specified on the **Content** tab. Email content includes the layout, message, and creatives that you want to deliver in an email task.

### Manage Content

All the content that your task delivers in an email is specified on the **Content** tab. On the **Content** tab, use these icons to manage your content:

- Click **Layout** to display the **Layout** pane. In the **Layout** pane, you can perform these actions:
  
  - Select a check box for the content type from these options: **HTML** or **Plain Text**. To send emails that include both HTML and plain text content types, select both check boxes. Next, click a content type to select it. Based on the content type that you select, the relevant Edit buttons are displayed. Click an Edit button to open an editor window:
    
    - Click **Edit Content** to open a drag-and-drop editor.
    - Click **Edit HTML Code** to open an HTML editor.
    - Click **Edit Plain Text** to open a plain text editor.
  
  - Note: To meet legal requirements, you must provide a valid option for recipients to unsubscribe from receiving further emails.

  Click **Select Content** to select a saved template. Click **Save as Template** to save a layout as a reusable template.

- Click **Content Selection** to view the number of content blocks in the email content.

- Click **Personalization** to display the **Content Selection** pane. In the **Content Selection** pane, click **Select Content** to select a message or creative. If you selected a message with more than one creative, in the **Select Creatives** section, select the creatives that the task displays.

  - Note: **Personalization** is enabled when you add a content block to the layout.

- Click **Personalization** to display the **Personalization** pane. If the content block contains more than one creative, you can set rules to personalize each creative for a subset of the target audience.

  - Note: **Personalization** is enabled when you add a content block that contains more than one creative.
Edit Content in the HTML Editor

You have the option to modify and customize your email content by using the HTML editing capabilities in an email task. Complete these actions:

1. In the Layout pane, select the check box for the HTML content type.

   **TIP** To send emails that include both HTML and plain text content types, select both check boxes.

2. Click the HTML content type to select it. Based on the content type that you select, the relevant Edit buttons are displayed.

3. Click Edit HTML Code to open an HTML editor.

4. In the Edit HTML Code window, click in the HTML Editor to edit the email.

   Click Update Preview to preview your changes or to refresh the preview. Click Done to implement your changes and exit the window.

   Note: You cannot preview your changes after you exit the window.

Edit Content in the Plain Text Editor

You have the option to modify and customize your email content by using the plain text editing capabilities in an email task. For help with setting up the plain text editor, contact your SAS technical consultant.

Complete these actions:

1. In the Layout pane, select the check box for the Plain Text content type.

   **TIP** To send emails that include both HTML and plain text content types, select both check boxes.

2. Click the Plain Text content type to select it. Based on the content type that you select, the relevant Edit buttons are displayed.

3. Click Edit Plain Text to open a plain text editor.

4. In the Edit Text Content window, enter your plain text email content.

Edit Content in the Layout Manager

You have the option to modify and customize your email content by using the drag-and-drop editing capabilities in an email task. Complete these actions:

1. In the Layout pane, select the check box for the HTML content type.

   **TIP** To send emails that include both HTML and plain text content types, select both check boxes.

2. Click the HTML content type to select it. Based on the content type that you select, the relevant Edit buttons are displayed.

3. Click Edit Content to open a drag-and-drop editor.

4. In the Layout Manager window, you can add or edit these types of email content:
   - Multiple Columns
You can preview how your email content is displayed on multiple devices. To preview the content, click Responsive Previews.

On the Responsive Previews page, you can resize or preview the email content.

- Click and drag to resize the preview pane and preview how the content renders at different screen widths.
- Click to preview how the content renders on a mobile screen; click to preview how the content renders on a tablet screen; and click to preview how the content renders on a desktop screen.

If you added content, to save your content changes and continue working in the Layout Manager, click and select Save Task. To exit the Layout Manager, click OK.

**Set Preview Text**

You can set the text that is displayed with the subject of an email message. Enter text in the Preview text field, in the General Layout Settings pane.

Preview text is displayed in your recipient’s inbox. If you do not add the preview text, the beginning of your email body text is displayed as the default preview. The number of characters that are displayed depends on the email client.

Click to add a merge tag to the preview text.

**Specify a Background Color for the Layout**

You can specify a background color for the layout to align to the color scheme of your organization or to a seasonal event. In the Layout Manager, specify Layout Background Color in the General Layout Settings pane. Click the color swatch and select from the Basic or Custom colors.

Note: The General Layout Settings pane is displayed when the layout is in zero state, or when you have not selected any content element in the existing layout.

**Specify Default Settings for Text Formatting**

You can set defaults for text formatting so that each time you add a Text block, you do not need to format it. In the Layout Manager, specify Default Text Settings in the General Layout Settings pane.

**Add Text**

Add and Edit Text

Use a drag-and-drop operation to move a text block onto the layout. Click inside the text block to insert text. Modify the attributes of the selected text block in the Text Settings pane.

To copy formatted text from an external source and paste it without the source formatting, right-click and select Paste without source formatting. Paste the text in the Paste window by using the keyboard shortcut (Ctrl
Add a Hyperlink

A hyperlink directs recipients to a web page that displays content.

1 Use a drag-and-drop operation to move a text block onto the layout.

2 Enter text. For example:
   
   To view product details, click here.

3 Select the word or words that you want to hyperlink. In this example, select the word here.

4 In the Text Settings pane, click ▶️.

5 In the Link window, the Link Info tab is displayed by default.

6 In the Link Type field, make sure that the URL option is selected from the drop-down list. In the Protocol field, make sure that the http:// option is selected from the drop-down list.
   
   Select <other> as the protocol if you are using merge tags in the URL.

7 In the URL field, enter the URL for the web page that you want to direct your recipients to.

8 Click OK. The word here now contains a hyperlink. When the link is clicked, it loads the web page URL that you specified in your default browser.

Add a Merge Tag to Personalize Text

A merge tag enables you to insert a data item from the customer data or behavioral data. When the message is delivered, the merge tag is resolved to personalized information about each recipient that is retrieved from the data hub and inserted as a value.

In the text block, position your cursor where you want to insert a merge tag. In the Text Settings pane, click ▶️.

In the Select Merge Tag window, a merge tag that you select can resolve to a regular text value or a conditional text value for each recipient. Select a merge tag and select one of these options:

- Select Insert text from a merge tag value to insert a regular text value. For example, you select the merge tag, “Customer Name”.

- Select Specify a condition based on a merge tag value to specify a conditional text value. For example, you select the merge tag, “Customer Gender” and specify a basic condition, “if Merge tag value = Female, then Text = Dear Madam”.

In the Default value field, add a value. The merge tag inserts the default value if the customer data is missing, or if the condition that you specified is not satisfied.

Add an Image

Drag an Image from the Layout Gallery to the page. In the Image Settings pane, click ▶️ to select an image.

In the Select Image window:

- Select From Assets and click ▶️ to select a static image from the Assets repository in SAS Customer Intelligence 360. Only assets that are enabled for sharing with external users are available for selection.

  (Optional) To specify the image source, click the Content source drop-down list and select an option:

  □ Select SAS Digital Asset Management to add assets from the internal repository in SAS Customer Intelligence 360. This option is selected by default.
Select Third Party CMS to add assets from an external content management system (CMS) that is integrated with SAS Customer Intelligence 360.

Only assets that are enabled for sharing with external users are available for selection from SAS Digital Asset Management.

When you select an image, the URL in the email content refers to the location of the image that is published on the external content delivery server.

Select From URL and enter a URL, or click and select a merge tag that resolves to a personalized image URL based on recipient data. You can select a merge tag from data tables in the data hub or from event attributes.

You can add a merge tag to insert a value for the whole URL, or a part of the URL.

Note: Ensure that the image URL is correct and accessible when the email is delivered. The URL must be acceptable to the application server that hosts the content at the desired location.

It is recommended that you add a default image URL in the Select Merge Tag window.

Note: When a task has a Design status, URLs that use merge tags might not be fully resolved to the site or content that they represent. The Layout Manager displays a place-holder image. You can modify the image attributes but you cannot preview the actual image. However, you can save and publish the task in this state.

In the Image Settings pane, customize the design attributes of the image.

Add a Button
Drag a Button from the Layout Gallery to the page. In the Button Settings pane, customize the design attributes of the button and button text.

Add a Horizontal Line
Drag a horizontal line from the Layout Gallery to the page. In the Horizontal Line Settings pane, customize the attributes of the horizontal line.

Add a Content Block
Complete these steps:

1. Drag a Content Block from the Layout Gallery to the page. A content block can contain one or more creatives. Multiple creatives can be personalized for different subsets of the target audience.

2. Click and then click Select Content to select a message or creative.

3. If you selected more than one creative, click .

4. In the Rule-based Settings: Content Block window, select each creative and add criteria to specify which subset of the target audience receives the selected creative.

5. In the Content Block Settings pane, customize the design attributes of the content block.

TIP If you inserted a content block inside a multiple columns block, a recipient who does not meet any targeting criteria will receive an email message without a personalized creative. This might result in a blank space. To ensure proper design and that all users receive a creative, at the end of the list add a default creative that does not contain targeting criteria.

Add View-on-Web Text
Add View-on-Web Text with a hyperlink that recipients can click to view email content in a web browser.
1 Use a drag-and-drop operation to add View-on-Web Text, which contains some default text with a hyperlink. For example: To view this email in your web browser, click here. In the example, the word here contains a hyperlink.

2 Click View-on-Web Text and use the icons in the View-on-Web Text Settings pane to edit, format, and customize the default text.

For more information about editing text, see “Add and Edit Text” in SAS Customer Intelligence 360: User’s Guide.

Note: Recipients can see the View-on-Web Text only when the message is viewed in the email client. View-on-Web Text is not displayed when the message is viewed in the browser.

Add a Multiple Columns Block

A Multiple Columns block is a container into which you can drag any of the content elements from the Layout Gallery, except another Multiple Columns block. Use a drag-and-drop operation to move a Multiple Columns onto the page and add content elements. When you add a Multiple Columns block, you select the number of columns that you want in the Select Multiple Columns window.

To add content to a column in a Multiple Columns block, drag a content element from the Layout Gallery to the page. Select each content element that you inserted in the Multiple Columns block to view and edit settings.

Use the Multiple Columns Settings pane to customize the Multiple Columns block.

Add or Edit Opt-out Text

By default, an email layout contains opt-out text. You can set up an unsubscribe option for email recipients by inserting a link in the opt-out text that directs recipients to a page on your website with a mechanism to unsubscribe. Select the Opt-out Text and use the icons in the Opt-out Text Settings pane to edit, format, and customize the default text. For more information about editing text, see “Add and Edit Text” in SAS Customer Intelligence 360: User’s Guide. You can add one or more opt-out text blocks.

To meet legal requirements for email marketing, you must provide recipients with an option to unsubscribe from receiving further emails. Therefore, do not delete the opt-out text.

Create Responsive Email Content

You can display variants of email content in response to the recipient’s device by using the media queries technique in Cascading Style Sheets (CSS). In the Layout Manager, add a content element from the Layout Gallery and click Edit Styles and Preview. In the Edit Layout Styles and Preview window, click in the CSS editor to add or edit the styles and style properties for the CSS classes. To preview changes, click Update Preview.

Click to preview how the content renders on a mobile screen, click to preview how the content renders on a tablet screen, and click to preview how the content renders on a desktop screen.

Save a Layout as a Reusable Template

You can save an email layout as a reusable template:

1 After you add content to your layout in the Layout Manager, in the Layout pane, click Save as Template.

2 In the Save as Template window, specify a unique name and save the layout as an HTML asset.
Set Impression Limits

You can set impression limits to limit the number of times that users receive email content when an email task is triggered in response to multiple event occurrences in an activity.

To limit the number of times an email is sent to a user, click to display the Impression Limits tab.

- Select **Limit total impressions per user** to specify the total number of email impressions that a user receives. This limit is valid for the duration of this task.
- Select **Limit impressions per user by period** to specify the maximum number of email impressions that a user receives.
- Select **Limit impressions per user by period** to specify the maximum number of email impressions that a user receives during a specified time interval (for example, minutes, hours, days, or months).

Define Email Header Information

On the **Header** tab, complete these fields:

**Subject**

Enter a subject line for your email. You can select a merge tag to personalize this field.

**To**

By default, the **To** field is populated with a merge tag `%%email_contact%%` that automatically retrieves the email addresses of your recipients from the data source.

**From**

From the drop-down list, select a **From address** or **From domain** that is added for the send agent on the **New Send Agent** page.

**Reply-to**

From the drop-down list, select an approved **Reply-to address** or **Reply-to domain** that is added for the send agent on the **New Send Agent** page.

**Note:** The send agent that is selected on the **Orchestration** ➔ **Delivery** page determines the values for the **From** and **Reply-to** fields.

To personalize an email header field, click 📝. In the **Select Merge Tag** window, select a merge tag. In the **Default value** field, define a default value for the merge tag and click **OK**.

The field is populated with personalized information about each recipient from the data source.

Previewing and Testing Email Content

Preview Email Content

You can preview how your email content is displayed on multiple devices, browsers, email clients, and platforms. To preview the content, click **Multiple-Client Previews**, and then click **Run**.

When the test is complete, you can search the results for platform, client, or an application such as a browser. For example, you can enter `Web.de` in the **Search** field to find previews on the Web.de web client.

If you have content blocks in your email messages, the preview displays the default creatives. You can select an individual preview and expand it. Within the expanded preview, you can choose whether to view the creatives, suppress them, or view them as thumbnails.

The **Previews run** field displays the count of previews that were run.
Run a Spam Test

You can test whether your email content will be flagged as spam. To test the content, click Spam Test, and then click Run.

The Spam tests run field displays the count of spam tests that were run.

Preview and Test

To preview the email and run the spam test, click Overview, and then click Run All. To view the results, navigate to the Preview Email or Spam Test pages.

You can configure the time limit for the test to run. By default, the configured time duration for the test to run is five minutes. Tests that run beyond the configured time limit are terminated. For more information contact your SAS account manager.

The count of total tests run indicates the total number of previews and spam tests that were run from the Review tab, within the organization, by all of the users.

Add a Target Audience

On the Targeting tab, define the target audience for the content that the task delivers.

1. Add criteria to the Eligible page to specify which people to include in your target audience.
2. Click . In the Select Criteria window, select a set of users to include.
3. Depending on the selected target audience for a bulk email task (customer data) or a triggered email task (trigger event data), data items from the recipient data in transient files are available for selection as merge tags for personalization.
   - For a bulk email task, you can select recipients from one of these sources:
     - a segment that is created from existing customer data
     - an imported list
     - a transient file that contains data in temporary tables
4. In the Select Criteria window, click to display a hierarchical folder view of criteria. You can expand and collapse individual folders. Click to expand all of the folders. Click to collapse all of the folders.
5. Click to display individual criteria in alphabetical order.
6. Search for criteria by entering the name in the Search field. Select criteria and click to display details.

Set Metrics

To add primary and secondary metrics:

1. Click Add Primary Metric.
2. Click .
3. Select the criteria that you want to add. You can select an event view or a data view.
4. If attributes are defined for the event or data view, select the attribute conditions that must be met. For example, for a Click Through metric, you can select a particular creative as an attribute condition. The primary metric would be a click-through response to that creative.
Note: Attributes are joined by an AND operator. Make sure that you do not define conflicting attributes that result in a condition that cannot be met.

5 To mark this selection as a contact or response that can be tracked and used for reporting and future targeting, select **Classify this selection**. Classifying an event or data view enables you to compare contacts and responses across creatives and channels. You can personalize future messages and creatives. You can also use the information to segment customers. You can classify events and data views in both primary and secondary metrics.

To record the number of times that a customer interacts with a creative or a spot, select **Mark this selection as a contact**. This information is available as contact history for SAS Marketing Automation, SAS Real-Time Decision Manager, and other applications.

To mark this selection as a response to a creative, select **Mark this selection as a response**.

6 Click **Add Secondary Metric** to add a secondary metric.

To change the settings for an existing metric, click next to the metric. Click **** to remove a metric from the **Insights** tab.

**Deliver Your Task**

**Schedule and Start Your Task**

When you finish updating your task, you can mark the task ready, publish the task immediately, or set a schedule for the task.

On the **Orchestration** tab, take these actions:

- Click **No schedule** if you plan to publish the task manually.
- Click **Set a schedule** to set a time period that the task is active.
  - Select a time zone. For example, you might want to select a time zone that is different from the default if the task is targeted to a specific locale. By default, the time zone is the same as the time zone that is set for the tenant. If a valid time zone is not set for the tenant, the default time zone is UCT.
  - Click **Single occurrence** to specify a single time span that the task is active.
  - Select a start date and an end date for the task.
    - Note: If you select **Single occurrence**, the start date cannot be edited after the task is published.
  - Click **Recurrence** to specify a recurring task. Click ****:
    - Specify these details for a recurring schedule:
      - **Start time** is the start time for the first occurrence.
      - **Duration** specifies the amount of time that the content is available for each occurrence. For example, a task might start every week on Monday, and continue for four days.
      - **Frequency** specifies that the schedule for the recurrence. If you click **Weekly**, click the day for each occurrence. You can select multiple days in each week. If you click **Monthly**, select the numbered day or the weekday for the recurrence. For example, you can select the 10th day of each month or the second Tuesday of each month.
        - Note: You can edit the weekly or monthly frequency after the task is published and the start date has passed. The recurrence must occur within the start and end dates.
      - **Range of recurrence** specifies the start and end dates, or that the recurrence continues without an end date.
Extend metrics analysis continues collecting data after the last occurrence. Select the number of days to extend data collection. The default value is 7 days. For example, if you use the default value, and the start time is 9:00 PM, data collection continues until 9:00 PM seven days after the End by date.

Customers might respond several days after the last occurrence. You can extend the time for data collection in order to more effectively measure task performance.

During the extended period of data collection, the status is Active - Metrics Only. The status changes to Complete when the Extend metrics analysis period is over.

Select Mark Ready to change the status from Designing to Ready. A Ready status indicates that this item is ready to be published. When you are ready to promote an item from a Ready status to an Active status, click Publish.

Note: When you publish an item, you are prompted to publish any dependent items that are marked Ready.

Items with a Ready status can be changed back to a Designing status by clicking Return to Designing. Changing this status to Designing prevents the item from being published.

Note: If your item has a Ready status and a start date, the item is not automatically published when the start date is reached. For example, if you are creating a task, it must be published in order for the start date to activate the task.

Select Mark Ready and Publish to change the status from Designing to Active. Items with an Active status cannot be changed back to Designing.

Changes to a scheduled or active task are not automatically propagated to the published version of the task. You must republish the task after you save it to resolve the Out of Sync status. Otherwise, the task stays out of sync with the published version and the updates are not delivered.

When the end date of a task is reached, its status changes to Complete. Completed tasks cannot be modified. The task stops any associated data collection and makes the task's content unavailable. In addition, any unsaved changes are lost.

Note: A recurring schedule is not available if the task is included in an activity.

Select a Send Agent

A send agent represents a connection to an outbound mail server for the delivery of emails.

Navigate to Orchestration ➔ Delivery, and then select a send agent from the drop-down menu.

Configure Unsubscribe Settings

To receive unsubscribe requests from recipients through an email reply, you can configure unsubscribe settings for a tenant or for a single task. In an email task, you can override the unsubscribe settings that you configured for a tenant.

To configure unsubscribe settings in an email task, select Orchestration ➔ Delivery.

Select an option to configure unsubscribe settings:

- If you do not want to receive unsubscribe requests through an email reply, select Disable unsubscribe requests through email reply.
- If you want to receive unsubscribe requests through an email reply, select Enable unsubscribe requests through email reply.

If you select Enable unsubscribe requests through email reply, specify one or more keywords that the subject text of the email reply must contain to process the unsubscribe requests. If an email reply from your recipient contains any of the keywords that you specified, the system processes the unsubscribe request.
Add Task to an Activity

To publish the task as part of an activity, add it to an activity. When the task is published, the emails are delivered to the target audience that is defined by the activity. The status of the task changes to Active, and it collects data.

End the Task

When your task is running, it collects data and gathers information about progress toward your metrics. Navigate to the Insights tab to check the progress of your task.

Click End on the Orchestration tab when you no longer need the task to deliver content or when the scheduled end date is reached. The status changes from Active to Complete. Completed tasks do not collect new data, do not deliver content to a spot, and cannot be modified. Any unsaved changes to the task are lost.

Deliver Content to a Mobile Spot

Mobile spots enable you to display a message on a specific spot within a mobile application.

Add Content to Your Task

1. From the navigation bar, click Tasks.
2. Click and select Mobile Spot to deliver content to a mobile application.
3. Select the location where you want your content to be displayed. Click Create Task.

Navigate to the Content tab of your task and complete these actions:

- You can add a spot to the task. While you are designing your task, you can see information about the spot by clicking to open the Spot page. On the spot page, click to change the spot where your content is displayed. You can select an existing spot, or you can click New Spot to create one. The spot that you create is automatically added to the task.
- Click .
- Click Select Content to add a message or creatives to the task. If there is more than one creative, in the Select creatives section, select which creatives the task displays.

Set Distribution of Content

If this task contains more than one creative, you can refine how each creative is displayed. Click to open the Distribution tab and select the method that you want the task to use when determining how to display content.

Frequency Distribution

Select Frequency to specify how often a creative is displayed compared with the other creatives in this task. Next, set a percentage for each creative.

Note: Frequency is the default distribution method. By default, each creative is assigned equal distribution.
Sequential Distribution
Select **Sequential** to set the order in which the creatives are displayed.

**CAUTION! The order is reset every 24 hours.** After 24 hours the order is reset, and the first creative in the sequence is selected again. If the content delivery schedule for your task is longer than 24 hours, the creatives might not be displayed in the order that you have specified.

Rule-based Distribution
Select **Rule-based** to split a task’s target audience into subgroups and associate a creative with each subgroup, thereby personalizing the content that your target audience sees. You can assign different criteria to each creative so that you can decide which creatives are delivered to different subgroups of the target audience.

**Note:** When you select the rule-based option, the criteria that you add to each creative are applied after the criteria on the **Targeting** tab are applied. Think of rule-based criteria as a way of refining which members of the task’s target audience see specific creatives.

Each creative is assigned a number that indicates the order in which the creative’s targeting criteria are evaluated. The creative that has the number 1 associated with it is evaluated first. The first creative with criteria that match a user is the creative that is delivered to that user. As a result, any creatives that come after the matching creative are not evaluated.

You can change the numbers that are associated with a creative by changing the position of the creative in the list. To change the creative order:

1. Click from the **Distribution** pane.
2. Select the creative that you want to move.
3. Click the arrows to move the creative up or down in the list.

A best practice is to ensure that there is always a creative that is displayed in your spot. For Web and Mobile Spot tasks, there are two ways to ensure that a spot that this task delivers content to is never empty.

- Your task includes a spot that contains a default creative.
- The creative in the rule-based creatives list that comes last (that is, the creative associated with the highest number) does not contain additional targeting. A creative that is listed last and does not have additional criteria associated with it is displayed when none of the previous criteria match the task’s audience member.

The creative that does not contain additional criteria becomes the default creative for this task. The default creative is denoted by 🌟. As a result, any creatives listed after the default creative are never delivered.

**Note:** When you create a Mobile In-App Message or Mobile Push Notification, you must denote one creative as the default creative.

To add targeting criteria to each creative, select the creative and follow these steps:

- Select **All of the following** to include members who meet all of the criteria in a group. Or, select **Any of the following** to include members who meet one or more of the criteria in a group.
- Click 📊 to view a summary of the criteria.
- Click 📊 to make a copy of the criteria.
- Click ✆ or 👇 to move criteria up or down in the list.
- Click ✏️ to create a group for a set of criteria.
- Click ✍️ to add criteria. In the **Select Criteria** window, select the criteria to add. In addition, you can use customer lists that have been imported from other sources, such as SAS Marketing Automation.
Note: For mobile in-app, mobile spot, and web targeting, when you add Browser and Device to your criteria, only the people who are using that browser or device during the current session are included in the target audience. For example, if you add Chrome as the browser, only the people who are using Chrome during the current session are eligible to be included in the target audience.

When you add a spot attribute that contains a URL query string parameter, the value of that parameter needs to be decoded for multi-byte character sets (MBCS). If you are adding a URL query string, the value should be encoded for MBCS.

Set Impression Limits

Click ≥ to limit the number of times a customer sees your content.

- Select Limit total impressions per user to specify the total number of times a creative is displayed to a customer. This limit is valid for the duration of this task.
- Select Limit impressions per user by period.
  - Select Time period to specify the maximum number of impressions that a user sees during a specified time interval (for example, minutes, hours, days, or months).
  - Select Session to limit the number of impressions that a user sees while interacting with content, such as your website or mobile app. By default, the session is set to expire after 30 minutes of inactivity, but you can contact a SAS representative to modify this value.

Add a Target Audience

On the Targeting tab, set the criteria that define the target audience for the content that the task delivers. Previously defined segments, events, and data views can be selected as criteria.

Note: You must define a login event type if you have tasks that depend on segments with data from logged-in users.

Criteria can be used to include or exclude people from the target audience.

- Add criteria to the Eligible page to specify which people to include in your target audience.
- Add criteria to the Exclusions page to specify which people to exclude from your target audience.

If no criteria are added to either the Eligible page or the Exclusions page, then the target audience consists of everyone.

To add eligibility or exclusion criteria:

- Select All of the following to include members who meet all of the criteria in a group. Or, select Any of the following to include members who meet one or more of the criteria in a group.

- Click ≥ to view a summary of the criteria.

- Click ≥ to make a copy of the criteria.

- Click ↑ or ↓ to move criteria up or down in the list.

- Click [ ] to create a group for a set of criteria.

- Click + to add criteria. In the Select Criteria window, select the criteria to add. In addition, you can use customer lists that have been imported from other sources, such as SAS Marketing Automation.

Note: For mobile in-app, mobile spot, and web targeting, when you add Browser and Device to your criteria, only the people who are using that browser or device during the current session are included in the target audience. For example, if you add Chrome as the browser, only the people who are using Chrome during the current session are eligible to be included in the target audience.
When you add a spot attribute that contains a URL query string parameter, the value of that parameter needs to be decoded for multi-byte character sets (MBCS). If you are adding a URL query string, the value should be encoded for MBCS.

Note: Depending on the task type, you can select only one segment on the Eligible page, and one segment on the Exclusions page. If you do not add criteria, no content is delivered.

Set Metrics

Metrics measure events that the system can detect such as a person clicking on a spot on a device. On the Insights tab, add primary and secondary metrics to measure the success of the content being delivered by the task.

A primary metric is the leading measure for the success of the task. A secondary metric measures other benchmarks that you are interested in. A task must have one primary metric. A task can have multiple secondary metrics. Each secondary metric can have only one data view or event.

By default, a task is created with a primary metric. To add another primary metric:

1. Click ÷.
2. Select the criteria that you want to add. You can select an event view or a data view.
3. If attributes are defined for the event or data view, select the attribute conditions that must be met. For example, for a Click Through metric, you can select a particular creative as an attribute condition. The primary metric would be a click-through response to that creative.
   
   Note: Attributes are joined by an AND operator. Make sure that you do not define conflicting attributes that result in a condition that cannot be met.
4. Select Stop delivery after conversion to stop delivering creatives when the primary metric for the task is met.

   When delivery of the creatives stops, that same spot might switch to displaying creatives from another task. If there is no other task delivering a creative to that spot, then the spot's default creative is displayed. If there are no other tasks delivering content to that spot and there is no default content defined for that spot, then the spot is empty.
5. Click Add Secondary Metric to add a secondary metric.

Set the Priority of Your Task

1. Navigate to Orchestration ➤ Priority.
2. Select the 1 (Highest) option to give your task priority over all other tasks that deliver content to the same spot. The content of the task with the highest priority is displayed.

   Note: Mobile Spot A/B test tasks have higher priority than Mobile Spot tasks. For example, if you have a Mobile Spot task and a Mobile Spot A/B test task that deliver content to the same spot, the A/B test task always delivers its content, no matter what the priority is of the Mobile Spot task.

Schedule and Start Your Task

When you finish updating your task, you can mark the task ready, publish the task immediately, or set a schedule for the task.

On the Orchestration tab, take these actions:
Click **No schedule** if you plan to publish the task manually.

Click **Set a schedule** to set a time period that the task is active.

- Select a time zone. For example, you might want to select a time zone that is different from the default if the task is targeted to a specific locale. By default, the time zone is the same as the time zone that is set for the tenant. If a valid time zone is not set for the tenant, the default time zone is UCT.

- Click **Single occurrence** to specify a single time span that the task is active.

- Select a start date and an end date for the task.

  **Note:** If you select **Single occurrence**, the start date cannot be edited after the task is published.

- Click **Recurrence** to specify a recurring task. Click **Recurrence**.

  Specify these details for a recurring schedule:

  - **Start time** is the start time for the first occurrence.
  - **Duration** specifies the amount of time that the content is available for each occurrence. For example, a task might start every week on Monday, and continue for four days.
  - **Frequency** specifies that the schedule for the recurrence. If you click **Weekly**, click the day for each occurrence. You can select multiple days in each week. If you click **Monthly**, select the numbered day or the weekday for the recurrence. For example, you can select the 10th day of each month or the second Tuesday of each month.

  **Note:** You can edit the weekly or monthly frequency after the task is published and the start date has passed. The recurrence must occur within the start and end dates.

  - **Range of recurrence** specifies the start and end dates, or that the recurrence continues without an end date.

- **Extend metrics analysis** continues collecting data after the last occurrence. Select the number of days to extend data collection. The default value is 7 days. For example, if you use the default value, and the **Start time** is 9:00 PM, data collection continues until 9:00 PM seven days after the **End by** date.

  Customers might respond several days after the last occurrence. You can extend the time for data collection in order to more effectively measure task performance.

  During the extended period of data collection, the status is Active - Metrics Only. The status changes to Complete when the **Extend metrics analysis** period is over.

Select **Mark Ready** to change the status from Designing to Ready. A Ready status indicates that this item is ready to be published. When you are ready to promote an item from a Ready status to an Active status, click **Publish**.

**Note:** When you publish an item, you are prompted to publish any dependent items that are marked Ready.

Items with a Ready status can be changed back to a Designing status by clicking **Return to Designing**. Changing this status to Designing prevents the item from being published.

**Note:** If your item has a Ready status and a start date, the item is not automatically published when the start date is reached. For example, if you are creating a task, it must be published in order for the start date to activate the task.

Select **Mark Ready and Publish** to change the status from Designing to Active. Items with an Active status cannot be changed back to Designing.

Changes to a scheduled or active task are not automatically propagated to the published version of the task. You must republish the task after you save it to resolve the Out of Sync status. Otherwise, the task stays out of sync with the published version and the updates are not delivered.

When the end date of a task is reached, its status changes to Complete. Completed tasks cannot be modified. The task stops any associated data collection and makes the task's content unavailable. In addition, any unsaved changes are lost.
Note: A recurring schedule is not available if the task is included in an activity.

End the Task
While your task is running, it collects data and gathers information about progress toward your goals. Navigate to the Insights tab to check the progress of your task.

Click End on the Orchestration tab when you no longer need the task to run or when the scheduled end date is reached. The status changes from Active to Complete. Completed tasks do not collect new data, do not deliver content to a spot, and cannot be modified. Any unsaved changes to the task are lost.

Deliver Mobile In-App Messages
In-app messages are notifications that are displayed while the user is active in the application itself.

Add Content to Your Task
1. From the navigation bar, click Tasks.
2. Click 📌 and select In-App Message to deliver content to a mobile application.
3. Select the application where your message will be delivered. Click Create Task.

All of the details and items associated with the content that your task delivers are specified on the Content tab. In the properties pane of the Content tab, use the icons to change the spot, message, and creatives that the task uses. You can also set the distribution and impression limits for the creatives or add targeting criteria to each creative associated with the task.

1. On the Content tab, click 📌.
2. Click Select Content to add a message or creatives to the task. If there is more than one creative, in the Select creatives section, select which creatives the task displays.

Note: Instead of selecting an existing message or creative to add to the task, you can choose to create a message or creative. To create a message or creative, click New Message or New Creative. The message or creative that you create is automatically added to the task.

Set Impression Limits
Click ⚪ to limit the number of times a customer sees your content.

- Select Limit total impressions per user to specify the total number of times a creative is displayed to a customer. This limit is valid for the duration of this task.
- Select Limit impressions per user by period.

Select Time period to specify the maximum number of impressions that a user sees during a specified time interval (for example, minutes, hours, days, or months).

Select Session to limit the number of impressions that a user sees while interacting with content, such as your website or mobile app. By default, the session is set to expire after 30 minutes of inactivity, but you can contact a SAS representative to modify this value.
Add a Target Audience

On the Targeting tab, set the criteria that define the target audience for the content that the task delivers. Previously defined segments, events, and data views can be selected as criteria.

Criteria can be used to include or exclude people from the target audience.
- Add criteria to the Eligible page to specify which people to include in your target audience.
- Add criteria to the Exclusions page to specify which people to exclude from your target audience.

Set Metrics

Metrics measure events that the system can detect such as a person clicking on a spot on a device. On the Insights tab, add primary and secondary metrics to measure the success of the content being delivered by the task.

A primary metric is the leading measure for the success of the task. A secondary metric measures other benchmarks that you are interested in. A task must have one primary metric. A task can have multiple secondary metrics. Each secondary metric can have only one data view or event.

By default, a primary metric is created when content is added to a task. To add another primary metric:

1. Click +.
2. Select the criteria that you want to add. You can select an event view or a data view.
3. If attributes are defined for the event or data view, select the attribute conditions that must be met. For example, for a Click Through metric, you can select a particular creative as an attribute condition. The primary metric would be a click-through response to that creative.
   
   **Note:** Attributes are joined by an AND operator. Make sure that you do not define conflicting attributes that result in a condition that cannot be met.
4. Select Stop delivery after conversion to stop delivering creatives when the primary metric for the task is met.
5. Click Add Secondary Metric to add a secondary metric.

Set the Trigger Event for Your Task

1. Navigate to Orchestration ➔ Trigger Event.
2. Select the event to trigger the task, and then click OK.

Set the Priority of Your Task

1. Navigate to Orchestration ➔ Priority.
2. Select the 1 (Highest) option to give your task priority over all other tasks that deliver content to the same spot. The content of the task with the highest priority is displayed.
Schedule and Start Your Task

When you finish updating your task, you can mark the task ready, publish the task immediately, or set a schedule for the task.

On the Orchestration tab, take these actions:

- Click **No schedule** if you plan to publish the task manually.
- Click **Set a schedule** to set a time period that the task is active.
  - Select a time zone. For example, you might want to select a time zone that is different from the default if the task is targeted to a specific locale. By default, the time zone is the same as the time zone that is set for the tenant. If a valid time zone is not set for the tenant, the default time zone is UCT.
  - Click **Single occurrence** to specify a single time span that the task is active.
  - Select a start date and an end date for the task.
    - **Note:** If you select **Single occurrence**, the start date cannot be edited after the task is published.
  - Click **Recurrence** to specify a recurring task. Click 📅.
    - Specify these details for a recurring schedule:
      - **Start time** is the start time for the first occurrence.
      - **Duration** specifies the amount of time that the content is available for each occurrence. For example, a task might start every week on Monday, and continue for four days.
      - **Frequency** specifies that the schedule for the recurrence. If you click **Weekly**, click the day for each occurrence. You can select multiple days in each week. If you click **Monthly**, select the numbered day or the weekday for the recurrence. For example, you can select the 10th day of each month or the second Tuesday of each month.
        - **Note:** You can edit the weekly or monthly frequency after the task is published and the start date has passed. The recurrence must occur within the start and end dates.
      - **Range of recurrence** specifies the start and end dates, or that the recurrence continues without an end date.
  - **Extend metrics analysis** continues collecting data after the last occurrence. Select the number of days to extend data collection. The default value is 7 days. For example, if you use the default value, and the Start time is 9:00 PM, data collection continues until 9:00 PM seven days after the End by date.
    - Customers might respond several days after the last occurrence. You can extend the time for data collection in order to more effectively measure task performance.
    - During the extended period of data collection, the status is Active - Metrics Only. The status changes to Complete when the **Extend metrics analysis** period is over.
- Select **Mark Ready** to change the status from Designing to Ready. A Ready status indicates that this item is ready to be published. When you are ready to promote an item from a Ready status to an Active status, click Publish.
  - **Note:** When you publish an item, you are prompted to publish any dependent items that are marked Ready.
  - Items with a Ready status can be changed back to a Designing status by clicking **Return to Designing**. Changing this status to Designing prevents the item from being published.
  - **Note:** If your item has a Ready status and a start date, the item is not automatically published when the start date is reached. For example, if you are creating a task, it must be published in order for the start date to activate the task.
- Select **Mark Ready and Publish** to change the status from Designing to Active. Items with an Active status cannot be changed back to Designing.
Changes to a scheduled or active task are not automatically propagated to the published version of the task. You must republish the task after you save it to resolve the Out of Sync status. Otherwise, the task stays out of sync with the published version and the updates are not delivered.

When the end date of a task is reached, its status changes to Complete. Completed tasks cannot be modified. The task stops any associated data collection and makes the task's content unavailable. In addition, any unsaved changes are lost.

Note: A recurring schedule is not available if the task is included in an activity.

End the Task

While your task is running, it collects data and gathers information about progress toward your goals. Navigate to the Insights tab to check the progress of your task.

Click End on the Orchestration tab when you no longer need the task to run or when the scheduled end date is reached. The status changes from Active to Completed. Completed tasks do not collect new data, do not deliver content to a spot, and cannot be modified. Any unsaved changes to the task are lost.

Deliver Mobile Push Notifications

Add Content to Your Task

1. From the navigation bar, click Tasks.
2. Click and select Push Notification to deliver content to a mobile application.
3. You can determine whether the task delivers all content at the same time or when event conditions are met. Select a delivery type to specify how the task delivers content:
   - Click Bulk to deliver messages at the same time. You specify the schedule on the Orchestration tab. A bulk task can be used as the Start task in an activity.
   - Click Triggered to add a trigger event. You can add a trigger event on the Trigger page on the Orchestration tab. You can also specify criteria and values to add attribute conditions for the event. Content is delivered when all of the conditions are met.
4. Select the application where the message will be delivered. Click Create Task.

All of the details and items associated with the content that your task delivers are specified on the Content tab. In the properties pane of the Content tab, use the icons to change the spot, message, and creatives that the task uses. You can also set the distribution and impression limits for the creatives or add targeting criteria to each creative associated with the task.

1. Click on the Content tab.
2. Click Select Content to add a message or creative to the task. You can either choose to add an existing message or creative, or you can click New Message or New Creative to create a message or creative. The message or creative that you create is automatically added to the task.

   CAUTION! Select only event attributes for creatives that are in triggered mobile push notifications. When creatives are used in triggered mobile push notifications, merge tags can only use event attributes. Values that are from other data sources, such as the data hub, will not be resolved.
Add a Target Audience

On the Targeting tab, set the criteria that define the target audience for the content that the task delivers. Previously defined segments, events, and data views can be selected as criteria.

Criteria can be used to include or exclude people from the target audience.
- Add criteria to the Eligible page to specify which people to include in your target audience.
- Add criteria to the Exclusions page to specify which people to exclude from your target audience.

Set Metrics

Metrics measure events that the system can detect such as a person clicking on a spot on a device. On the Insights tab, add primary and secondary metrics to measure the success of the content being delivered by the task.

A primary metric is the leading measure for the success of the task. A secondary metric measures other benchmarks that you are interested in. A task must have one primary metric. A task can have multiple secondary metrics. Each secondary metric can have only one data view or event.

By default, a task is created with a primary metric. To add another primary metric:

1. Click +.
2. Select the criteria that you want to add. You can select an event view or a data view.
3. If attributes are defined for the event or data view, select the attribute conditions that must be met. For example, for a Click Through metric, you can select a particular creative as an attribute condition. The primary metric would be a click-through response to that creative.
   Note: Attributes are joined by an AND operator. Make sure that you do not define conflicting attributes that result in a condition that cannot be met.
4. Select Stop delivery after conversion to stop delivering creatives when the primary metric for the task is met.
5. Click Add Secondary Metric to add a secondary metric.

Schedule and Start Your Task

When you finish updating your task, you can mark the task ready, publish the task immediately, or set a schedule for the task.

On the Orchestration tab, take these actions:
- Click No schedule if you plan to publish the task manually.
- Click Set a schedule to set a time period that the task is active.
  - Select a time zone. For example, you might want to select a time zone that is different from the default if the task is targeted to a specific locale. By default, the time zone is the same as the time zone that is set for the tenant. If a valid time zone is not set for the tenant, the default time zone is UCT.
  - Click Single occurrence to specify a single time span that the task is active.
  - Select a start date and an end date for the task.
    Note: If you select Single occurrence, the start date cannot be edited after the task is published.
  - Click Recurrence to specify a recurring task. Click 🔄.
Specify these details for a recurring schedule:

- **Start time** is the start time for the first occurrence.
- **Frequency** specifies that the schedule for the recurrence. If you click *Weekly*, click the day for each occurrence. You can select multiple days in each week. If you click *Monthly*, select the numbered day or the weekday for the recurrence. For example, you can select the 10th day of each month or the second Tuesday of each month.

  **Note:** You can edit the weekly or monthly frequency after the task is published and the start date has passed. The recurrence must occur within the start and end dates.

- **Range of recurrence** specifies the start and end dates, or that the recurrence continues without an end date.

- **Extend metrics analysis** continues collecting data after the last occurrence. Select the number of days to extend data collection. The default value is 7 days. For example, if you use the default value, and the **Start time** is 9:00 PM, data collection continues until 9:00 PM seven days after the **End by** date.

  Customers might respond several days after the last occurrence. You can extend the time for data collection in order to more effectively measure task performance.

  During the extended period of data collection, the status is Active - Metrics Only. The status changes to Complete when the **Extend metrics analysis** period is over.

Select **Mark Ready** to change the status from Designing to Ready. A Ready status indicates that this item is ready to be published. When you are ready to promote an item from a Ready status to an Active status, click **Publish**.

  **Note:** When you publish an item, you are prompted to publish any dependent items that are marked Ready.

  Items with a Ready status can be changed back to a Designing status by clicking **Return to Designing**. Changing this status to Designing prevents the item from being published.

  **Note:** If your item has a Ready status and a start date, the item is not automatically published when the start date is reached. For example, if you are creating a task, it must be published in order for the start date to activate the task.

Select **Mark Ready and Publish** to change the status from Designing to Active. Items with an Active status cannot be changed back to Designing.

Changes to a scheduled or active task are not automatically propagated to the published version of the task. You must republish the task after you save it to resolve the Out of Sync status. Otherwise, the task stays out of sync with the published version and the updates are not delivered.

When the end date of a task is reached, its status changes to Complete. Completed tasks cannot be modified. The task stops any associated data collection and makes the task's content unavailable. In addition, any unsaved changes are lost.

  **Note:** A recurring schedule is not available if the task is included in an activity.

**End the Task**

When your task is running, it collects data and gathers information about progress toward your metrics. Navigate to the **Insights** tab to check the progress of your task.

Click **End** on the **Orchestration** tab when you no longer need the task to deliver content or when the scheduled end date is reached. The status changes from Active to Complete. Completed tasks do not collect new data, do not deliver content to a spot, and cannot be modified. Any unsaved changes to the task are lost.

**Add Task to an Activity**

To publish the task, you have to associate it with an activity.
Deliver Web Content

Create tasks that deliver content to one or more spots on your web pages. You can track and collect data about customer behavior on those web pages, and then use that information to gain insights about your web campaign.

Add Content to Your Task

All of the details and items associated with the content that your task delivers to the web are specified on the Content tab. In the properties pane of the Content tab, use the icons to change the spot, message, and creatives that the task uses. You can also set the distribution and impression limits for the creatives or add targeting criteria to each creative associated with the task.

Create a Task

1. From the navigation bar, click Tasks.
2. Click .

Select the Spot

You can add either a spot or spot set to the task. When you are designing your task, you can see information about the spot by clicking to open the Spot pane. On the spot pane, click to change the spot where your content is displayed. You can select an existing spot, or you can click New Spot to create one. The spot that you create is automatically added to the task.

TIP If you select a spot that contains at least one attribute, you can then target the spot attributes on the Targeting tab.

Add Message or Creatives

1. Click to open the Content Selection pane.
2. Click Select Content to add a message or to add creatives to the task. You can choose either to add an existing message or creative, or you can click New Message or New Creative to create a message or creative. The message or creative that you create is automatically added to the task. In the Select creatives section, select which creatives the task displays.

   Note: If you add a creative that contains a personalization variable, a message prompting you to specify the event or data view attribute is displayed above the creative. You can specify the attribute at any time on the Personalization tab of the properties pane.

3. Click Preview in Site to see how creatives look on your site before updating it. You can select the different creatives associated with a spot by clicking .

   Note: The creatives that appear in the property pane are ordered by name.
Personalize Creatives

To deliver personalized content to a web page, your task must include a creative that uses merge tags or personalization variables. If the creative contains a personalization variable, you must select which event or data view attribute the task uses to resolve the variable.

1. Navigate to the Personalization tab.
2. Select the creative.
3. Click to add a value to the personalization variable.
4. Select the event or data view attribute that corresponds to the information that you want the creative to display when the task delivers content.
   
   Note: In order for the personalized content to be displayed successfully, the event or data view attribute that you select must also be included in the targeting criteria for this task.
5. (Optional) Enter a default value. The default value is used when the customer data cannot be retrieved. For example, if a user is not logged on to your website, the system cannot know the user’s identity. As a result, no customer information is available to replace the merge tag. Instead, the default value is used.

Set Distribution of Content

If this task contains more than one creative, you can refine how each creative is displayed. Click to open the Distribution tab and select the method that you want the task to use when determining how to display content.

Frequency Distribution

Select Frequency to specify how often a creative is displayed compared with the other creatives in this task. Next, set a percentage for each creative.

Note: Frequency is the default distribution method. By default, each creative is assigned equal distribution.

Sequential Distribution

Select Sequential to set the order in which the creatives are displayed.

CAUTION! The order is reset every 24 hours. After 24 hours the order is reset, and the first creative in the sequence is selected again. If the content delivery schedule for your task is longer than 24 hours, the creatives might not be displayed in the order that you have specified.

Rule-based Distribution

Select Rule-based to split a task’s target audience into subgroups and associate a creative with each subgroup, thereby personalizing the content that your target audience sees. You can assign different criteria to each creative so that you can decide which creatives are delivered to different subgroups of the target audience.

Note: When you select the rule-based option, the criteria that you add to each creative are applied after the criteria on the Targeting tab are applied. Think of rule-based criteria as a way of refining which members of the task’s target audience see specific creatives.

Each creative is assigned a number that indicates the order in which the creative’s targeting criteria are evaluated. The creative that has the number 1 associated with it is evaluated first. The first creative with criteria that match a user is the creative that is delivered to that user. As a result, any creatives that come after the matching creative are not evaluated.

You can change the numbers that are associated with a creative by changing the position of the creative in the list. To change the creative order:
1 Click from the Distribution pane.

2 Select the creative that you want to move.

3 Click the arrows to move the creative up or down in the list.

A best practice is to ensure that there is always a creative that is displayed in your spot. For Web and Mobile Spot tasks, there are two ways to ensure that a spot that this task delivers content to is never empty.

- Your task includes a spot that contains a default creative.
- The creative in the rule-based creatives list that comes last (that is, the creative associated with the highest number) does not contain additional targeting. A creative that is listed last and does not have additional criteria associated with it is displayed when none of the previous criteria match the task’s audience member.

The creative that does not contain additional criteria becomes the default creative for this task. The default creative is denoted by 🍃. As a result, any creatives listed after the default creative are never delivered.

Note: When you create a Mobile In-App Message or Mobile Push Notification, you must denote one creative as the default creative.

To add targeting criteria to each creative, select the creative and follow these steps:

- Select All of the following to include members who meet all of the criteria in a group. Or, select Any of the following to include members who meet one or more of the criteria in a group.

- Click 📊 to view a summary of the criteria.

- Click 📃 to make a copy of the criteria.

- Click ↑ or ↓ to move criteria up or down in the list.

- Click 📦 to create a group for a set of criteria.

- Click 📊 to add criteria. In the Select Criteria window, select the criteria to add. In addition, you can use customer lists that have been imported from other sources, such as SAS Marketing Automation.

Note: For mobile in-app, mobile spot, and web targeting, when you add Browser and Device to your criteria, only the people who are using that browser or device during the current session are included in the target audience. For example, if you add Chrome as the browser, only the people who are using Chrome during the current session are eligible to be included in the target audience.

When you add a spot attribute that contains a URL query string parameter, the value of that parameter needs to be decoded for multi-byte character sets (MBCS). If you are adding a URL query string, the value should be encoded for MBCS.

Set Impression Limits

Click 🏛 to limit the number of times a customer sees your content.

- Select Limit total impressions per user to specify the total number of times a creative is displayed to a customer. This limit is valid for the duration of this task.

- Select Limit impressions per user by period.

Select Time period to specify the maximum number of impressions that a user sees during a specified time interval (for example, minutes, hours, days, or months).

Select Session to limit the number of impressions that a user sees while interacting with content, such as your website or mobile app. By default, the session is set to expire after 30 minutes of inactivity, but you can contact a SAS representative to modify this value.
Add a Target Audience

On the Targeting tab, set the criteria that define the target audience for the content that the task delivers. Previously defined segments, events, and data views can be selected as criteria.

Note: You must define a login event type if you have tasks that depend on segments with data from logged-in users.

Criteria can be used to include or exclude people from the target audience.

- Add criteria to the Eligible page to specify which people to include in your target audience.
- Add criteria to the Exclusions page to specify which people to exclude from your target audience.

If no criteria are added to either the Eligible page or the Exclusions page, then the target audience consists of everyone.

To add eligibility or exclusion criteria:

- Select All of the following to include members who meet all of the criteria in a group. Or, select Any of the following to include members who meet one or more of the criteria in a group.
- Click to view a summary of the criteria.
- Click to make a copy of the criteria.
- Click or to move criteria up or down in the list.
- Click to create a group for a set of criteria.

- Click to add criteria. In the Select Criteria window, select the criteria to add. In addition, you can use customer lists that have been imported from other sources, such as SAS Marketing Automation.

Note: For mobile in-app, mobile spot, and web targeting, when you add Browser and Device to your criteria, only the people who are using that browser or device during the current session are included in the target audience. For example, if you add Chrome as the browser, only the people who are using Chrome during the current session are eligible to be included in the target audience.

When you add a spot attribute that contains a URL query string parameter, the value of that parameter needs to be decoded for multi-byte character sets (MBCS). If you are adding a URL query string, the value should be encoded for MBCS.

Note: Depending on the task type, you can select only one segment on the Eligible page, and one segment on the Exclusions page. If you do not add criteria, no content is delivered.

Set Metrics

Metrics measure events that the system can detect. For example, the system can detect certain events such as a person clicking on a spot on a web page. Define metrics by adding data views or events that measure the success of the content being delivered by the task. Add a primary metric and additional secondary metrics on the Insights tab.

The primary metric measures conversions to determine the success of the task. A secondary metric measures other benchmarks that you are interested in. A task must have one primary metric. A task can have multiple secondary metrics. Each secondary metric can have only one data view or event.

By default, a task is created with a Click Through primary metric. To change the metric:

1. Select the metric and click .
Click to add conditions to the existing metric. For example, for a Click Through metric, you can select a particular creative as an attribute condition. The primary metric would be a click-through response to that creative.

**Note:** Attributes are joined by an AND operator. Make sure that you do not define conflicting attributes that result in a condition that cannot be met.

Click to select a different data view or event.

To mark this metric as a contact or response that can be tracked and used for reporting and future targeting, select **Classify this selection**. Classifying a selection enables you to compare contacts and responses across creatives and channels. You can personalize future messages and creatives. You can also use the information to segment customers. You can classify selections in both primary and secondary metrics.

To record the number of times that a customer interacts with a creative or a spot, select **Mark this selection** as a contact. This information is available as contact history for SAS Marketing Automation, SAS Real-Time Decision Manager, and other applications.

To mark this metric as a response to a creative, select **Mark this selection as a response**. Enter an **Associated value** to identify the type of response. For example, enter `blue` to track the customer response to an image of a blue shirt.

Select **Stop delivery after conversion** to stop delivering creatives when the primary metric for the task is met.

When delivery of the creatives stops, that same spot might switch to displaying creatives from another task. If there is no other task delivering a creative to that spot, then the spot's default creative is displayed. If there are no other tasks delivering content to that spot and there is no default content defined for that spot, then the spot is empty.

To add secondary metrics:

1. Click **Add Secondary Metric**.
2. Select the data views or events that you want to add. Each data view or event that you select becomes a secondary metric.

For example, you could create multiple secondary metrics that are Click Through events. Each metric could have a different creative as an attribute condition. Each secondary metric would be a click-through response to a different creative.

To change an existing metric, select the metric and click **Mark this selection**. To delete a metric, click it, and then click **Mark this selection**.

### Set the Priority of Your Task

1. Navigate to **Orchestration ➔ Priority**.
2. Select the **1 (Highest)** option to give your task priority over all other tasks that deliver content to the same spot. The content of the task with the highest priority is displayed.

**Note:** A/B tasks have higher priority than standard tasks. For example, if you have a mobile spot task and a mobile spot A/B test task that deliver content to the same spot, the A/B test task always delivers its content, no matter what the priority is of the mobile task.

### Schedule and Start Your Task

When you finish updating your task, you can mark the task ready, publish the task immediately, or set a schedule for the task.

On the **Orchestration** tab, take these actions:
Click **No schedule** if you plan to publish the task manually.

Click **Set a schedule** to set a time period that the task is active.

- Select a time zone. For example, you might want to select a time zone that is different from the default if the task is targeted to a specific locale. By default, the time zone is the same as the time zone that is set for the tenant. If a valid time zone is not set for the tenant, the default time zone is UCT.

- Click **Single occurrence** to specify a single time span that the task is active.

- Select a start date and an end date for the task.

  **Note:** If you select **Single occurrence**, the start date cannot be edited after the task is published.

- Click **Recurrence** to specify a recurring task. Click **Recurrence**.

  Specify these details for a recurring schedule:

  - **Start time** is the start time for the first occurrence.
  
  - **Duration** specifies the amount of time that the content is available for each occurrence. For example, a task might start every week on Monday, and continue for four days.
  
  - **Frequency** specifies that the schedule for the recurrence. If you click **Weekly**, click the day for each occurrence. You can select multiple days in each week. If you click **Monthly**, select the numbered day or the weekday for the recurrence. For example, you can select the 10th day of each month or the second Tuesday of each month.

  **Note:** You can edit the weekly or monthly frequency after the task is published and the start date has passed. The recurrence must occur within the start and end dates.

  - **Range of recurrence** specifies the start and end dates, or that the recurrence continues without an end date.

  - **Extend metrics analysis** continues collecting data after the last occurrence. Select the number of days to extend data collection. The default value is 7 days. For example, if you use the default value, and the **Start time** is 9:00 PM, data collection continues until 9:00 PM seven days after the **End by** date.

    Customers might respond several days after the last occurrence. You can extend the time for data collection in order to more effectively measure task performance.

    During the extended period of data collection, the status is Active - Metrics Only. The status changes to Complete when the **Extend metrics analysis** period is over.

- Select **Mark Ready** to change the status from Designing to Ready. A Ready status indicates that this item is ready to be published. When you are ready to promote an item from a Ready status to an Active status, click **Publish**.

  **Note:** When you publish an item, you are prompted to publish any dependent items that are marked Ready.

  Items with a Ready status can be changed back to a Designing status by clicking **Return to Designing**. Changing this status to Designing prevents the item from being published.

  **Note:** If your item has a Ready status and a start date, the item is not automatically published when the start date is reached. For example, if you are creating a task, it must be published in order for the start date to activate the task.

- Select **Mark Ready and Publish** to change the status from Designing to Active. Items with an Active status cannot be changed back to Designing.

Changes to a scheduled or active task are not automatically propagated to the published version of the task. You must republish the task after you save it to resolve the Out of Sync status. Otherwise, the task stays out of sync with the published version and the updates are not delivered.

When the end date of a task is reached, its status changes to Complete. Completed tasks cannot be modified. The task stops any associated data collection and makes the task's content unavailable. In addition, any unsaved changes are lost.
Note: A recurring schedule is not available if the task is included in an activity.
Track User Interaction with Events and Data Views

Events and data views can be used when creating segments and adding target audiences to a task. Data views, which contain events, are used to set metrics in tasks and activities.

Creating Events

To create an event, complete these actions:

1. From the navigation bar, click Events.

2. Click h.

3. Select the event type that is appropriate for the interaction that you are tracking. By default, email events are recorded for all of the recipients. You do not need to perform any additional tasks to capture the data for email events.

Table 8.1 Events Types

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add to Cart</td>
<td>Define an event when a user adds a product to a cart.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>Cart View</td>
<td>Define an event when a user views a cart.</td>
</tr>
<tr>
<td>Check-out View</td>
<td>Define an online store's check-out page and the elements</td>
</tr>
<tr>
<td></td>
<td>within it.</td>
</tr>
<tr>
<td>Click</td>
<td>Define an event when a page element is clicked.</td>
</tr>
<tr>
<td>External</td>
<td>Define an event that interacts with an external application.</td>
</tr>
<tr>
<td>Form Submit</td>
<td>Define an event when a user submits a form.</td>
</tr>
<tr>
<td>Mobile</td>
<td>Define an event when a user interacts with a mobile</td>
</tr>
<tr>
<td></td>
<td>application.</td>
</tr>
<tr>
<td>Page View</td>
<td>Define an event when a user views a page.</td>
</tr>
<tr>
<td>Product View</td>
<td>Define an event when a user views a product on a mobile</td>
</tr>
<tr>
<td></td>
<td>device or web page.</td>
</tr>
<tr>
<td>Purchase View</td>
<td>Collect data on a user’s shopping experience.</td>
</tr>
</tbody>
</table>

4. Select the appropriate page or selector for your event. For example, if you are creating a page view event, navigate to the appropriate web page. If you are creating a form submit event, navigate to the appropriate form.

**Note:** Mobile events do not have a location tab.

5. Navigate to the **Event Details** tab to add or update information about your event. You can configure the event and edit or create event attributes.

6. On the **Orchestration** tab, complete one of these actions:

- Select **Mark Ready** to change the status from Designing to Ready. A Ready status indicates that this item is ready to be published. When you are ready to promote an item from a Ready status to an Active status, click **Publish**.

  **Note:** When you publish an item, you are prompted to publish any dependent items that are marked Ready.

  Items with a Ready status can be changed back to a Designing status by clicking **Return to Designing**. Changing this status to Designing prevents the item from being published.

  **Note:** If your item has a Ready status and a start date, the item is not automatically published when the start date is reached. For example, if you are creating a task, it must be published in order for the start date to activate the task.

- Select **Mark Ready and Publish** to change the status from Designing to Active. Items with an Active status cannot be changed back to Designing.

If the content of a published item is changed and saved, that item becomes out of sync with the published version. To synchronize the content, select **Republish**. Otherwise, the item stays out of sync with the published version and the updates are not delivered.
Creating Data Views

Data views enable you to combine the attributes and data from one or more events to create an item that can be reused for targeting and analysis.

To create a data view:

1. From the navigation bar, click Data Views.

2. On the Data Views page, click .

3. On the Conditions tab, add one or more existing events.
   Note: Currently, events can be combined only with the Any of the following option (which is a logical OR association). As a result, creating a nested group (with ) has no discernible effect.
   a. Click .
   b. Enter the name of an event in the criteria’s text field, or click and select an event.
   c. (Optional) Refine the event’s attributes. Click . The attributes that you can modify are based on the attributes that are associated with the original event.
      Attributes that you modify do not affect the attributes for the event itself. The attributes in this panel affect how the event is processed for this data view only, so you can use an event in multiple contexts without changing its underlying definition.
   d. (Optional) After you add all the events, you can click to review the summary of how your events are used in this data view.

4. On the Attributes tab, review all of the attributes associated with this data view. This list is an intersection of the attributes from all of the events.
   Note: Data view attributes can be used in personalization variables if the attribute is listed on this tab.

5. On the Orchestration tab, complete one of these actions:
   - Select Mark Ready to change the status from Designing to Ready. A Ready status indicates that this item is ready to be published. When you are ready to promote an item from a Ready status to an Active status, click Publish.
     Note: When you publish an item, you are prompted to publish any dependent items that are marked Ready.
     Items with a Ready status can be changed back to a Designing status by clicking Return to Designing. Changing this status to Designing prevents the item from being published.
     Note: If your item has a Ready status and a start date, the item is not automatically published when the start date is reached. For example, if you are creating a task, it must be published in order for the start date to activate the task.
   - Select Mark Ready and Publish to change the status from Designing to Active. Items with an Active status cannot be changed back to Designing.

If the content of a published item is changed and saved, that item becomes out of sync with the published version. To synchronize the content, select Republish. Otherwise, the item stays out of sync with the published version and the updates are not delivered.

Note: If a task or activity is using a data view that is published, you cannot modify the data view’s conditions. Other properties (such as the name) can be modified even if the data view is consumed by other items.
6  (Optional) Click  and select Properties to add a name and a description.

7  Use your data view in a task or activity to complete these actions:
   - Set metrics for an activity or task.
   - Add a target audience to a task.

---

**Create a Segment**

A segment represents a group of people who share common characteristics, such as age or gender. For example, you might create a segment that includes females who are at least 40 years old. Segments can be used to define the target audience for a task and are reusable. Segments are created by building a segment map. Segment maps contain paths made up of nodes. There are three types of nodes:

- **Criteria** nodes contain characteristics that define a group of people. The group of people defined by a node is the node’s segment.
- **And** nodes are used when you combine criteria nodes with an AND operator.
- **Or** nodes are used when you combine criteria nodes with an OR operator.

---

**Create a Segment**

1  From the navigation, select Segments.

2  Click .

   **Note:** The name of your segment cannot exceed 49 characters.

3  Select Cloud Data Hub to create a segment that uses customer information that was uploaded to SAS Customer Intelligence 360.

No more than 50 segments can be active at once. If you have 50 active segments and you need to publish an additional segment, change the status of an existing active segment to Complete before publishing the new segment.

   **TIP** You can also create a segment by copying an existing segment. From Segments, select the segment that you want to copy and click :. Then select **Copy**.

---

**Add Criteria Nodes**

When you are adding criteria to the nodes, you can use data and events to define who is included in the segment. In addition, you can use customer lists that have been imported from SAS Marketing Automation or other sources. For more information, see “Integrating with SAS Marketing Automation” in SAS Customer Intelligence 360: User’s Guide.

1  Click Criteria or drag the Criteria node onto the workspace.

2  Right-click the node and select Open.

   **TIP** You can double-click a node to open it.
3 Add a name and description to the node. The name is displayed on the node in the map view.

4 Add criteria to the node. For some criteria, you can choose whether to include or exclude the members that satisfy the criteria.

- Select **All of the following** to include members who meet all of the criteria in a group. Or, select **Any of the following** to include members who meet one or more of the criteria in a group.
- Click ☐ to view a summary of the criteria.
- Click ☐ to make a copy of the criteria.
- Click ↑ or ↓ to move criteria up or down in the list.
- Click [ ] to create a group for a set of criteria.
- Click + to add criteria. In the **Select Criteria** window, select the criteria to add. In addition, you can use customer lists that have been imported from other sources, such as SAS Marketing Automation.

Note: For mobile in-app, mobile spot, and web targeting, when you add **Browser and Device** to your criteria, only the people who are using that browser or device during the current session are included in the target audience. For example, if you add Chrome as the browser, only the people who are using Chrome during the current session are eligible to be included in the target audience.

When you add a spot attribute that contains a URL query string parameter, the value of that parameter needs to be decoded for multi-byte character sets (MBCS). If you are adding a URL query string, the value should be encoded for MBCS.

Note: All nodes must contain criteria before you can update segment counts or save the segment.

**Add Events to Criteria Nodes**

When you add an event to your segment node, you can change the occurrence and time period of the event. The occurrence defines how often the event must occur so that a person is eligible for the segment. The time period defines when the event must occur in order to be eligible. By default, an event must occur at least once in the past week. To change the occurrence or time period of an event, click ☒, and set the event occurrence details.

Specify the number of times the event must occur in order for a person to be eligible. Set an operator and value for **Occurrences**. For example, you can set the Occurrence to **Less than (<)** 5. This setting is how you specify that an event must occur at most four times in order for a person to be eligible.

Set the time period in which all occurrences must occur:

- Select **Relative** to define a time period relative to the current day, such as within the past week.
- Select **Absolute** to define a time period with specific dates. For example, you can set the time period so that the event occurs at least one time before a specified date or between two specified dates.
- Select **None** when you do not need to define a time period for the event. Events that are added to a segment and do not have a defined time period are eligible anytime they occur.

For example, you want your segment to include customers who have visited your website's home page at least three times since January 1, 2016.

1 Define an event that detects and records a customer's view of your site's home page.
2 Create a segment or targeting in a task that uses that event as a criterion.
3 Set **Occurrences** to **Greater than (>)** 2. Select **Absolute** for the date range, and set the time period to be greater than or equal to January 1, 2016.
Add AND and OR Nodes

Add AND and OR nodes to continue building your segment map. Complete your segment map by connecting the nodes to create paths.

Select the Node Type

- Click or drag \(\text{And}\) to create a node that combines two criteria nodes using an AND operator.
- Click or drag \(\text{OR}\) to create a node that combines two criteria nodes using an OR operator.
- Connect nodes to create a path that represents your segment.

**Note:** If a node is selected, you must deselect it before you can connect it to another node.

Set Node Properties

You can edit the properties of the node, such as the name and description. View the list of input nodes that lead to the AND node or the OR node, and change the rule that is used to evaluate potential segment candidates.

**Note:** The option that you select can result in different segments and impact performance.

AND Node Rule

You create a segment map that represents a household, and that map contains two criteria nodes. The first criteria node represents people who are female. The second criteria node represents people who are older than 55. You add an AND node to complete the segment map.

Figure 8.1  Segment Map Representing Women over the Age of 55

Here are the two options for the AND node rule:
- **Meets all conditions defined by input nodes.** This is the default option, and it works the same way that a logical AND works. In this case, your segment includes households that contain at least one person who is both female and older than 55.

- **Is a member of each group defined by input nodes.** This second option works like an SQL intersect command. In this case, a household is included in the segment if the household contains either of these conditions:
  - At least one person who is both female and older than 55. For example, a household that contains a 60-year-old woman satisfies the criteria.
  - At least one person who is female and at least one person who is older than 55. For example, a household that contains a 40-year-old woman and a 56-year-old man satisfies the criteria. So does a household that contains a 60-year-old woman.

**OR Node Rule**

You create a segment map that represents a household, and that map contains two criteria nodes. The first criteria node represents people who are female. The second criteria node represents people who are older than 55. This time, you add an OR node to complete the segment map.

*Figure 8.2*  Segment Map Representing People Who Are Women or over the Age of 55

![Segment Map](image)

Here are the two options for the OR node rule:

- **Meets any conditions defined by input nodes.** This is the default option, and it works the same way that a logical OR works. In this case, your segment includes households that contain either a person who is female or a person who is older than 55.

- **Is a member of any of the groups defined by input nodes.** This second option works like an SQL intersect command, which often results in the same segment. For the example, using this option, the resulting segment includes households that contain either a person who is female or a person who is older than 55. If you create a segment map that combines aggregate data, such as total household income, you can get different results depending on which option you select for the OR node.

  **Note:** When using aggregated data, the best practice is to select this option.
Set Node Properties

You can edit the properties of the node, such as the name and description. View the list of input nodes that lead to the AND node or the OR node, and change the rule that is used to evaluate potential segment candidates.

Note: The option that you select can result in different segments and impact performance.

AND Node Rule

You create a segment map that represents a household, and that map contains two criteria nodes. The first criteria node represents people who are female. The second criteria node represents people who are older than 55. You add an AND node to complete the segment map.

*Figure 8.3  Segment Map Representing Women over the Age of 55*

Here are the two options for the AND node rule:

- **Meets all conditions defined by input nodes.** This is the default option, and it works the same way that a logical AND works. In this case, your segment includes households that contain at least one person who is both female and older than 55.

- **Is a member of each group defined by input nodes.** This second option works like an SQL intersect command. In this case, a household is included in the segment if the household contains either of these conditions:
  1. At least one person who is both female and older than 55. For example, a household that contains a 60-year-old woman satisfies the criteria.
  2. At least one person who is female and at least one person who is older than 55. For example, a household that contains a 40-year-old woman and a 56-year-old man satisfies the criteria. So does a household that contains a 60-year-old woman.
OR Node Rule

You create a segment map that represents a household, and that map contains two criteria nodes. The first criteria node represents people who are female. The second criteria node represents people who are older than 55. This time, you add an OR node to complete the segment map.

*Figure 8.4  Segment Map Representing People Who Are Women or over the Age of 55*

Here are the two options for the OR node rule:

- **Meets any conditions defined by input nodes.** This is the default option, and it works the same way that a logical OR works. In this case, your segment includes households that contain either a person who is female or a person who is older than 55.

- **Is a member of any of the groups defined by input nodes.** This second option works like an SQL intersect command, which often results in the same segment. For the example, using this option, the resulting segment includes households that contain either a person who is female or a person who is older than 55. If you create a segment map that combines aggregate data, such as total household income, you can get different results depending on which option you select for the OR node.

  *Note:* When using aggregated data, the best practice is to select this option.

Mark Your Segment Ready

Select **Mark Ready** to change the status of your segment from Designing to Ready. A Ready status indicates that this item is ready to be published. When you are ready to promote an item from a Ready status to an Active status, click **Publish**.

*Note:* When you publish an item, you are prompted to publish any dependent items that are marked Ready.

Items with a Ready status can be changed back to a Designing status by clicking **Return to Designing.** Changing this status to Designing prevents the item from being published.
Discover a Segment

When an A/B test recommends a winning variant, segment discovery searches for segments of the target audience that respond well or poorly to a variant that is different from the recommended winner. A segment represents a group of people who share common characteristics. Impression rates, conversion rates, and segment size are analyzed to compare the performance of the winning variant to the remaining variants in an A/B test. By looking for common attributes among customer data, SAS Customer Intelligence 360 can discover a segment and find an alternate variant that performs better for that segment than the winning variant. The discovered segment is displayed on the Insights tab.

In order to discover a segment, SAS Customer Intelligence 360 tracks customer information, including conversions. The completion of a conversion is counted only once per visitor. For example, each of these scenarios counts as one conversion:

- A visitor views the variant and completes the conversion. The same visitor then leaves the site and returns later, without completing the conversion.
- A visitor views the variant but does not complete the conversion. Later, the same visitor returns to the site and completes the conversion.
- A visitor views the variant and completes the conversion. The visitor leaves the site. The same visitor returns later and completes the conversion again.

SAS Customer Intelligence 360 takes all of the historic impressions and conversion rates into account when comparing a variant against the winning variant. These comparisons are used to display statistics on the confidence between competing variants. By default, the confidence threshold for identifying a discovered segment is 90%. The variant that performs better for a discovered segment than the overall winning variant is identified as the winner for that particular discovered segment.

Profile Segments

Learn how to use segment profiling to understand the characteristics and attributes of a new segment.

See the video here: Profile Segments.

Add a Target Audience to Your Task

On the Targeting tab, set the criteria that define the target audience for the content that the task delivers. Previously defined segments, events, and data views can be selected as criteria.

Criteria can be used to include or exclude people from the target audience.

- Add criteria to the Eligible page to specify which people to include in your target audience.
- Add criteria to the Exclusions page to specify which people to exclude from your target audience.

If no criteria are added to either the Eligible page or the Exclusions page, then the target audience consists of everyone.
To add eligibility or exclusion criteria:

- Select **All of the following** to include members who meet all of the criteria in a group. Or, select **Any of the following** to include members who meet one or more of the criteria in a group.

- Click to view a summary of the criteria.

- Click to make a copy of the criteria.

- Click or to move criteria up or down in the list.

- Click or to move criteria up or down in the list.

- Click to create a group for a set of criteria.

- Click + to add criteria. In the **Select Criteria** window, select the criteria to add. In addition, you can use customer lists that have been imported from other sources, such as SAS Marketing Automation.

  **Note:** For mobile in-app, mobile spot, and web targeting, when you add **Browser and Device** to your criteria, only the people who are using that browser or device during the current session are included in the target audience. For example, if you add Chrome as the browser, only the people who are using Chrome during the current session are eligible to be included in the target audience.

  When you add a spot attribute that contains a URL query string parameter, the value of that parameter needs to be decoded for multi-byte character sets (MBCS). If you are adding a URL query string, the value should be encoded for MBCS.

---

**Refine Task Targeting**

If you have a task with multiple creatives, you can deliver different creatives to a subset of the task's audience. You can assign different criteria to each creative, enabling you to control which creatives are displayed to which subset of the target audience. Criteria added to creatives are applied to the audience that you defined on the **Targeting** tab of the task.

1. Select the creative that you want to add targeting to.

2. Click .

   Each creative is assigned a number that indicates the order in which the creative's targeting criteria are evaluated. A creative with the number 1 is evaluated first. You can change the numbers by changing the position of the creative in the list. After a suitable creative is found for a user, that creative is delivered and the creatives that come after it are not evaluated.

   The first creative in the list that does not contain targeting criteria becomes the default creative for this task. The default creative is denoted by . Any creatives listed after the default creative are never delivered.

   **Note:** If your task uses a spot set, each spot must contain at least one default creative.
Create an Activity

Create an activity that charts the customer paths that are designed to meet the goals of a marketing campaign.

1. From the navigation bar, click \( \text{Activities} \).
2. Click \( \checkmark \).
3. Click + in the Start column of the activity map and select a task or a trigger event.
   - For more information about trigger events, see “Use Events to Guide Customers Through an Activity” on page 103.
4. Add tasks to the path after the Start task or Trigger event by clicking +.
   - For information about other nodes that you can add to the activity map, see “Test Activity Paths” on page 111 and “Create New Paths Based on Customer Behavior” on page 104.
5. When you finish adding paths to your activity map, click \( \checkmark \) to ensure that the activity map is valid.

Use Events to Guide Customers Through an Activity

Use a Trigger event to select customers based on their actions, such as clicking a link on a web page.

1. Click + in the Start column of the activity map and select Trigger Event to add an event.
2. In the Event Details window, click \( \checkmark \) to select the event.
3 To change the occurrence or time period of this event, click [ ] and set the event occurrence details.

4 Specify the number of times the event must occur in order for a person to be eligible. Set an operator and value for **Occurrences**. For example, you can set the **Occurrence** to **Less than (<)** 5. This setting specifies that an event must occur at most four times in order for a person to be eligible.

Set the time period in which all occurrences must occur:

- Select **Relative** to define a time period relative to the current time, such as within the previous week or the previous hour.
- Select **Absolute** to define a time period with specific dates. For example, you can set the time period so that the event occurs at least one time before a specified date or between two specified dates.
- Select **None** when you do not need to define a time period for the event. Events that are added to an activity and do not have a defined time period are eligible anytime that they occur.

5 If the event contains attributes, click + to add more conditions. For example, you can specify a product name if the event has a product name attribute.

---

### Create New Paths Based on Customer Behavior

Use a Split in an activity to decide how to treat customers according to their behavior.

1 Click + and select **Split** to add a Split to the activity map.

2 The metrics that are used in the Split are defined in the preceding task. Secondary metrics have separate paths. Select the metrics that you want to include as output paths from the Split.

3 In the **Split Properties** window, click **Add Split**.

You can then specify the following conditions for creating additional output paths from the Split:

- Set the length of time to wait before evaluating the conditions and determining whether the customer is qualified to follow the path.
- The additional conditions are derived from the task metrics. For example, you can specify a condition that selects customers who clicked through but did not meet the primary metric within an hour of the impression. Click [ ] to group the conditions.

4 Click **OK**. The Split on Conditions section in the **Split Properties** window displays the conditions for the Split. By default, only users who qualify during the evaluation period are included. Click [ ] and select **Include all qualified users** to include all users who meet the conditions, whether before or during the evaluation period.

5 Click **Add Other node** to create an output node that contains customers who have not followed any other output path from the Split node.

---

### View Tasks from the Activities Page

You can view and open tasks from the Activities page. When you click [ ] Activities from the navigation bar, the activities are displayed.

Expand an activity to list the tasks that are used in that activity. Click a task to open it from within the activity.
Attributing Credit to Touchpoints

Overview

A customer journey is a set of actions, or touchpoints, that a customer takes before converting. These touchpoints often cross channels, devices, and sessions. For example, a customer might click a paid search result for a product, and then see an ad for that product in a social media feed. In addition, the customer might receive an email or a message on a mobile device about the product. How do you know which of these touchpoints—the email, mobile message, search result, or social media advertisement—contributed to the final conversion?

Attribution is the process of identifying touchpoints along a customer journey and assigning credit to those touchpoints so that you can analyze the contribution of each of these interactions toward the conversion. In order to determine attribution, analytics first discovers customer journeys for conversions and then assigns credit to the touchpoints in those journeys.

Analyzing Customer Journeys

Attribution analysis builds a customer journey by finding a conversion for the data view, and then identifying the touchpoints that led to that conversion. Attribution analysis is completed using two approaches: rule-based and analytical. Rule-based methods build customer journeys using touchpoints that have occurred prior to the conversion. An analytical method is not bound by a time period. Instead, the customer journeys that are identified by analytical methods have an association with the data view.

You can explore the results of both methods on the Attribution tab of the data view that you are interested in. The customer journeys built using analytics depend on data-driven decisions that identify whether a customer journey is worth evaluating. The rule-based method for building customer journeys depends on changing a parameter such as maximum number of touchpoints specified for a customer journey.

Analyzing Attribution

After a customer journey for a data view is created, each touchpoint in that journey is allocated a share of the credit for the conversion. This credit is known as a touchpoint's attribution share. There are several models on the Attribution tab of a data view that you can use to explore a touchpoint's attribution share.

The Attribution tab contains the following information:

- The Attribution Share graph that shows a touchpoint’s contribution toward a conversion across all customer journeys. Any touchpoint found in a customer journey is displayed on this graph. Each touchpoint contains a set of bars, one bar for each model. You can position your mouse pointer over a bar to see information about the touchpoint, such as the percentage of its attribution share.

- A Customer Journey section, where you can find details about the customer journeys for a selected touchpoint. For example, you can click a node in a customer journey to see information about that touchpoint and to access journey details such as the time period between touchpoints.
Testing

Creating an A/B Test Task

You can compare the performance of multiple creatives. When creating a test task, you can optimize the task, which enables analytics to use a multi-armed bandit approach to finding the best-performing variant. As a result, an optimized test task delivers the best-performing variants to more of the target audience. Test tasks can also discover previously undefined segments of people that prefer a different creative than the creative that most of the target audience prefers. You can learn about a discovered segment by reviewing its profile.

Add Content to Your Task

Select the Spot or Spot Set

1. From the navigation bar, click Tasks.
2. Click and select the task type.
   - Select Mobile Spot A/B Test to compare creatives in a mobile app.
   - Select Web A/B Test to compare creatives on a website.
   
   When you create a task, it has a Designing status, which indicates that the task is still being worked on and is not ready to be published.
3. Select the spot where you want your variants to be displayed.
   - If you want to compare the performance of creatives in the same spot, select the spot that you want the task to use. Each creative is denoted as a variant.
   - For a Web A/B Test task, if you want to compare the performance of creatives in a spot set, select the spot set that you want the task to use. Each combination of creatives in the set is denoted as a variant.
   - Avoid selecting spot sets that display a subset of their spots on one web page. The analytics assume that all of the spots in the set are always available simultaneously.

   Note: To guarantee that all of the spots in a set are displayed simultaneously, the values for the spot location details must be identical across all of the spots in the set. Matching the spot location details enables analytics to run successfully on your A/B test or web multivariate test task.
Avoid spots that are used by another active A/B task or web multivariate test task.

4 Click Create Task.

Add Message or Creatives

The Content tab contains the details that are associated with the content that the task delivers. Click Select Content to add variants and set their properties. In the properties pane, complete these actions:

- set the distribution of the variant frequency.
- optimize the test so that the system can change the distribution of variants as the A/B test progresses. Optimizing the test ensures that the best-performing variant gets a larger portion of the distribution.
- add or remove variants. After the task is published, variants cannot be added or removed.
  
  Note: When you add a variant, select an existing message or creative for that variant. Alternatively, you can create a message or creative. To create a message or creative, click New Message or New Creative. The message or creative that you create is automatically added to the task.

- rename variants.
- change the champion. After the task is published, the champion cannot be changed.
- set impression limits.
- change the creative for a variant. After the task is published, the variant's creative cannot be changed.

Add a Target Audience

On the Targeting tab, set the criteria that define the target audience for the content that the task delivers. Previously defined segments, events, and data views can be selected as criteria.

Note: You must define a login event type if you have tasks that depend on segments with data from logged-in users.

Criteria can be used to include or exclude people from the target audience.

- Add criteria to the Eligible page to specify which people to include in your target audience.
- Add criteria to the Exclusions page to specify which people to exclude from your target audience.

If no criteria are added to either the Eligible page or the Exclusions page, then the target audience consists of everyone.

To add eligibility or exclusion criteria:

- Select All of the following to include members who meet all of the criteria in a group. Or, select Any of the following to include members who meet one or more of the criteria in a group.
- Click to view a summary of the criteria.
- Click to make a copy of the criteria.
- Click or to move criteria up or down in the list.
- Click to create a group for a set of criteria.
- Click to add criteria. In the Select Criteria window, select the criteria to add. In addition, you can use customer lists that have been imported from other sources, such as SAS Marketing Automation.

Note: For mobile in-app, mobile spot, and web targeting, when you add Browser and Device to your criteria, only the people who are using that browser or device during the current session are included in the target audience. For example, if you add Chrome as the browser, only the people who are using Chrome during the current session are eligible to be included in the target audience.
When you add a spot attribute that contains a URL query string parameter, the value of that parameter needs to be decoded for multi-byte character sets (MBCS). If you are adding a URL query string, the value should be encoded for MBCS.

Note: Depending on the task type, you can select only one segment on the Eligible page, and one segment on the Exclusions page. If you do not add criteria, no content is delivered.

Set Metrics

Metrics measure events that the system can detect such as a person clicking on a spot in a web page. Add metrics to measure the success of the content being delivered by the task. Add a primary metric and additional secondary metrics on the Insights tab.

The primary metric measures conversions to determine the success of the task. A secondary metric measures other benchmarks that you are interested in. A task must have one primary metric. A task can have multiple secondary metrics. Each secondary metric can have only one data view or event.

By default, a task is created with a Click Through primary metric. To change the metric:

1. Select the metric and click .
2. Click + to add conditions to the existing metric. For example, for a Click Through metric, you can select a particular creative as an attribute condition. The primary metric would be a click-through response to that creative.
   
   Note: Attributes are joined by an AND operator. Make sure that you do not define conflicting attributes that result in a condition that cannot be met.
3. Click to select a different data view or event.
4. To mark this metric as a contact or response that can be tracked and used for reporting and future targeting, select Classify this selection. Classifying an event enables you to compare contacts and responses across creatives and channels. You can personalize future messages and creatives. You can also use the information to segment customers. You can classify selections in both primary and secondary metrics.

   To record the number of times that a customer interacts with a creative or a spot, select Mark this selection as a contact. This information is available as contact history for SAS Marketing Automation, SAS Real-Time Decision Manager, and other applications.

   To mark this metric as a response to a creative, select Mark this selection as a response. Enter an Associated value to identify the type of response. For example, enter blue to track the customer response to an image of a blue shirt.
5. Select Stop delivery after conversion to stop delivering creatives when the primary metric for the task is met.

   When delivery of the creatives stops, that same spot might switch to displaying creatives from another task. If there is no other task delivering a creative to that spot, then the spot's default creative is displayed. If there is no other task delivering content to that spot and there is no default content defined for that spot, then the spot is empty.

To add secondary metrics:

1. Click Add Secondary Metric.
2. Select the data views or events that you want to add. Each data view or event that you select becomes a secondary metric.

   For example, you could create multiple secondary metrics that are Click Through events. Each metric could have a different creative as an attribute condition. Each secondary metric would be a click-through response to a different creative.
To change existing metrics, select a metric and click [ ] . To delete a metric, select the metric, and click [ ] .

**Schedule and Start Your Task**

When you finish updating your task, you can mark the task ready, publish the task immediately, or set a schedule for the task.

On the **Orchestration** tab, take these actions:

- Click **No schedule** if you plan to publish the task manually.
- Click **Set a schedule** to set a time period that the task is active.
  
  - Select a time zone. For example, you might want to select a time zone that is different from the default if the task is targeted to a specific locale. By default, the time zone is the same as the time zone that is set for the tenant. If a valid time zone is not set for the tenant, the default time zone is UCT.
  
  - Click **Single occurrence** to specify a single time span that the task is active.
  
  - Select a start date and an end date for the task.
    
    Note: If you select **Single occurrence**, the start date cannot be edited after the task is published.

- Click **Recurrence** to specify a recurring task. Click [ ] .
  
  Specify these details for a recurring schedule:

  - **Start time** is the start time for the first occurrence.
  
  - **Duration** specifies the amount of time that the content is available for each occurrence. For example, a task might start every week on Monday, and continue for four days.

  - **Frequency** specifies that the schedule for the recurrence. If you click **Weekly**, click the day for each occurrence. You can select multiple days in each week. If you click **Monthly**, select the numbered day or the weekday for the recurrence. For example, you can select the 10th day of each month or the second Tuesday of each month.

    Note: You can edit the weekly or monthly frequency after the task is published and the start date has passed. The recurrence must occur within the start and end dates.

  - **Range of recurrence** specifies the start and end dates, or that the recurrence continues without an end date.

  - **Extend metrics analysis** continues collecting data after the last occurrence. Select the number of days to extend data collection. The default value is 7 days. For example, if you use the default value, and the **Start time** is 9:00 PM, data collection continues until 9:00 PM seven days after the **End by** date.

    Customers might respond several days after the last occurrence. You can extend the time for data collection in order to more effectively measure task performance.

    During the extended period of data collection, the status is Active - Metrics Only. The status changes to Complete when the **Extend metrics analysis** period is over.

- Select **Mark Ready** to change the status from Designing to Ready. A Ready status indicates that this item is ready to be published. When you are ready to promote an item from a Ready status to an Active status, click **Publish**.

  Note: When you publish an item, you are prompted to publish any dependent items that are marked Ready.

Items with a Ready status can be changed back to a Designing status by clicking **Return to Designing**. Changing this status to Designing prevents the item from being published.

Note: If your item has a Ready status and a start date, the item is not automatically published when the start date is reached. For example, if you are creating a task, it must be published in order for the start date to activate the task.
Select **Mark Ready and Publish** to change the status from Designing to Active. Items with an Active status cannot be changed back to Designing.

Changes to a scheduled or active task are not automatically propagated to the published version of the task. You must republish the task after you save it to resolve the Out of Sync status. Otherwise, the task stays out of sync with the published version and the updates are not delivered.

When the end date of a task is reached, its status changes to Complete. Completed tasks cannot be modified. The task stops any associated data collection and makes the task’s content unavailable. In addition, any unsaved changes are lost.

Note: A recurring schedule is not available if the task is included in an activity.

---

**Test Activity Paths**

Use an A/B Test node to test activity paths against each other.

1. Click + in the activity map and select **A/B Test**. An A/B Test node cannot be the first node in an activity map.

2. On the **Node Details** tab of the A/B Test node, select **Include control path** to add a control path variant that does not contain any Task nodes or Wait nodes. The control path is compared with the other path variant to determine whether a sequence of tasks nets a higher return than no tasks.

3. Click + to add a new path variant.

4. Select the path variant that you want to mark as the champion and click  

5. Click  to set the distribution for each path variant.

6. After you define the path variants, you can add Task and Wait nodes to the path variants in the A/B Test node. Random selection is used to assign the proper percentage of customers to each path variant.

7. Click the **Insights** tab in A/B Test properties to assign a primary metric.
Import a Data Descriptor through the REST API

This tutorial for SAS Customer Intelligence 360 explains how to import a data descriptor through the REST API.

About Data Descriptors

Before you can import data, you need to define the basic layout of the data and its contents in a data descriptor. Data descriptors are JSON objects that describe the structure and the type of data items that are contained in a data set. An import descriptor is a data descriptor that is used only to describe data that is imported. When you upload data into SAS Customer Intelligence 360, you choose an import descriptor that already exists in the system.

Import descriptors contain these parts:

- top-level attributes. These attributes apply to the entire descriptor. They define basic information (such as name and description) and specific implementation settings (such as targeting availability).
- dataItems object. This is a JSON object that contains a list of one or more data items. In an import descriptor, data items are definitions of each field (column) that exists in your data set. Each data item can have its own set of attributes that define how the item is used by the system.
For example, assume you have a data set with three columns of information: login, name, and email. The import descriptor would have a `dataItems` object with three defined items:

```json
{
  "name": "customer_tables",
  "description": "Sample import descriptor for customer tables",
  "type": "customer",
  "dataItems": [
    {
      "name": "login ID",
      "label": "Login",
      "description": "Customer login ID",
      "type": "STRING",
      "tags": [],
      "excludeFromAnalytics": true,
      "identityType": "login_id",
      "identity": true,
      "segmentation": true
    },
    {
      "name": "name",
      "label": "name",
      "description": "Customer name",
      "type": "STRING",
      "tags": ["DEMOGRAPHICS"],
      "excludeFromAnalytics": true,
      "channelContactInformation": true,
      "segmentation": true
    },
    {
      "name": "email",
      "label": "email",
      "description": "Customer email",
      "type": "STRING",
      "tags": ["DEMOGRAPHICS", "EMAIL_CONTACT"],
      "excludeFromAnalytics": true,
      "channelContactInformation": true,
      "segmentation": true
    }
  ]
}
```

For examples of data descriptors and corresponding data samples, see “Sample Data Descriptors and Data” in *SAS Customer Intelligence 360: User’s Guide*.

**Create the Import Descriptor**

To create an import descriptor:

1. Open a text editor and create a basic template for your descriptor. You can use text similar to this example:

```json
{
  "name": "",
  "description": "",
  "type": "",
  "dataItems": [
    {
      "name": "",
      "description": "",
      "type": "",
      "dataItems": [
        {
          "name": "",
          "description": "",
          "type": "",..."
2 Define the top-level attributes. For more information, see “Import Descriptor Attributes” in SAS Customer Intelligence 360: User’s Guide.

3 Define a data item for each column of your input data. For more information, see “Data Item Attributes” in SAS Customer Intelligence 360: User’s Guide.

4 (Optional) Modify attributes to use merge tags with imported data. Merge tags enable you to personalize messages and creatives for specific members of the audience. You can use merge tags to dynamically retrieve personalized information about your recipient (such as his or her first name). This information can then be used to customize the content of a task.

To make your imported data available to merge tags, set these properties in the data descriptor:

a Add the EMAIL_CONTACT field tag to a data item that contains email addresses.

b Set the channelContactInformation attribute to true for the data item.

**TIP** If you have data that could be used for merge tags but are unsure, add the channelContactInformation property just in case you do decide to use the data later.

5 (Optional) Modify attributes for segmentation. Set these attributes to control how SAS Customer Intelligence 360 uses your data in segment discovery, segment creation, and targeting:

a Set the type attribute for the data descriptor object (the top-level element) to customer.

b For best results, set these values for each dataItems property in the data descriptor:

   **Table 11.1 Property Settings for Segmentation**

<table>
<thead>
<tr>
<th>Property</th>
<th>Recommended Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>segmentation</td>
<td>true</td>
<td>Enables an item to be used as criteria when you define a segment in the UI.</td>
</tr>
<tr>
<td>excludeFromAnalytics</td>
<td>false</td>
<td>If the value is true, then analytics cannot view the property. So, the user record cannot be part of a discovered segment criteria or segment profiles. Segment profiling still runs using that criteria to define the segment and the population, but that record is not part of the resulting analysis.</td>
</tr>
</tbody>
</table>
**Import Customer Data**

This video tutorial for SAS Customer Intelligence 360 explains how to import customer data with an existing data descriptor.

See the video here: Import Customer Data.

---

**Upload Data Through the REST API**

This tutorial for SAS Customer Intelligence 360 explains how to upload customer data and location (geofence or geobeacon) data through the REST API. This data can be used in other parts of SAS Customer Intelligence 360 for targeting, defining segments, and so on.

**Prerequisite**

Before you can upload data, ensure that you define your data descriptors. If you need to create a data descriptor, see “Import a Data Descriptor through the REST API” on page 113.

**Get the Data Descriptor**

The REST call to create a data descriptor returns an ID that can be used to access the descriptor in other calls.

Use this REST call to get the data descriptor:

```
GET https://design-<server>/SASWebMarketingMid/rest/descriptors/
```

Follow these guidelines when you submit a REST call:

- When you include JSON data in the body, set the Content-Type header value to `application/json`. How you set this value depends on the REST client.
You must be authenticated with SAS Customer Intelligence 360. In most cases you can submit authentication information through your REST client.

The REST call returns a response that is similar to this example:

```
{
    "links": [links removed from example. You can use the links to navigate through resource collections.],
    "name": "descriptors",
    "accept": "application/vnd.sas.marketing.data.descriptor.summary application/vnd.sas.marketing.data.descriptor application/vnd.sas.collection application/json text/plain",
    "start": 0,
    "count": 3,
    "items": [
        {
            "name": "customer",
            "id": "7f995e66-4474-4b9b-b37a-c64796c09bab",
        },
        {
            "name": "geofence_location",
            "id": "dc8947e9-ed62-4b0c-b7bd-f82c52e310f9",
        },
        {
            "name": "contact_preference",
            "id": "7ba72601-24bc-4d61-b325-c8127f760234",
        }
    ],
    "limit": 3,
    "version": 2
}
```

In the sample response, the customer table has a data descriptor ID of 7f995e66-4474-4b9b-b37a-c64796c09bab. This value is used to retrieve the location where you upload the data file.

**Get a Transfer Location**

Use a POST call to get a temporary URL to upload the file.

**Note:** Temporary URLs can be accessed for about 15 minutes before they time out. You can use temporary URLs more than once, but you can always request a new URL if you do not start your upload in the 15-minute window.

**POST**

https://design-<server>/SASWebMarketingMid/rest/fileTransferLocation/

The response should be similar to this example. (Line breaks in the URL string are for readability only.)

```
{
    "signedURL":
        "https://<host>.s3.amazonaws.com/transfers/5/fc80e6ed904e4a9881625b3448153c27x-amz-security-token<token>&AWSAccessKeyId=<access_key>&Signature=n9myRyPf2Fc47Czn14bdvnmsush1%3D"
    "httpMethod": "POST",
    "createdTimeStamp": "2016-01-08T13:47:03Z",
    "expiresTimeStamp": "2016-01-08T14:02:03Z"
}
```
Upload the File with Customer Data

Upload the file with curl with the temporary URL that was generated:

curl -v --upload-file myfile.csv
    "https://<temporary_URL>"

For more information about curl, see https://curl.haxx.se/.

Note: Before you upload customer data, make note of these guidelines:

- Only CSV files are supported.
- As a best practice, ensure that the data for a single customer is in one row only. For example, do not include the same customer on multiple rows with different login IDs.

Initialize the Import Process

After the data file is uploaded, use this REST call to create an import request:

POST
http://design-<server>/SASWebMarketingMid/rest/descriptors/<import_descriptor_ID>/imports

In the body of the request, add JSON data to describe the upload. Here is an example import request:

```
{
    "fileLocation":
        "https://<temporary_URL>"
    "fieldDelimiter": ",",
    "contentName": "Customer Data as of May 2015",
    "fileType": "CSV",
    "recordLimit": 0,
    "headerRowIncluded": true
}
```

The data columns in the CSV file must be in the same order that is specified in the data descriptor. Use a comma to separate the columns.

The JSON data uses the attributes in the following table:

*Table 11.2  JSON Body of POST Call to Import Data*

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>fileLocation</td>
<td>String</td>
<td>The temporary URL that is generated when you request the transfer location.</td>
</tr>
<tr>
<td>fieldDelimiter</td>
<td>String</td>
<td>The delimiter that separates columns in the data file. Note: Only commas (,) are currently supported.</td>
</tr>
<tr>
<td>fileType</td>
<td>String</td>
<td>The file type of the data. Note: Only CSV files are currently supported.</td>
</tr>
<tr>
<td>recordLimit</td>
<td>int</td>
<td>(Optional) Specifies the number of records to import. If the value is empty or set to 0, then all of the records are imported.</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>updateMode</td>
<td>String</td>
<td>(Optional) The mode in which the imported data is processed. The mode can be one of these:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- replace: This mode replaces all the data from previous uploads to this descriptor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- append: This mode appends data from the imported file to the customer records that already exist for this data descriptor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- upsert: This mode updates any existing records and appends new records. The upsert mode updates values based on checking data items that have the key parameter set. For more information, see the key attribute in see “Data Item Attributes” in SAS Customer Intelligence 360: User’s Guide.</td>
</tr>
<tr>
<td>headerRowIncluded</td>
<td>Boolean</td>
<td>Set to true if the first row contains header information instead of a data record. Note: Even if you include a header row, the column is not read to determine the placement of columns. The data must be in the same order as the fields in the descriptor.</td>
</tr>
</tbody>
</table>

After you send the import request, the REST API returns an import request ID that you can use to check the status of that request.

### Use the SAS 360 Discover Download API

#### Overview

The SAS 360 Discover Download API enables you to download data that was collected by SAS 360 Discover. After setting up the agent in the user interface, you access this API through a REST client or by using PROC HTTP in SAS.

To set up and use the API:

1. Set up the agent in SAS Customer Intelligence 360.
2. Generate the JSON web token (JWT).
3. Use REST to get a signed URL to download the data. This step is performed only once at the beginning of the process (or whenever the client secret is changed).
   - Here are the types of files that you can download from the API:
     - non-partitioned identity data files
     - partitioned detail data files
     - Discover base table (DBT) files from the report mart
4. Download and process the data file.
Set Up the Agent

To get access to the SAS 360 Discover Download API, you must first set up an agent in SAS Customer Intelligence 360. This agent enables you to generate a JWT that is required to make REST calls to the API.

To set up an agent:

1. Sign in to SAS Customer Intelligence 360.
2. From the navigation bar, click General ➔ External ➔ Access.
3. On the Access page, click to create an agent.
4. Enter a name for the agent, and ensure that the agent is activated.
5. To get the tenant ID and client secret, click Add under Access Key, and then click OK.
   Take note of the following information for the agent:
   - agent name, which is needed for REST calls
   - tenant ID, which is needed for REST calls and to generate the JWT
   - client secret, which is needed to generate the JWT
6. Determine the URL for the API.
   a. The URL is displayed in the Access section of the interface where agents are created and downloaded so that the endpoint is known to the user.
   b. In your REST calls, substitute the SAS 360 Discover Download API string in the following example with your actual host name and path:

   ```
   GET https://<SAS 360 Discover Download API>/marketingGateway/discoverService/
dataDownload/eventData/detail/nonPartitionedData
   ```

Generate the JWT

Access to the SAS 360 Discover Download API is controlled by a JWT that is generated from the tenant ID and a string that is used as a client secret. JWTs are self-contained objects that enable two parties to transmit data securely between them. JWTs are defined by the RFC 7519 standard. They are digitally signed and can be independently verified. For added security, you can also generate a new client secret at any time. If you generate a new client secret, you must also generate a new JWT. To change the client secret, edit the agent defined in the interface and click Replace in the Agent Credentials section. Contact your SAS account representative for more information.

Here are two methods that you can use to generate a JWT:

- an online tool such as JSON Web Token by Stormpath
- a local installation of Python and the pyjwt package

The JWT library must first be installed in your Python installation. To generate a JWT with a local Python installation:

1. Install version 3.x or later of Python (external link).
2. Use the pip command in Python to install the pyjwt package. Navigate to the Python home directory and enter this command:

   ```
   python -m pip install pyjwt
   ```
3 Start Python, and use the interactive Python console to generate a JWT.

The `print()` function of this script displays the value for the JWT in the console window. Use this JWT for authentication when sending REST calls.

Place the Python file that generates the JWT token in the same directory. In SAS Customer Intelligence 360, customize the agent, tenant ID, and client secret that will be included in the file. Right-click the Python file and select IDLE, Run, and Run module. The Python script returns a token. Here is a sample Python script:

**Note:** Although the sample code is written in Python, you can use another language to generate a JWT tenant ID and client secret.

```python
#Using Python 3.4.3
#Also install the jwt library 'pip install pyjwt' from cmdline
#Get clientID and secret from UI agent list.
import http.client
import urllib
import re
import base64
import jwt
clientID = '1838da3a650001349e2fece2'
secret = b'MjAxNzAyNjExMmpjZGZkZjFsYmJsNzBsbWNqM2dnM2dqazNqM2c=
#encode the encoded secret
encodedSecret = base64.b64encode(secret)
#Generate the JWT
token = jwt.encode({'clientID': clientID}, encodedSecret, algorithm='HS256')
print ('Your token is:')
print (bytes.decode(token))
```

4 Provide the tenant ID as the "clientID" attribute in the JWT payload.

5 Use the client secret to encode the payload.

6 The full format of header to be used for providing JWT is: authorization: Bearer <JWT>.

**Send a REST Call to Get the Download Location**

After you have generated the JWT, use a REST call to get a list of data files and schema files (in JSON format) to download. You can issue REST calls from a REST client (such as REST Client for Firefox or the stand-alone Insomnia REST Client), the PROC HTTP method in SAS, or a command line application such as curl.

Generally, the URL for a REST call looks similar to this example:

```
GET https://<SAS 360 Discover Download API>/discoverService/dataDownload/eventData/detail/<download_type>?params...
```

Use these guidelines to construct the URLs:

- The protocol for the REST call is HTTPS.
- The host address for the SAS 360 Discover Download API depends on the region in which your tenant is hosted.
- With each REST call, be sure to include the JWT in the header or send the JWT through a parameter. The JWT can be passed to the API by using one of these methods:
  - In SAS, specify the header statement in PROC HTTP.
  - Specify the JWT in the header option or header tab of the REST client that you are using. For more information, see the documentation for your REST client.
  - If you are using curl to send REST calls, specify the JWT with the `-H` parameter.
The URL string for the REST call depends on the data that you want to download.

### Set Up Mobile Applications

This tutorial for SAS Customer Intelligence 360 explains how to create and manage mobile applications (apps).

### Create Mobile Applications

Before you begin working with your application, you need to create and register your mobile application.

1. Click **General Settings** from the navigation bar and select **Content Delivery → Mobile Applications**.
2. Click 🔽.
3. Specify the application name and ID. The system uses the application ID to associate the application with the mobile events and spots that you create. The application ID must be unique.
4. Select whether you want the data collection status to be active or inactive. Selecting inactive stops the collection of data for the mobile app.
5. Enter the required credentials for Apple or Google notifications:
   - Click **Add** in the **Apple Production Certificate and Key** section. Enter the Apple Push Services production certificate and key, and then click **OK**. For more information about setting up your iOS device, see the appropriate Apple Developer website.
   - Click **Add** in the **Apple Development Certificate and Key** section. Enter the Apple Push Services development certificate and key, and then click **OK**. For more information about setting up your iOS device, see the Apple Developer website.
   - Click **Add** in the **Firebase Cloud Messaging Server Key** section. Enter the Firebase cloud messaging server key, and then click **OK**. For the most recent information about registering and setting up your mobile app on Android, see the Firebase Developers website.
6. Click **Done**.

After you have established a certificate and a key for your mobile app, you can replace or remove them by clicking the appropriate button.

### Download the SDK Framework for a Mobile Application

SAS Customer Intelligence 360 enables you to download an SDK framework that is preconfigured to work with a registered app. The properties files that you download include information such as the tag server URL, the application ID, and custom attributes. These properties files enable SAS Customer Intelligence 360 to communicate with your app and collect data about its usage and interactions with customers.

After you download the SDK framework for your registered app and integrate the SDK framework into your app code, you can start collecting data about app behavior such as the events and ads that are displayed in the app.

To download and activate the mobile SDK for SAS Customer Intelligence 360:

1. Open SAS Customer Intelligence 360.
2. Click **General Settings** from the navigation bar and select **Content Delivery → Mobile Applications**.
3 Click **Select** and select an application for which you want to download a SDK framework. The date the app was last modified is displayed.

4 Click 🗑️. An SDK ZIP file (SASCollector-<applicationID>.zip) downloads to your workstation for the application that you selected. Unzip and save the file to a folder. The ZIP file includes SDK files for iOS and Android apps.

A list of the mobile apps is provided with the last modified date displayed.

To delete an app, select the app and click 🗑️.