Project Pane

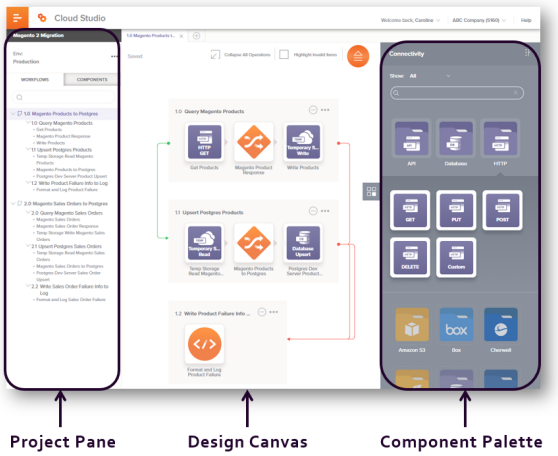
Introduction

The project pane is the panel on the left of the project designer where you can view and manage various parts of an open project, such as project settings and project components.

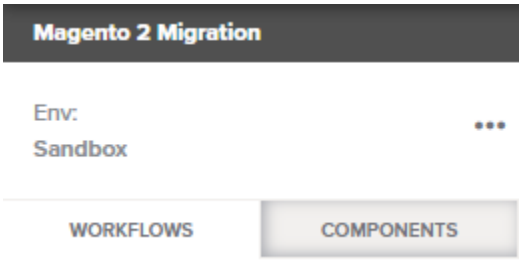
> **TIP:** Additional project management tools are available from the Management Console. For more information, see Projects.

Accessing the Project Pane

To access the project pane, first open a project. In an open project, the project pane is displayed on the left of the project designer:



The project pane contains the project name, environment name, actions menu, and project navigator, which contains the **Workflows** and **Components** tabs:



- **Project Name:** The project name appears along the top of the project pane. To rename the project, click the project name to position the cursor on the project name for you to make any edits as necessary:

  The project name must be unique for each environment, and cannot already be in use as a Design Studio project name in the same environment.
- **Environment:** The environment where the project is located is displayed.
- **Actions:** The actions menu icon ••• at the top of the project pane opens a menu that provides these options:

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- Operation Actions
- Operation Dependencies and Deletion
- Operation Deployment and Execution
- Operation Logs
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- Operation Schedules
- Operation Validity
- Project Components
- Project Creation and Configuration
- Project Deployment
- Project Migration
- Projects (Management Console)

Related Topics

- Cloud Studio
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- Introduction
- Management Console
- Notifications
- Operations
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- Scripts
- Transformations
- Variables

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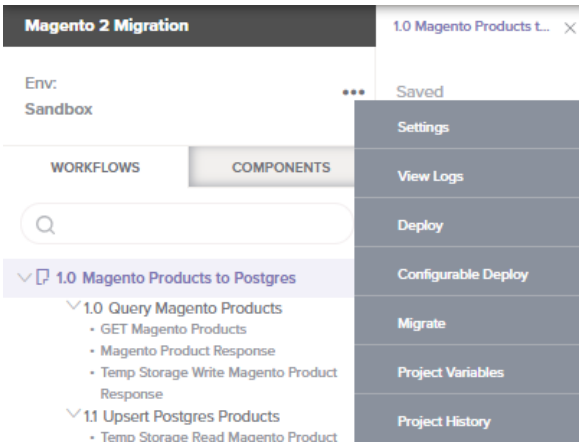

  - **Settings:** This opens the project configuration screen, where you can edit the project name and description, or export or delete the project (see Editing the Configuration und er Project Creation and Configuration).
  - **View Logs:** This opens the operation log screen, which includes logs for any operations that have been deployed and executed within the project (see Operation Logs).
  - **Deploy:** This deploys the entire project (see Deploying under Project Deployment).
  - **Configurable Deploy:** This opens the project deployment screen, where you can select project components to deploy (see Deploying under Project Deployment).
  - **Migrate:** This opens the project migration screen, where you can choose the target environment (see Project Migration).
  - **Project Variables:** This opens the project variables screen where you can view, edit, and add new project variables (see Project Variables).
  - **Project History:** This opens a panel on the right side of the project designer that shows a list of project changes and deployments (see Project History).
- **Project Navigator:** The project navigator refers to the part of the project pane containing the **Wo rkflows** and **Components** tabs:

  - **Workflows:** This tab displays a hierarchically organized view of the project's workflows, operations, and components used within each operation (see Workflows Tab later on this page).
  - **Components:** This tab displays all project components grouped by type of component (see Components Tab later on this page).

Workflows Tab

Under a project's hierarchical tree, workflows are the highest hierarchical level, followed by operations, and finally by project components used as steps within an operation (made up of activities, transformations, and/or scripts).

In the **Workflows** tab, workflows appear at the top with a page icon to the left of the workflow name, with expandable operations indented below each workflow. Both workflows and operations are auto-assigned numbers to represent their position in the tree. When each operation is expanded, the project components used as steps in the operation appear in a bullet list:

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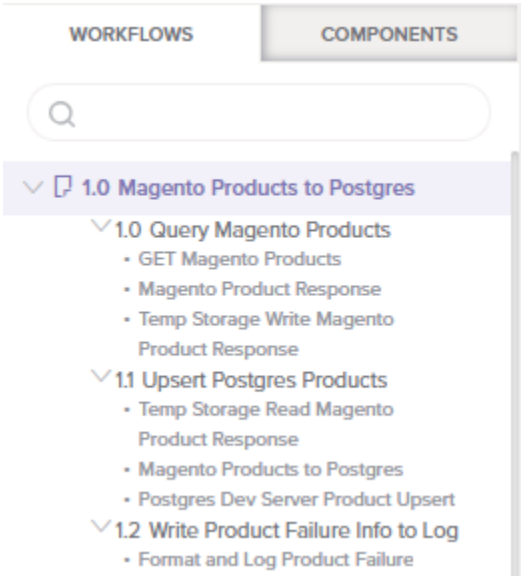


Items in the **Workflows** tab are collapsed by default. To expand/collapse workflows or operations, click the disclosure triangles to the left of the workflow or operation name. As you work on projects, Cloud Studio remembers the display states that a given user was last using for a given project, including whether the categories in the project navigator are expanded or collapsed.

To search within the **Workflows** tab, use the search box to enter a single keyword or keyword string. The keyword string will be become bolded and purple in color within the name of the component to identify it within the tab:

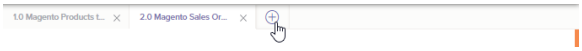
You can perform a number of other actions from the **Workflows** tab, including these:

- **Workflows:** Open, deploy, configurable deploy of, rename, view dependencies of, view logs of, delete, add to a group, view validation errors of, and reorder workflows.
- **Operations:** Select, edit settings of, deploy, deploy and run, configurable deploy of, view logs of, delete, rename, view dependencies of, add to a group, view validation errors of, and reorder operations.
- **Components:** Select, view/edit, rename, delete, rename, view dependencies of, deploy, configurable deploy of, add to a group, and view validation errors of components used as operation steps.

Workflows

This section describes the actions you can take from the **Workflows** tab related to workflows, including opening, deploying, configurable deploying of, renaming, viewing dependencies of, viewing logs of, deleting, adding to a group, viewing validation errors of, and reordering workflows.

New workflows are created from along the top of the design canvas:



Open an Existing Workflow

To open an existing workflow on the design canvas, click the workflow name. The selected (open) workflow becomes highlighted in the project pane with a light purple background:

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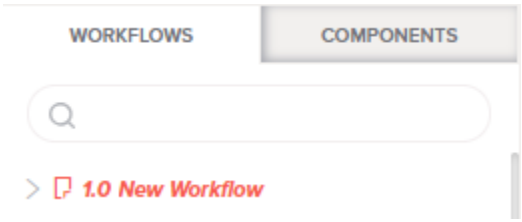
You can also open workflows by selecting an operation or operation step within the workflow in the **Workflows** tab.

View Workflow Validation Errors

When invalid items are toggled on (see Validation Errors under Workflow Validity), the names of invalid workflows appear in italics and the color red:



For information about identifying invalid workflows and resolving errors associated with them, see Workflow Validity.

Menu Actions

Hover over any workflow name, then click the actions menu icon ••• to open a menu of actions for that workflow:

- **Deploy:** This deploys the workflow and any components it is dependent on (see Workflow Deployment).
- **Configurable Deploy:** This opens the deployment screen, where you can select project components to deploy (see Workflow Deployment).
- **Rename:** This positions the cursor on the workflow name in the project pane for you to make edits.
- **View Dependencies:** This changes the view in the project pane to display any other parts of the project that the specific workflow is dependent on (see Viewing Dependencies under Workflow Dependencies and Deletion).
- **View Logs:** This opens the operation log screen, which includes logs for any operations contained in the workflow that have been deployed and executed, as well as any operations linked from the workflow that have been deployed and executed (see Operation Logs).
- **Delete:** This is used to permanently delete the workflow and any operations within the workflow. Note that other project components used as steps in the operation or in support of the operation will not be deleted by this action (see Deleting under Workflow Dependencies and Deletion).
- **Add to group:** This opens a prompt to create a new custom group or to add the workflow to an existing group. Custom groups are an organizational tool to help organize a project (see Component Groups).

Reorder a Workflow

To reorder workflows, drag a workflow name to another location in the project tree:

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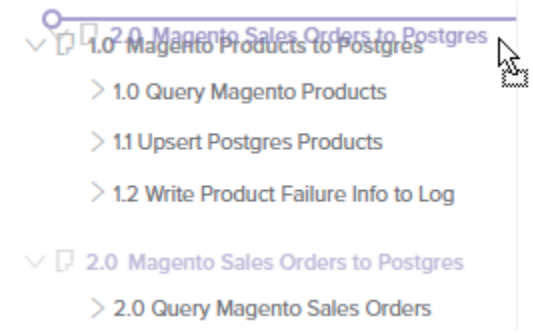


This action will have a cascading effect of renumbering the workflows "below" it in the tree and the operations contained within each workflow.

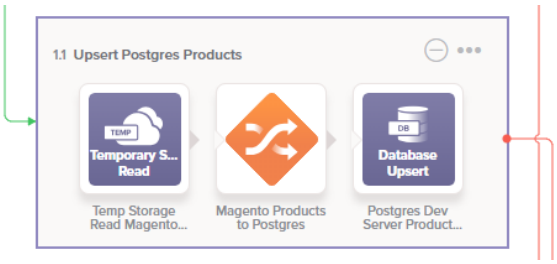
Operations

This section describes the actions you can take from the **Workflows** tab related to operations, including selecting, editing settings of, deploying, deploying and running, configurable deploying of, viewing logs of, deleting, renaming, viewing dependencies of, adding to a group, viewing validation errors of, and reordering operations.

Select an Operation

To select an operation, click on the operation name in the **Workflows** tab. Once selected, both the operation and the workflow that contains it become highlighted in the project pane with a light purple background:

In addition, the workflow that contains the selected operation opens and the screen auto-scrolls to the selected operation. A purple border outlines the selected operation on the design canvas:



Menu Actions

Hover over any operation name, then click the actions menu icon ••• to open a menu of actions for that operation:

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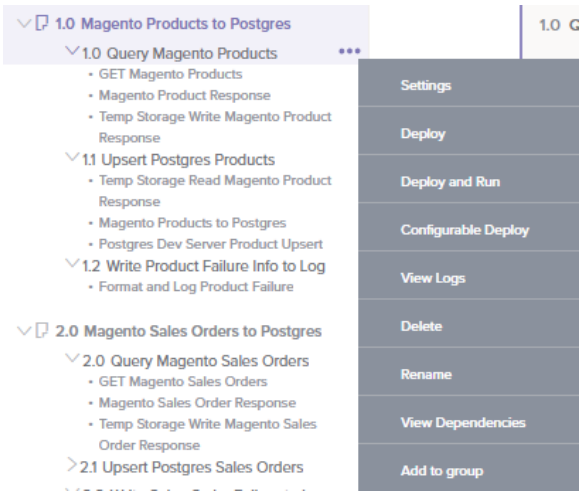
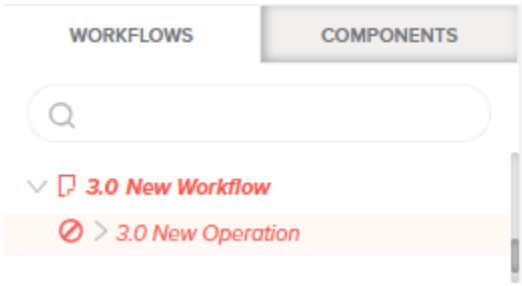


- **Settings:** This opens the operation settings, containing three tabs:
  - **Schedules:** Create and apply schedules to automatically run operations (see Operation Schedules).
  - **Actions:** Configure actions to take upon success or failure of the operation (see Operation Actions).
  - **Options:** Set options such as when the operation will time out, what to log and the timeframe for logging, when the operation will run, or whether to use chunking (see Operation Options).
- **Deploy:** This deploys the operation and any components it is dependent on (see Deploying under Operation Deployment and Execution).
- **Deploy and Run:** This deploys and runs the operation and any downstream (linked) operations (see Deploying and Executing under Operation Deployment and Execution).
- **Configurable Deploy:** This opens the deployment screen, where you can select project components to deploy (see Deploying under Operation Deployment and Execution).
- **View Logs:** This opens the operation log screen, which includes logs for this operation and any child operations that have been deployed and executed (see Operation Logs).
- **Delete:** This is used to permanently delete the operation. Note that other project components used as steps in the operation or in support of the operation will not be deleted by this action (see Deleting under Operation Dependencies and Deletion).
- **Rename:** This positions the cursor on the operation name in the project pane for you to make edits.
- **View Dependencies:** This changes the view in the project pane to display any other parts of the project that the specific operation is dependent on (see Viewing Dependencies under Operation Dependencies and Deletion).
- **Add to group:** This opens a prompt to create a new custom group or to add the operation to an existing group. Custom groups are an organizational tool to help organize a project (see Component Groups).

View Operation Validation Errors

When invalid items are toggled on (see Validation Errors under Workflow Validity), the names of invalid operations appear in italics and the color red:



For information about identifying invalid operations and resolving errors associated with them, see Operation Validity.

Reorder an Operation

To reorder operations, drag an operation name to another location within or between workflows in the project tree:

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This action will have a cascading effect of renumbering the operations "below" it in the tree.

Components

This section describes the actions you can take from the **Workflows** tab related to components used as operation steps, including selecting, viewing/editing, deleting, renaming, viewing dependencies of, deploying, configurable deploying of, adding to a group, and viewing validation errors of components.

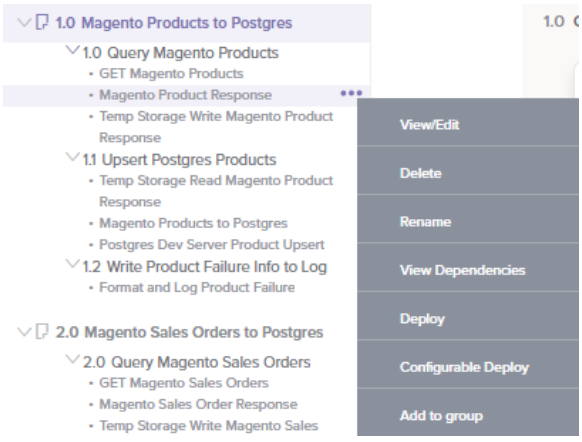
Select a Component

To select a component, click the component name under the operation in the **Workflows** tab. Once selected, both the component and the workflow that contains it become highlighted in the project pane with a light purple background:

In addition, the workflow that contains the selected component opens and the screen auto-scrolls to the selected component. A purple border outlines the selected component on the design canvas:

Menu Actions

Hover over any project component used within an operation, then click the actions menu icon ••• to open a menu of actions for that component:



- **View/Edit:** This opens the configuration screen for the project component. For details on configuration, refer to the respective component under Connectors, Scripts, or Transformations.

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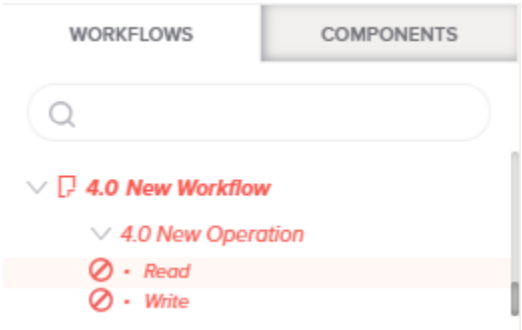
- **Delete:** This is used to permanently delete the project component (see Component Dependencies, Deletion, and Removal).
- **Rename:** This positions the cursor on the component name in the project pane for you to make edits.
- **View Dependencies:** This changes the view in the project pane to display any other parts of the project that the specific component is dependent on (see Component Dependencies, Deletion, and Removal).
- **Deploy:** This deploys the component and any components it is dependent on (see Component Deployment).
- **Configurable Deploy:** This opens the deployment screen, where you can select project components to deploy (see Component Deployment).
- **Add to group:** This opens a prompt to create a new custom group or to add the component to an existing group. Custom groups are an organizational tool to help organize a project (see Component Groups).

View Component Validation Errors

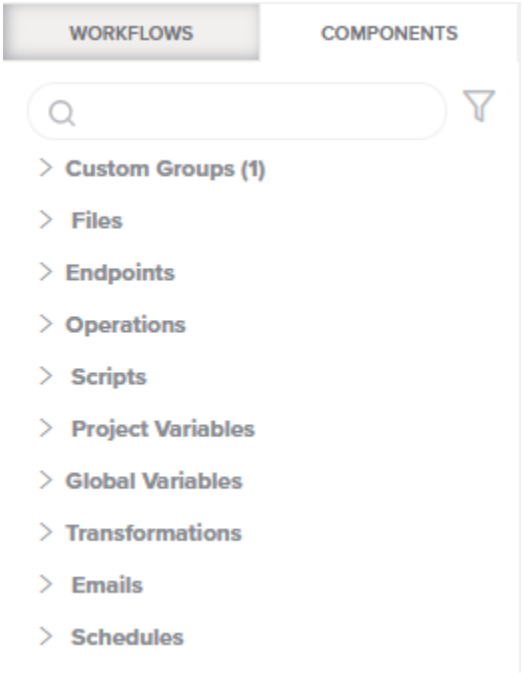
When invalid items are toggled on (see Validation Errors under Workflow Validity), the names of invalid components appear in italics and the color red:



For information about identifying invalid components and resolving errors associated with them, see Component Validity.

Components Tab

The **Components** tab in the project pane displays *all* of the components in the project grouped by type of component. Each category is displayed, regardless of whether it contains any components:



Items in the **Components** tab are collapsed by default. To expand/collapse categories, click the disclosure triangles to the left of the category name. As you work on projects, Cloud Studio remembers the display states that a given user was last using for a given project, including whether the categories in the project navigator are expanded or collapsed.

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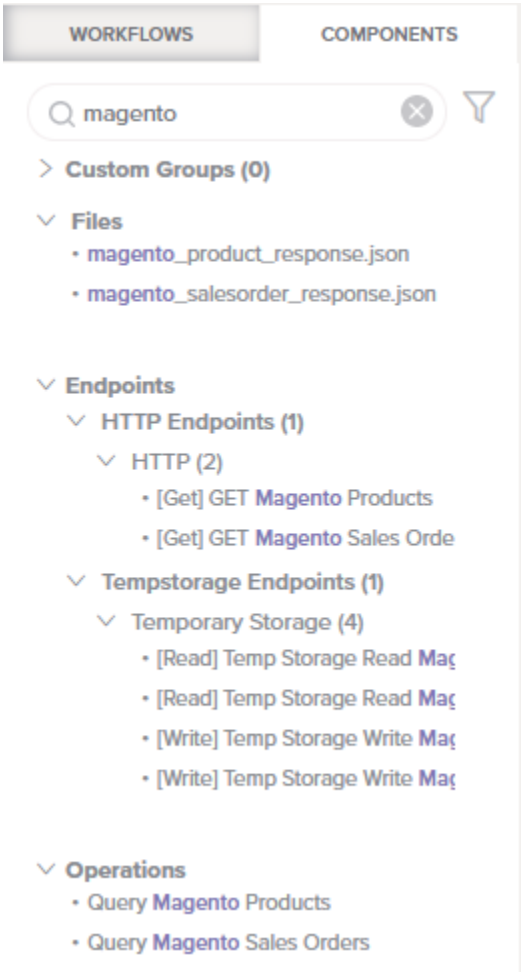
Components may exist independently from workflows and operations, so some components may appear in the **Components** tab that do not appear in the **Workflows** tab.

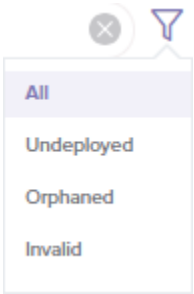
Along the top of the **Components** tab, you can search and filter components to limit those displayed in this tab:

- **Search:** To search within the **Components** tab, use the search box to enter a single keyword or keyword string. The keyword string will be become bold and purple in color within the name of the component to identify it within the tab:



  To clear the search, click the close icon .

- **Filter:** To filter by project component, use the filter icon dropdown to select from one of the following filter options. Once a filter is applied, a filter label will appear listed below the search bar. To return to the **All** view, click the remove icon next to the filter label.



  - **All:** Show all components within the current project.
  - **Undeployed:** Show only components within the current project that have not yet been deployed or have been modified after they have been deployed.

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- **Orphaned:** Show only components that are not referenced by other components in the current project. Orphaned components are also displayed in the project pane with a broken link icon regardless of whether this filter is selected. Orphaned components may also be referred to as unreferenced or unused components.

  > **NOTE:** The orphaned classification is based off of the project as it currently exists in the Cloud Studio project designer and doesn't take into account whether components have been deployed to Harmony.

- **Invalid:** Show only components that are invalid. Invalid components are not able to be deployed. Validation criteria are described in Workflow Validity, Operation Validity, and Component Validity. This filter may be useful to identify invalid components that are also orphaned in case you want to delete the unreferenced component instead of resolving errors.

You can perform a number of other actions from the **Components** tab, including these:

- **Components:** Create, delete unused, view/edit, delete, rename, view dependencies of, deploy, configurable deploy of, add to a group, duplicate, view validation errors of, reuse, and view the number of references of project components.
- **Operations:** Edit settings of, deploy, deploy and run, configurable deploy of, view logs of, delete, rename, view dependencies of, add to a group, view validation errors of, and view the number of references of operations.

In addition, the category of **Custom Groups** is an organizational tool to help organize a project. For more information about this category, see Component Groups.

Components

This section describes the actions you can take from the **Components** tab related to components, including creating, deleting unused, viewing/editing, deleting, renaming, viewing dependencies of, deploying, configurable deploying of, adding to a group, duplicating, viewing validation errors of, reusing, and viewing the number of references of project components.

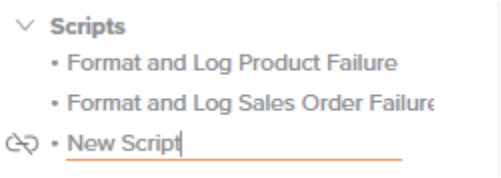
By default, all components within the project are displayed, grouped by type of component. For activities, activity names are preceded by square brackets containing the type of interaction with the data resource that is specific to the activity type (for example, read, write, query, upsert, GET, POST, etc.).

Menu Actions

There are several places within the **Components** tab where actions menus can be accessed:

- **Custom Groups:** The **Custom Groups** category is covered separately under Component Groups.
- **Component Categories:** Hover over the category, then click the actions menu icon to open a menu of actions for that category:

  - **Create new:** This option is available on **Scripts**, **Project Variables**, **Emails**, or **Schedules** and creates a new, unreferenced component of the selected type. Upon creating the component, the cursor is positioned on the component name within the **Components** tab for you to rename the component:



    To edit or perform other actions on the new component, use the component's action menu.
  - **Delete unused:** Available only when applicable, this option is used to permanently delete components of the selected type that aren't referenced by any other components in the current project. These components are displayed with a broken link icon. See Delete under Component Dependencies, Deletion, and Removal.
- **Components:** Under each category, hover over any component name, then click the actions menu icon to open a menu of actions for that component:

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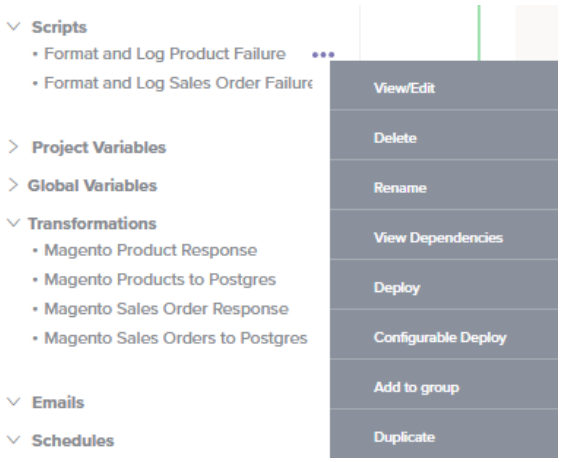
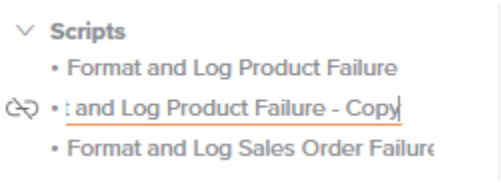


- **View/Edit:** This opens the configuration screen for certain project components, including those listed under **Endpoints**, **Scripts**, **Project Variables**, **Transformations**, **Emails**, and **Schedules**. For details on configuration, refer to the respective component under Connectors, Scripts, Project Variables, Transformations, Notifications , or Operation Schedules.
- **Delete:** This is used to permanently delete the project component (see Component Dependencies, Deletion, and Removal).
- **Rename:** This positions the cursor on the component name in the project pane for you to make any edits as necessary.
- **View Dependencies:** This changes the view in the project pane to display any other parts of the project that the specific component is dependent on (see Component Dependencies, Deletion, and Removal).
- **Deploy:** This deploys the component and any components it is dependent on (see Com ponent Deployment).
- **Configurable Deploy:** This opens the deployment screen, where you can select project components to deploy (see Component Deployment).
- **Add to group:** This opens a prompt to create a new custom group or to add the component to an existing group. Custom groups are an organizational tool to help organize a project (see Component Groups).
- **Duplicate:** This creates a copy of certain types of components, including those listed under **Endpoints**, **Scripts**, **Project Variables**, **Emails**, and **Schedules** as a new, unreferenced component. Upon creating the component copy, the cursor is positioned on the component name within the **Components** tab for you to rename the component:



To edit or perform other actions on the new component, use the component's action menu.

View Component Validation Errors

When using the filter icon dropdown to filter on **Invalid** items, the names of invalid components appear in italics and the color red:

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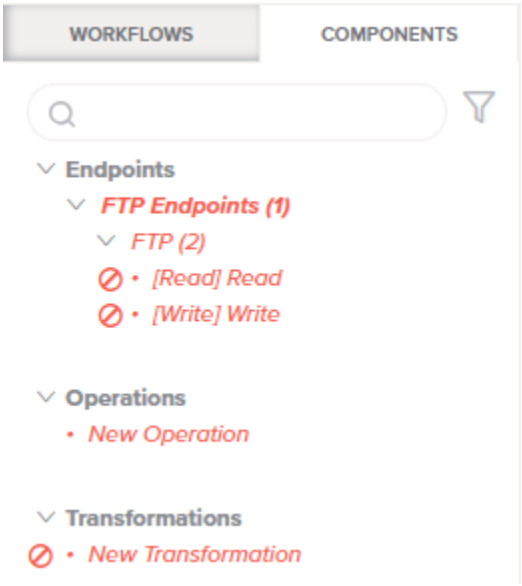
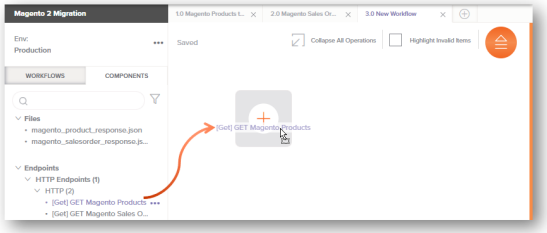


When this filter is on, you can view the validation errors associated with invalid components as described in Operation Validity.

Reuse a Component

Components can be reused either by referencing the same component multiple times, or by creating a copy of an existing component configuration to create a new, independent component.

Most activities and certain types of transformations and scripts can be referenced multiple times as operation steps. To reference one of these types of components as an operation step, drag the component name to a new or existing operation on the design canvas:



Activities, scripts, project variables, email notifications, and schedules can be copied to create a new, unreferenced component using the actions menu option **Duplicate** (described above under Menu Actions).

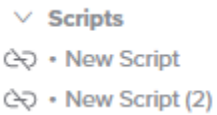
For additional ways that components can be reused and details on referencing components multiple times, see Component Reuse.

View the Number of Component References

A single project component may be referenced by other project components throughout the project. For example:

- A project variable may be referenced in the configuration of an activity or script.
- An email notification may be referenced in the configuration of an operation that has an operation action set to send an email upon success or failure of the operation.
- An activity may be used as an operation step as well as be referenced in a script.

If a component is not referenced by any other components in the current project, it is known as an orphaned component. Orphaned components are displayed in the project pane with a broken link icon to the left of the component name. For example, these two new scripts are not used within any operations or referenced elsewhere within the project:



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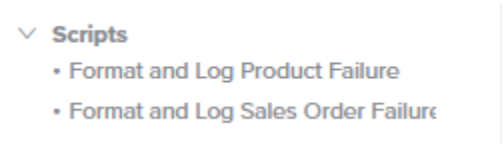
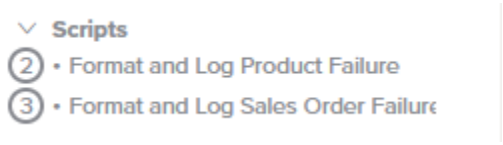
If a component is referenced by only one other component, it is displayed in the project pane without any visual indicator to the left of the component name. For example, these scripts are each used within a single operation:



If a component is referenced by multiple components, the number of components it is referenced by is displayed to the left of the component name, inside a circle. Note that this count is not the number of times the component is referenced; if a component is referenced multiple times by another component, this counts as a single reference. In this example, the first script is referenced both within an operation as well as by another script, and the second script is referenced by one additional script:

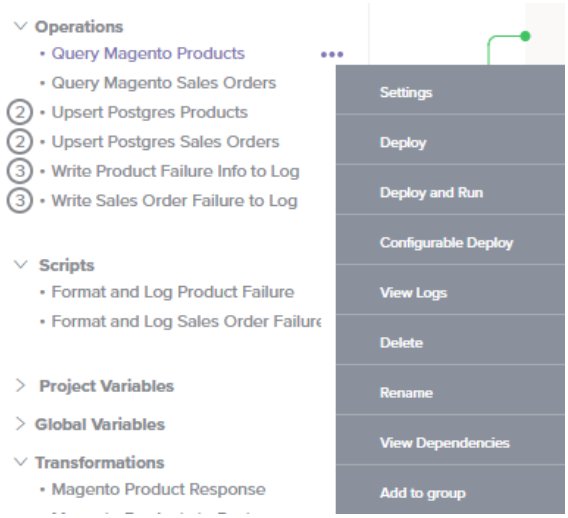


NOTE: The number of references is based off of the project as it currently exists in the Cloud Studio project designer and doesn't take into account whether components have been deployed to Harmony.

Operations

In addition to the actions available for all components, there are additional actions you can take on operations. This section describes the actions you can take from the **Components** tab related to operations, including running, viewing logs of, editing settings of, deleting, renaming, viewing dependencies of, adding to a group, viewing validation errors of, and viewing the number of component references of operations.

Under the **Operations** category, hover over any operation name, then click the actions menu icon ••• to open a menu of actions for that operation:



- **Settings:** This opens the operation settings, containing three tabs:
  - **Schedules:** Create and apply schedules to automatically run operations (see Operation Schedules).
  - **Actions:** Configure actions to take upon success or failure of the operation (see Operation Actions).
  - **Options:** Set options such as when the operation will time out, what to log and the timeframe for logging, when the operation will run, or whether to use chunking (see Operation Options).
- **Deploy:** This deploys the operation and any components it is dependent on (see Deploying under Operation Deployment and Execution).
- **Deploy and Run:** This deploys and runs the operation and any downstream (linked) operations (see Deploying and Executing under Operation Deployment and Execution).

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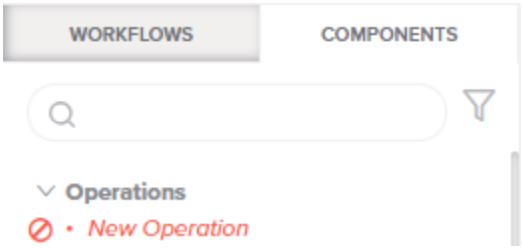
- **Configurable Deploy:** This opens the deployment screen, where you can select project components to deploy (see Deploying under Operation Deployment and Execution).
- **View Logs:** This opens the operation log screen, which includes logs for this operation and any child operations that have been deployed and executed (see Operation Logs).
- **Delete:** This is used to permanently delete the operation. Note that other project components used as steps in the operation or in support of the operation will not be deleted by this action (see Deleting under Operation Dependencies and Deletion).
- **Rename:** This positions the cursor on the operation name in the project pane for you to make any edits as necessary.
- **View Dependencies:** This changes the view in the project pane to display any other parts of the project that the specific operation is dependent on (see Viewing Dependencies under Operation Dependencies and Deletion).
- **Add to group:** This opens a prompt to create a new custom group or to add the operation to an existing group. Custom groups are an organizational tool to help organize a project (see Component Groups).

View Operation Validation Errors

When using the filter icon dropdown to filter on **Invalid** items, the names of invalid operations appear in italics and the color red:



When this filter is on, you can view the validation errors associated with invalid operations as described in Operation Validity.

View the Number of Component References

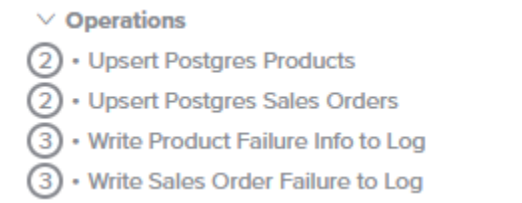
A single operation may be referenced by other project components throughout the project. For example:

- An operation may be referenced in the configuration of a script.
- An operation may be referenced in the configuration of another operation that has an operation action set to run the next operation upon success or failure of the first operation.
- Any operation may be referenced only by the workflow that contains it.

It is not possible for an operation to be orphaned. If an operation exists, it must appear within a workflow somewhere in the project.

If an operation is referenced only by the workflow that contains it, it is displayed in the project pane without any visual indicator to the left of the component name. For example, these operations are each used once within a workflow:

If an operation is referenced by multiple components, the number of components it is referenced by is displayed to the left of the operation name, inside a circle. Note that this count is not the number of times the operation is referenced; if an operation is referenced multiple times by another component, this counts as a single reference. In this example, the first two operations are referenced by two other operations, and the second two operations are each referenced by a third operation:



NOTE: The number of references is based off of the project as it currently exists in the Cloud Studio project designer and doesn't take into account whether components have been deployed to Harmony.

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