

Pixel-perfect Reports

The following content was written by Matt Danda and published on the Qrvey Partner Portal (<https://partners.qrvey.com/docs/admin/Content%20Deployment/overview-of-content-deployment>) in mid-2023.

Overview of Pixel-perfect Reports

The Pixel-perfect Reports Builder enables you to build customizable report templates with precise control over the positioning and style of every element on the layout, down to the individual pixel. Pixel-perfect formatting is important when the output must meet exact specifications, such as in audit reports, tax forms, regulatory documents, shipping labels, and more. This feature also provides rigorous controls for formatting PDF and print output.

To open the Pixel-perfect Reports feature, click the Pixel-perfect Reports icon in the left-hand navigation panel.



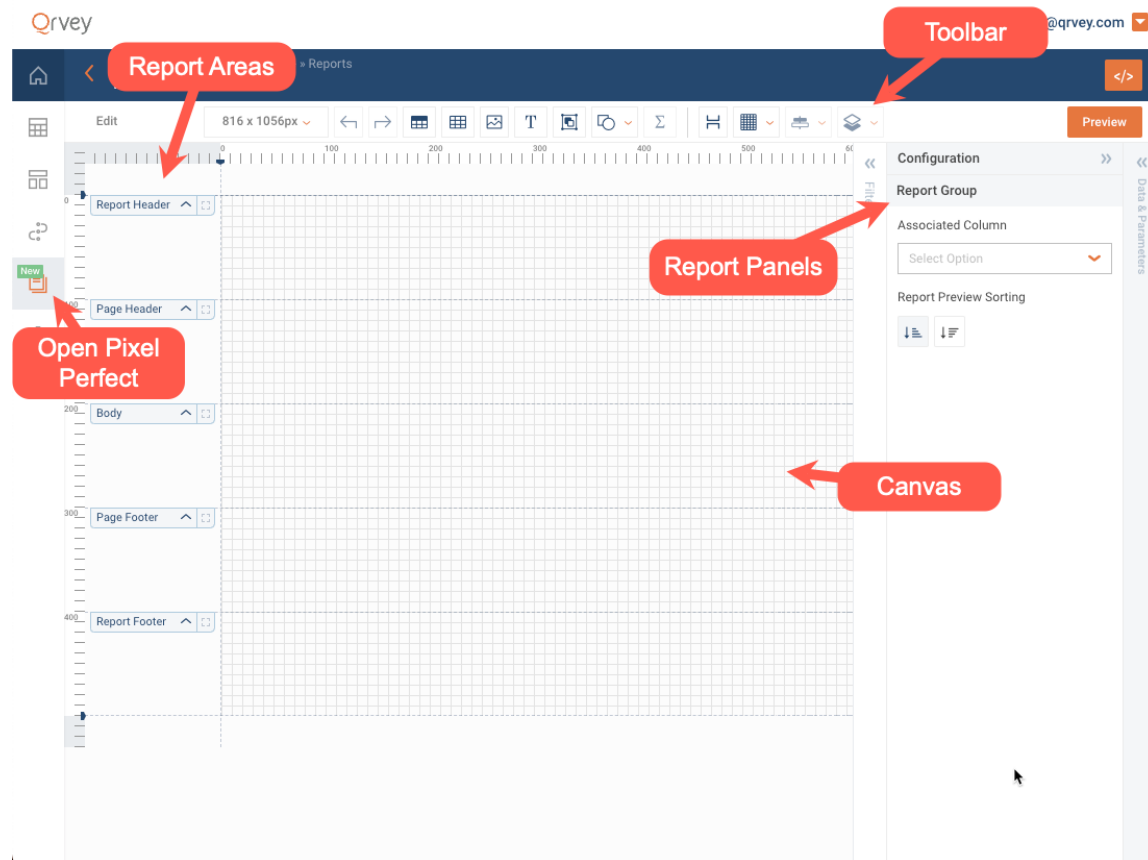
In the report editor, when creating fixed templates, the templates do not contain live data. The Preview or Export feature resolves the values, and the output displays with the complete data using as many pages as needed.

Pixel-perfect Reports shares many familiar features with dashboards, including:

- **Filters.** In the Pixel-perfect Reports tool, filters are configured in the Filters panel. For more information on using filters, see [Introduction to Filters](#).
- **Workflows.** The Send Email action in Workflows/Automation supports Pixel-perfect Reports. For more information, see the "Send an Email" section of [Send Actions](#).
- **Formulas.** You can apply formulas to columns in the dataset. For more information, see [Working with Formulas](#).
- **Embedding.** The Pixel-perfect Reports widget can be embedded in an application, and it supports CLS and RLS security to ensure that end users only have access to specified data. For more information, see [Embedding Overview](#) and [Pixel-perfect Reports Widget](#).

Overview of the Editor

The Pixel-perfect Reports editor provides a variety of tools for creating reports, including designing the layout, setting up datasets, and configuring settings.



The Toolbar at the top of the page provides a variety of components that you can add to the canvas. On the right side, there are several collapsible configuration panels that enable you to configure the report, including its components, datasets, and filters.

The majority of the interface consists of the canvas, on which the report is designed. By default, reports have two headers, two footers, and a body. They are defined as follows:

- **Report Header.** The cover page or header that displays only on the first page of the report.
- **Page Header.** The header that displays on all pages of the report. Note that the Page Header does not display on the cover or back cover, if applicable.
- **Body.** The principal section of the report.
- **Page Footer.** The footer that displays on all pages of the report. Note that the Page Footer does not display on the cover or back cover, if applicable.
- **Report Footer.** The back cover page or footer that displays only on the last page of the report.

Create a New Report

The Pixel-perfect Reports Builder enables you to build customizable report templates with precise control over the positioning and style of every element on the layout, down to the individual pixel.

Before You Begin

Determine which Qrvey application will provide the data in the report. All reports are linked to Qrvey applications.

To Create a New Report

1. Click the **Pixel-perfect Reports** icon on the left-side menu to open the Pixel-perfect Reports dashboard.
2. Click **Create New Report**. The Name Your Report dialog displays.
3. On the Name Your Report dialog, enter a Name and Description in the fields provided.
4. Click **Next**. The Page Setup dialog displays.
5. On the Page Setup dialog, select the following options:
 - Paper Size
 - Units of Measure
 - Width
 - Height
 - Orientation
6. Click **Finish**. The new report displays in Edit mode. You may now begin designing your report.

Note: You can resize the height of the canvas of each report area (Report Header, Page Header, Body, etc.) by dragging their horizontal dividing lines.

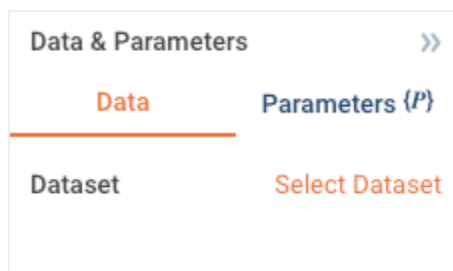
Setting Up Data and Parameters

The Data & Parameters panel enables you to set up the datasets used in your report. You can only select one dataset per report. You must create parameters before you can add them to a report.

Parameters enable you to filter data and display information in the report. They are user-defined variables that are only available inside the report.

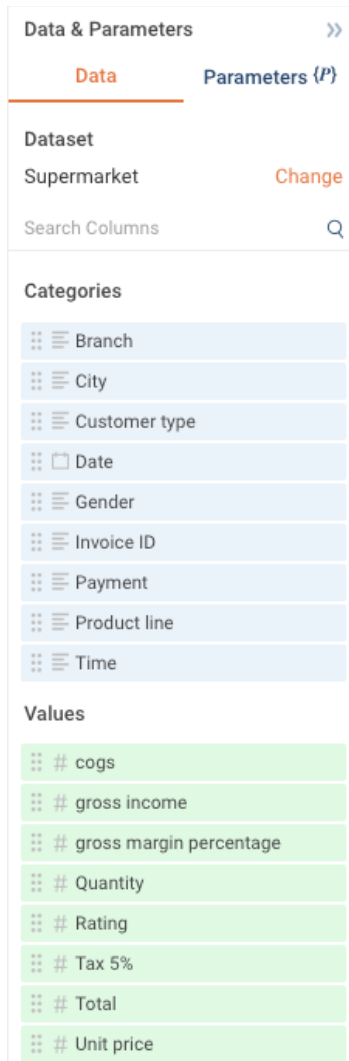
To Select Your Dataset

1. Before you can create a parameter, you must select the dataset. On the right-side menu, click to display the **Data & Parameters** panel.



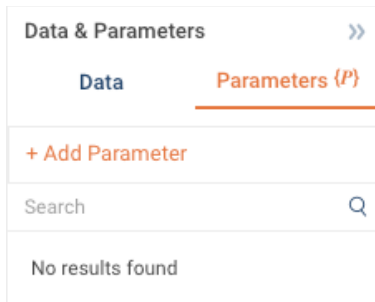
2. Click **Select Dataset**. The Select Dataset dialog displays. The functionality to create a connection is the same as the Connections feature in Qrvey Composer. For more information, see [Connections Overview](#).

Once you've established the connection, the dataset columns display in the panel as Categories and Values. They are now available for use in the report.



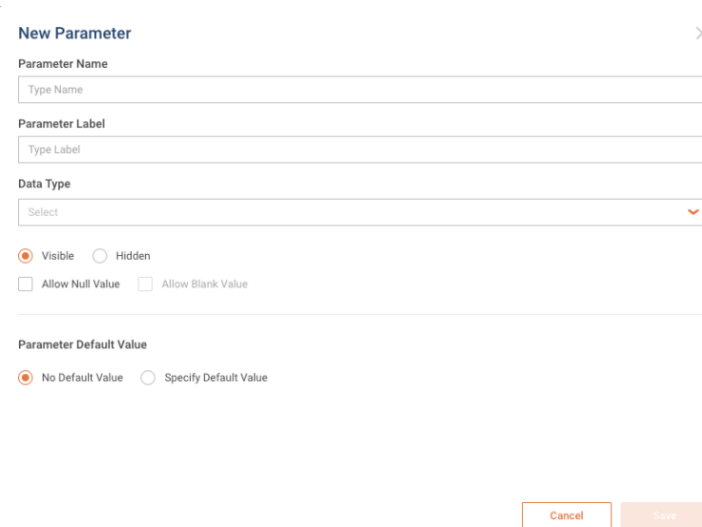
To Create a Parameter

1. Display the **Parameters** tab of the Data & Parameters panel.



The image shows a panel titled "Data & Parameters" with a double arrow icon. It has two tabs: "Data" and "Parameters (P)". The "Parameters (P)" tab is selected and highlighted with an orange underline. Below the tabs is a button labeled "+ Add Parameter". Underneath is a search bar with the placeholder text "Search" and a magnifying glass icon. At the bottom, it says "No results found".

2. Click **Add Parameter**. The New Parameter dialog displays.



The image shows a "New Parameter" dialog box with a close button (X) in the top right corner. It contains the following fields and options:

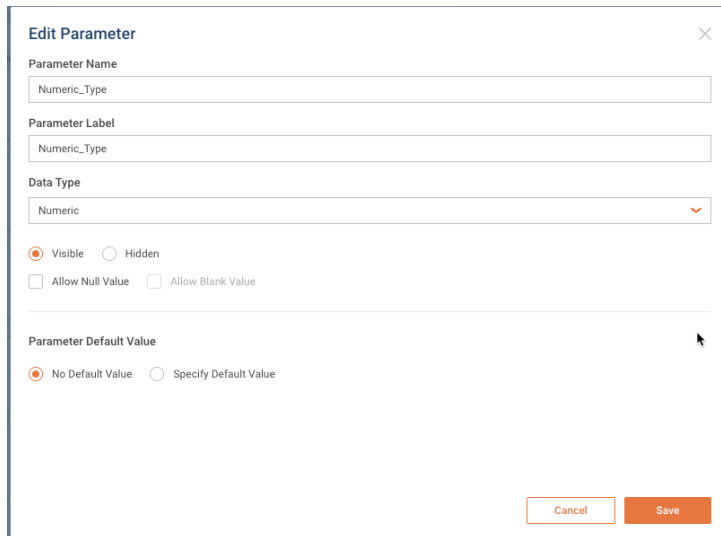
- Parameter Name:** A text input field with the placeholder "Type Name".
- Parameter Label:** A text input field with the placeholder "Type Label".
- Data Type:** A dropdown menu with "Select" and a downward arrow.
- Visibility:** Two radio buttons: "Visible" (selected) and "Hidden".
- Allow Null Value:** A checkbox.
- Allow Blank Value:** A checkbox.
- Parameter Default Value:** Two radio buttons: "No Default Value" (selected) and "Specify Default Value".

At the bottom right, there are two buttons: "Cancel" and "Save".

3. Complete the fields provided and click **Save**. For information on the properties, see the next section, "To Edit a Parameter".

To Edit a Parameter

1. Display the New Parameter or Edit Parameter dialog for the parameter.



The screenshot shows the 'Edit Parameter' dialog box. It has a title bar with a close button (X). The dialog contains several fields and options:

- Parameter Name:** A text input field containing 'Numeric_Type'.
- Parameter Label:** A text input field containing 'Numeric_Type'.
- Data Type:** A dropdown menu with 'Numeric' selected.
- Visibility:** Two radio buttons: 'Visible' (selected) and 'Hidden'.
- Allow Null Value:** A checkbox that is unchecked.
- Allow Blank Value:** A checkbox that is unchecked.
- Parameter Default Value:** Two radio buttons: 'No Default Value' (selected) and 'Specify Default Value'.
- Buttons:** 'Cancel' and 'Save' buttons at the bottom right.

2. Enter the **Parameter Name** in the field provided. It must be unique, and it cannot use special characters.
3. Enter helpful text in the **Parameter Label** field. This text displays in the parameter's preview panel.
4. In the **Data Type** dropdown, select **Numeric**, **Text**, or **Date Time**.
5. Select whether the parameter is **Visible** or **Hidden**. If set to Visible, you will be prompted to provide a value when using the Preview feature. If set to Hidden, you will either need to define a default value or select **Allow Null Value**.
6. To enable the parameter to accept an empty/null value, select **Allow Null Value**.
7. To enable the parameter to accept an empty string as a value, select **Allow Blank Value**. This option is only available for Text parameters.
8. To define a default value, select **Specify Default Value**. Enter the desired value in the Default Value field.
9. Click **Save**.

Designing Reports

The Pixel-perfect Reports Builder provides a variety of design and layout options for formatting reports.

Insert an Image

You can add images to your report by uploading them or linking to a URL.

To insert an image

1. Click the **Image** icon in the toolbar.
2. Click on the canvas to insert the image object. Size and position the bounding box as desired. The Configuration panel updates to display Image Configuration options.
3. In the Image Configuration panel, paste the URL to the image in the field provided, or click **Upload Image** and upload an image file.
4. Under Aspect, select how the image fills the bounding box:
 - **Contain.** Image resizes to fit in the container without changing proportions.
 - **Cover.** Image retains its size and aspect ratio, regardless of the size of the bounding box.
 - **Fill.** Image resizes and changes its proportions to fit in the container.
5. On the canvas, adjust the size and position of the image box as needed.

Add Text

You can add either static or dynamic text to your report by drawing a Text box on the canvas and configuring its settings. Text settings include:

- Font Type
- Font Size
- Text Styles (Bold, Italic, etc.)
- Font Color
- Background Color
- Alignment
- Text Wrapping
- Borders
- Padding

Dynamic text is configured using tokens. Pixel-perfect Reports provides the following types of tokens:

- **Data tokens.** Displays dataset columns and their aggregates.
- **System tokens.** Provides options for date and time tokens.
- **Report tokens.** Provides options for inserting page numbers, total page count, and report name.
- **Parameters.** Enables you to display parameters in the report.

You can only add one token per text box.

To Add Text

1. Click the **Text** icon on the toolbar.
2. Draw a bounding box on the canvas. Size and position the box as desired. The Configuration panel updates to display Text Configuration options.
3. To add static text, click in the box and type your text.

4. To add a token, click in the Token symbol {} inside the text box, and select an option from the dropdown menu. A string displays in the text box, which the system uses to resolve the token.
5. Use the settings in the Text Configuration panel to format the text.

Draw a Shape

The Report editor enables you to draw lines, rectangles, and ellipses on the report canvas. You can also configure the colors, line styles, and other visual settings for each shape.

To draw a shape

1. Click the Shape icon on the toolbar and select one of the options:
 - Line
 - Rectangle
 - Ellipse
2. Draw a bounding box on the canvas. Size and position the box as desired. The Configuration panel updates to display Line/Rectangle/Ellipse Configuration options.
3. Use the settings in the Configuration panel to define colors, line styles, and other visual settings for the shape.

Add a Page Break

Page breaks enable you to improve the readability and organization of your reports. You can only add page breaks to the Body of the report.

To add a page break

1. Click the **Page Break** icon in the toolbar.
2. Navigate to the body of the canvas. Notice the mouse pointer changes to the Page Break icon.
3. Click to insert the page break. A line displays on the canvas indicating the page break.
4. Change the location of the page break as needed. Click the Drag handler and move the page break up or down on the canvas.

Set Up the Page Size and Orientation

The Page Setup feature enables you to modify the page orientation, paper size, and units of measurement.

To change the page setup

1. Click the **Page Setup** icon on the toolbar. It displays the current paper size and unit of measurement. The Page Setup dialog displays.
2. On the Page Setup dialog, select the following options:
 - Paper Size
 - Units of Measure
 - Width
 - Height
 - Orientation
3. Click **Save**.

Show/hide Gridlines and Rulers

Gridlines and rulers help you arrange components on the canvas. To show or hide them, click the Grid icon on the toolbar and select or clear the following options:

- Show Gridlines
- Show Ruler

Align Components

The Align components feature helps arrange the components with more precision. To align components, select them on the canvas and click the **Align Objects** icon on the toolbar. Select one of the following options:

- Align left
- Align center
- Align right
- Align top
- Align middle
- Align bottom

Arrange Components

You can arrange overlapping components so that one is in front or behind the other. Select the component you want to arrange and click the **Arrange Components** icon on the toolbar. Select one of the following options:

- Send to front
- Send to back

Publishing Reports

This article describes the various options for publishing reports created in Pixel-perfect Reports.

Preview the Report

The Preview feature enables you to see the report with actual data. It resolves all token values and applies all filters. Use it to verify your configurations. If you defined a Report Group, the report will be divided into separate tabs, one per each distinct value from the associated column.

To preview the report, click the **Preview** button. If you included parameters in the report, the Parameters panel displays, prompting you to enter values for the parameters before the report can be displayed.

The report displays in its final format. To return to edit mode, click **Edit**.

Note: Reports are currently limited to 200 pages and 1,000 tabs.

Download Reports to PDF

Pixel-perfect Reports enables you to download completed reports in PDF format. If you defined a Report Group, the report is divided into separate tabs, one per each distinct value from the associated column. You can choose to download a PDF of only the current tab or a ZIP file containing PDFs of all the tabs in the report.

Note: To download reports, your user account must have the Exporting permission, which is configured in Qrvey Admin Center. For more information, see [Managing Users](#).

To download a PDF

1. Click the **Preview** button to display the report with data resolved from the selected dataset column.

If you included parameters in the report, the Parameters panel displays, prompting you to enter values for the parameters before the report can be displayed.
2. To download the tab you are currently viewing, click the **Download** icon and select **Download Report to PDF**. The Download File dialog displays indicating that the file will be exported.
3. If you defined a Report Group, you have the option to create PDFs of each tab (downloaded together in a single ZIP file). To download all tabs, click the **Download** icon and select **Download All Reports to PDF**. The Download File dialog displays indicating that the file will be exported.
4. On the Download File dialog, select one of the following options:
 - Wait for processing to complete.
 - Receive an email with a download link. The link expires in 7 days.
5. Click **Download**.

Send Reports via Email

The Send Email action in Workflows/Automation supports Pixel-perfect Reports. It currently supports one report per email action. Note that you can add other types of attachments (files, chart exports, and dashboard exports) to the same action. The email is sent to the address of the user ID in the widget or the logged in user.

For more information, see the "Send an Email" section of [Send Actions](#).

Embedding Reports

The Pixel-perfect Reports widget enables you to embed this feature into applications. For more information, see [Pixel-perfect Reports Widget](#).

Pixel-perfect Reports Widget

The Pixel-perfect Reports widget enables you to embed the Pixel-perfect Reports feature in an application.

Before You Begin

- Review the Widget Quick Start Guide for an overview of the widget components.
- Obtain your unique API key. It was provided in the welcome email that your organization received when your Qrvey instance was created. To obtain a new API key, contact your Qrvey account representative.

Get the Helper Code

1. In Qrvey Composer, open the Pixel-perfect Reports feature.
2. Click the Embed Pixel-perfect Reports button in the upper right corner of the page. A dialog displays with an HTML tag, a JSON configuration object, and the Widget Launcher script tag. This code embeds the Pixel-perfect Reports widget. While you may embed a single report using its ID, the end user will still have access to all the reports available in the widget.
3. Click Copy to copy the code, and then paste it into your preferred editor.

Embed the HTML tag

Identify where you would like this widget to display in your application, and then add the HTML tag in that location. The HTML tag for this widget is:

```
<qrvey-pixel-builder settings="config"></qrvey-pixel-builder>
```

Embed the Widget Launcher script tag

Add the widget launcher script tag to your application. For reference, the launcher script code is:

```
<[your-widget-url]/widgets-launcher/app.js>
```

Set Properties in the JSON Configuration Object

Define the JSON configuration object by starting with the script provided in the helper code, and then adding additional configuration properties as needed. The script provided contains only the required properties. For reference, an example is copied below. The helper code that you obtained above should include the unique values indicated with brackets (“<>”):

```
var config = {  
  "api_key": "<API_KEY>",  
  "domain": "https://your_qrvey_domain",  
  "app_id": "<APP_ID>",  
  "user_id": "<USER_ID>",  
};
```

When complete, add the JSON configuration object to your application.

Configuration Object Properties

The following table lists the properties associated with this widget.

Property	Value	Required
api_key	String, Your organization's unique API key required to access the Qrvey platform. Never expose your organization's API key to external users. In Production environments, use a secure token (qv_token) to encrypt the API key.	Yes, if the qv_token is not provided
app_id	String, ID of the Qrvey application containing the webform.	Yes
user_id	String, ID of the Qrvey Composer user account accessing this feature. Optional: You can alternately specify the user ID in a Qrvey session cookie.	Yes
clientId	String, Unique identifier for the tenant end user. Required for using the Download Manager feature. The clientId must be set to a unique value for each tenant end user.	No
domain	String, The base URL of your instance of the Qrvey platform.	Yes
qv_token	A more secure way to authenticate and authorize embedded widgets is through a Security Token requested as a backend-to-backend communication between your backend side of the host application and the Qrvey system.	Yes, if no api_key is provided
timezone	Object <TimezoneConfiguration>, Overrides the time zone setting in Qrvey Admin Center. For more information, see Configuring Time Zone Settings.	No
report_id	String, used to embed a specific report.	No
show_embed_button	Boolean, shows or hides the embed button. By default the embed button is hidden in embedded scenarios.	No
show_formulas_button	Boolean, shows or hides the formula modal button in the toolbar. It is visible by default.	No
parameter_values	Object. {key1: value, key2: value}, you can set the value of a parameter from the configuration object. This value will override the default value set for the parameter.	No