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Workflow

In Pronto, you first **Connect** to data sources and select the tables and columns or files that you want to use in your report, then **Extract** them. You **Prepare** the extracted column data for the report, with modifications such as replacing null values, splitting columns, or merging columns, then **Publish** them. Optionally for multiple data sources, you **Relate** them to each other in a more unified view. Finally, you create charts or tables in Visualizer for use in dashboards that you can share.
Login and Settings

Logging In

To get access to Pronto, contact your Customer Support Manager or request access to the free Trial of Birst Professional Edition.

After you get the URL, enter your Birst username and password into the Pronto login screen.

Overview Tour

The first screen and each module or page have animated tours that quickly orient you to the interface and flow. I encourage you to watch these, and when you are done click the Got It and Don't Show This Again buttons. You can always see them again by clicking the question mark in the upper right.
Welcome to Pronto

Our quick tour will show how it works.
Projects

Projects are how you organize data, reports, and dashboards. When you think about all the data you need for the charts and tables you want to display, you think about putting them all into a project.

Tip: For Enterprise Edition users, a "project" is the same as a "space".

Creating a Project

After closing the tour, you see the Pronto work space. The left panel lists your projects. A project is a container for the data you bring into Birst and the reports and dashboards you create with that data. The center panel gives you guidance for getting started, and is the main work area.

When you first start, you make a new project. To make a new project, click Add (the + sign) at the top the left panel, give it a name, and click the checkmark.
Getting Oriented in a New Project

When you make a new project, Pronto takes you directly to the Connect screen. The first thing to do is get your data into Pronto, and this screen is where you connect to cloud applications such as Salesforce.com or upload files such as Excel.

The main menu for Pronto takes you to the 3 main screens.

Tip: Press Ctrl-Shift Arrow Left or Right to activate the hot key menu.
At the beginning of a new project, you stay on the Connect page.

Later, when you want to go to Visualizer or Dashboards 2.0 or log out, the Main menu button opens the standard Birst main menu.

When you are using a Pronto project, you have access to Visualizer and Dashboards 2.0.
Sharing a Pronto Project with Other Pronto Users

You may want to share your project with other people. The Share menu lets you add other Pronto users - hover over the project name in the project list to see it.
Then enter the name of a Birst user and click the check box. Add more if you like.

Users who share your space must already have the Pronto product enabled; otherwise you'll see a message. Adding a user to your project gives them access to Pronto, Visualizer, and Dashboards 2.0 in your project. If you don't want them to change the data model you made in Pronto, you can revoke their access to it, and they'll still have access to Visualizer and Dashboards 2.0.

The next thing you do in Pro is get to your data and get it into Birst.
Tutorial: Basic Excel Sheets

This product tutorial steps you through using the Trial of Birst Professional Edition to:

- Upload a spreadsheet with multiple sheets (tabs).
- Merge some of the tabs (raw source) into a new table (prepared source).
- Create a report in Visualizer using the prepared source.
- Optionally create more reports on your own.
- Add reports and an external website (a map) to a dashboard in Dashboards 2.0.

The scenario involves a main spreadsheet that represents a corporate database, based on a variation of the classic Northwind demo. It covers products, orders, suppliers, customers, and employees for an imaginary food distributor. A local manager wants a dashboard that shows the inventory status of products, and the name and location of the suppliers.

As with all Birst projects, first you connect and extract the data. The file for this tutorial is available at [CorpData - Excel Tutorial File on the Community](https://example.com).

- Create a New Project
- Connect and Upload Sheets from File
- Prepare the New Source
- Create a Chart Report in Visualizer
- Put the Chart and an External Website on a Dashboard

Create a New Project

In Pronto, start by creating a new project.

For a refresher on how to do this, see [Getting Started with Pronto](https://example.com).

Connect and Upload Sheets from the Spreadsheet

For an orientation to the Connect page, see [Connect to Data in Pronto](https://example.com).

On the Connect page, either drag-and-drop or use the Browse Files button to upload the CorpData spreadsheet. You can find the spreadsheet on the ThinkTank Community.
A preview shows the sheets as separate tables, also called "raw sources", and the columns in each.

It's important to know that the Connect page shows a preview of the tables and columns, the data is not yet in Birst. Pronto gives you a chance to refine and select only what you need to upload. This is extremely useful when you are connecting to very large data sets.

In the preview you select the tables and columns you want to pull into Birst.

For this scenario, you don't need all the tables, you just need Categories, Products and Suppliers. Since by default all tables are selected, you can either uncheck the ones you don't want, or use the Select/Deselect toggle.
The tables don't have a lot of columns, so there's no need to deselect any columns. If you want to change column selections later, Pronto lets you update the connection details, so you are never stuck with your initial column selections.

When the three tables are selected, click Done.
In general, you don’t have to select all the tables and columns, when you know that you only need to use particular ones. However if you want to create different reports from different data in the same project, you would probably select them all.

Pronto may show a message prompting you to add filters; however this file doesn’t have a large amount of rows so you can click Proceed.

Pronto shows the tabs you selected and previews the contents.
Tip: This gives you a chance to change your mind, before uploading all the data. You can click Edit to go back and see the original list of files, and check or uncheck what you want.

Then click Import Files.

Pronto shows a progress bar, and then a message when the imported files have been extracted into Birst.

Prepare the Source

You can think of a prepared source as a customized raw source. Customizations at the source level provide report-friendly changes such as improved column titles, merged or split columns, or text replacements. These changes are called transformations, or transforms for short. A prepared source can also be based on multiple sources, such as when you want to merge tables together.

For a blog post about the Prepare page, see Prepare Data in Pronto.

This tutorial uses the three tables (the three raw sources from the original sheets) to create a single prepared source.

For this scenario, start with the Products data. In the Prepare page, locate the CorpData_xlsxProducts table. (This was the Products sheet in the original file.) Hover over it, just to the right of its name, and click Create a New Prepared Source.
Name the source and click the check mark.

Pronto creates the new prepared source and it is ready for you to edit it. It already includes the data from the Products table. The "pipeline" area at the bottom shows a history of the activities that occur in the Prepare page.

For an overview of the different tools in the pipeline, see Deep Dive: Prepare Pipeline.
Merge Columns from Three Excel Sheets into One Prepared Source

In this scenario, the manager wants charts that show information from three different tables. Since the tables are not complicated and don't require advanced processing, you can accomplish this using the Merge transform to put all the tables together into one.

The next step uses the Merge transform on the Prepare page. For more info on merging see Deep Dive: Merge Tables Transform in Pronto.

In the new prepared source, click Add Step in the pipeline.

Next to the prepared source name, click Add Transformations.

Select the Merge transform.

The Merge dialog opens, with the prepared source shown on the left, and with all of its columns selected.
From the pulldown menu on the right, select the CorpData.xlsx Suppliers table (the raw source).

To create a merge, and to make sure the rows and columns end up in the right organization, a shared or key column needs to be identified. This is called a "join column". The column titles don't have to exactly match, but the data should be very much the same.

In this example, both tables used the same SupplierID keys, so you select them from the dropdowns.

Keys are meant to be unique, so if two spreadsheets use the same keys, they can be merged together in a logical way. It is important that at least one of the two columns has only one row for each unique key, otherwise the data may not match up correctly.

In this scenario, it makes sense that the Supplier table has a unique key, in a unique row for each supplier. Also the Products table can have the same SupplierID in multiple rows because one supplier may provide multiple products.
To make sure that the new rows will align correctly, you specify a join. Joins have different types. Part of deciding how to use the join depends on what rows the final prepared source should contain. For this example, the default inner join will match the rows between the left and right tables, and return only the ones that contain the same SupplierID in both columns.

Now the merge is defined and it's time to click Apply. Pronto compares the two tables and merges them based on the join. It returns the results, in this case all the Products, augmented by all of the Suppliers columns for each product. Pronto also shows the merge step in the pipeline below the data.

Next repeat the merge process, this time with the CorpData_xls Categories as the second source. This time, for something new, notice that you can uncheck the CategoryID column in the
second source, so that it does not show up in the resulting table. Pronto will still use the column to perform the join, it just won’t display what is essentially the same data twice.

When you click Apply the pipeline looks like this:

![Pipeline Diagram](image)

Ignore a Column

In the previous step you learned how to hide a column during the merge transformation. What about the second SupplierID column from the first merge? Pronto has a transformation called Ignore that does the same thing.

Click Add Step, then Scroll right to the second SupplierID column, SupplierID_CorpData_xls Suppliers and click its check box. Then click the Ignore transform.
For extra practice, find the Fax column and Ignore it. Technically you could have left Faxes out during the Connect phase, but it's nice to have a history of changes to the original file, and the Prepare page keeps that history for you.

There are a lot of different transforms to choose from in Pronto. You can merge columns together, such as for address blocks. You can fill in empty cells using "null handling", replace text, and filter the rows. To learn more see Deep Dive: Transformations.

The next step is to decide whether to show the original sources when you use Visualizer or Dashboards 2.0. For this tutorial, since you merged all the raw sources together, you don't need to make the raw sources available for reporting, you can just use the prepared source.

Hover over each raw source on the left and select Hide Source from the dropdown menu.

For this scenario, the work in the Connect and Prep pages are almost done! The final step is to click Publish.
Pronto shows a status bar while it retrieves all the data from the source, applies the two merges, and hides the two "extra" columns. Then it saves all of that in Birst and you can use it to make charts, tables, and dashboards.

When it is done it shows the publishing information in a tooltip.

If you are wondering, "What exactly is Publish?", that is a great question. Publish is when Birst takes the raw data and walks it through the pipeline, applying all the transformations, and making it ready for use in reports and dashboards.

You can create reports in Visualizer first, or go to Dashboards 2.0 and create or add to an existing dashboard. For this tutorial the next step is to create a chart in Visualizer.

**Create a Chart Report in Visualizer**

Click the Main menu button to get to the Visualizer button.
Once in Visualizer, you pick what data you want to show in a chart or table. Birst arranges the columns into two groups, "Measures" and "Attributes". Measures are things that can be counted, and by default Birst considers any column based on numbers (integer or whole) to be a measure. Attributes are things that are descriptive of actual objects, or indications of date or time.

This makes sense when you think of how you would title a chart... something like "Units in Stock by Product Name" is a "Measure by an Attribute". In a Visualizer chart, you can have multiple measures and attributes, though it is good to keep charts as simple as possible so that the information can be absorbed quickly.

If you only want to show attributes, you can use a Visualizer table.

For this chart exercise use two measures and one attribute. Click the Measures section.

Then double-click the UnitsInStock and UnitsOnOrder. The default bar chart starts building in the work area on the right.
Also notice that when the cursor hovers over a section, a popup provides the details.

Click Subject Area to get to the Attributes button.

Click the Prepared Source, then scroll down to click ProductName.
Now the chart is more informative. It will be more clear if you drag the Units In Stock down to the Sort section.
Now you can quickly see what products are out of stock and possibly not yet on order.
Save the report and give it a name, such as Stock.

After you save the chart is available in Visualizer for more edits, if needed.

Tip: You can make other changes to the report, such as changing its chart type.
There are many more features and things you can do with Visualizer. For more ideas see the Visualizer Help or the *Pro Edition User Guide* on ThinkTank.

You can also make a few more Visualizer reports with this Pronto data set, for example:

- Add Reorder Level to the chart that has Units In and Units on Order
- A table showing Supplier Company, its Country, Product Names, and Product IDs

**Put Reports and an External Website on a Dashboard**

Dashboards are how you display and distribute one or more of the charts or tables you create in Visualizer. For this scenario, the manager wants to share the dashboard with the home office via an email.

Click the main menu to get to the Dashboards button.
An empty dashboard opens and you can start by renaming it.

Click the center image to go to the reports list and select reports to put on the dashboard, and click Done.
The reports you pick are added to the dashboard, and you can resize and move them around.

**Tip:** When you select a report, an menu bar appears at the top. Use these options to change the colors and other styles for the reports. Technically, it is styling the container for the report, called the "dashlet".

One nice feature of dashboards is the ability to embed websites. As long as a website allows itself to be embedded, you can add using the Insert - Webpage menu.
Insert a public URL. In this example, use Google Maps to find Europe, and select the embed option.
Strip the `<iframe>` tags from the URL and paste it into the Web Page Editor, and click Insert.

Resize the reports if needed. Then click Publish.

When a dashboard is published, users can scroll through the table and chart, and use the map as usual.

This is a very simple example of a map using a web URL; a more advanced Visualizer feature called Geomaps lets you set up the view to automatically navigate to particular places on the map.
There are many more types of content you can add to a dashboard, such as Key Performance Indicators, and images. Helpful features such as drill-down and filters can enhance the analysis experience.

There are many more features for dashboards. For more ideas see the Dashboards Help or the Pro Edition User Guide on ThinkTank.

This tutorial has gone over the basics of using Birst Professional Edition to create reports and dashboards from an Excel spreadsheet. To go a bit deeper into the Relate feature, see the Tutorial: Excel Sheets - Merge and Relate.
Tutorial: Excel Sheets - Merge and Relate

This product tutorial steps you through using Pronto to upload, prepare, and relate Excel spreadsheets, create a report in Visualizer, and add the report and a KPI to a dashboard in Dashboards 2.0. This also shows the different use cases for a merge transform in the Prepare page versus a relationship between sources in the Relate page.

The scenario involves a main spreadsheet that represents a corporate database, based on the classic Northwind demo. It covers products, orders, suppliers, customers, and employees for an imaginary food distributor. A warehouse manager has compiled a spreadsheet of additional data about their regional customers for promotional purposes, including contact details. The manager wants a report showing their local customers, a count of their orders, and what promos were used with the customer’s orders.

As with all Birst Professional Edition projects, first you connect and extract the data. The spreadsheets for this tutorial are available at CorpData - Excel Tutorial File and MyPromos - Excel Tutorial file on the Community.

- Create a New Project
- Connect and Extract Tables from Spreadsheets
- Prepare the Sources
- Relate the Sources
- Create a Chart Report in Visualizer
- Put the Chart and a KPI on a Dashboard

Create a New Project

In Pronto, create a new project.

For a refresher on how to do this, see Pro Projects.

Connect and Extract Tables from Spreadsheets

Tip: For a refresher on the Connect page, see Connect to Data.

On the Connect page, either drag-and-drop or use the Browse Files button to upload both the CorpData and MyPromos spreadsheets.
A preview shows the spreadsheet tabs as separate data sources, and the columns in each. This is a preview of the tables and columns, the data is not yet in Birst.

In the preview you select the tables and columns you want to pull into Birst. For this tutorial, select all of the tables and all of the columns in both spreadsheets, and click Done.
Tip: It's not always necessary to select all the tables and columns, if you know that you only need to use particular ones.

Then click Extract Imported Files.
Pronto shows a progress bar, and then a message when the imported files have been extracted into Birst.

**Prepare the Sources**

You can think of a prepared source as a customized raw source. Customizations at the source level provide report-friendly changes such as improved column titles, merged columns, or text replacements. These changes are called transformations, or transforms for short. A prepared source can also be based on multiple sources, such as when you want to merge tables together.

When you create a prepared source you can reuse it in multiple reports.

For a refresher on the Prepare page, see [Prepare Data](#).
In this tutorial there are two prepared sources, one that is a merge of tables from two sources, and another that is a merge of tables from one source.

**Merge Columns from Two Excel Sheets into One Prepared Source**

In the Prepare page, locate the CorpData Customers table. (This was the Customers tab in the original spreadsheet.) Hover over the list items on the left and use the popup to find the file, and click on it.

Make sure it's title turns blue, to indicate that it is selected.

Hover to the right of the item in the list to see and then click Create a New Prepared Source.

Name the source and click the checkmark.

Pronto creates the new prepared source and it is ready for you to edit it.

In our tutorial scenario, the manager wants to put additional customer info into the same table as the corporate customer table. This means that the columns in the local spreadsheet need to be appended and the rows matched up with the corporate information. On the Prepare page this you accomplish this using the Merge transform.

The next step uses the Merge transform on the Prepare page. For more info on merging see Deep Dive: Merge Tables Transform in Pronto.

In the new prepared source, click Add Step in the pipeline.
Select the Merge transform.

The Merge dialog opens, with the prepared source shown on the left.

Then select the MyPromos.xlsx MyCustomers table on the right. You may have to scroll to see it.
To create a merge, and to make sure the rows and columns end up in the right organization, a shared or key column needs to be identified. This is called a "join column". The column titles don't have to match, but the data should be pretty much the same. In this example, both spreadsheets used the same CustomerID keys. Keys are meant to be unique, so if two spreadsheets use the same keys, they can be merged together in a logical way. It is important that at least one of the two columns has only one row for each unique key, otherwise the data may not match up correctly.

Tip: Part of deciding how to use the join depends on what rows the final prepared source should contain. This is controlled by the type of join. For example, the default inner join will match the rows between the left and right tables, and return only the ones that contain the same CustomerID in both columns. An outer join would return all the rows from each table, a right join...
would result in all the rows from the right and any rows that match the same CustomerID from the left, and a left joint would result in all the rows from the left table and any rows that match the same CustomerID from the right table.

In this scenario, the manager doesn't really care about all the rows that are not from the local customers, and does care about getting all the columns from the corporate data. So an inner join will be the best choice.

![Image of Merge window with prepared_customers and customerid selected, inner join option highlighted]

Now you can refine the final set of columns for the prepared source. For example, both CustomerID columns are not needed, only one, so it can be deselected from the second source. The column will still be there behind the scenes because it is required for making the join work, consistently. But it doesn't need to be displayed. Unchecking the column causes it to not be displayed in the final prepared source.

In addition to deselecting the CustomerID from the table on the right so that it is not displayed, it makes sense to deselect the CompanyName and ContactName, since both of those are also in the main corporate table. The Email and Twitter columns are the ones that the manager wants to add.
Now the merge is defined and it's time to click Apply. Pronto compares the two tables and merges them based on the join, and hides the deselected columns. It returns the results, in this case the 5 local customers with all the data from corporate, augmented by the email and Twitter columns provided by the manager. Pronto also shows the merge step in the pipeline below the data.

<table>
<thead>
<tr>
<th>Fax</th>
<th>Latitude</th>
<th>Longitude</th>
<th>SalesRegion</th>
<th>Email</th>
<th>Twitter</th>
</tr>
</thead>
<tbody>
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<td>55..</td>
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<td>Am West</td>
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<tr>
<td>11..</td>
<td>47.599974</td>
<td>-122.314166</td>
<td>Am West</td>
<td>Karl@WhiteClover...</td>
<td>KarlClover</td>
</tr>
</tbody>
</table>

Rename a Column in the Source

The CompanyName column is likely to be used in many reports, and in this scenario, the manager would prefer to title it the Customer Name. By changing the title in the prepared source, the change is consistent for all future reports. You would not have to change the title for each report.

Scroll to the CompanyName column and select it. The Transforms menu highlights all the customizations that could be used for that column.
Select Rename, type in the new title, and click Apply.

The preview for that column turns green to indicate that a transformation has been applied to it, and the step displays in the pipeline.
Merge Two Excel Sheets

In this scenario, the manager wants to show the descriptions of the local promos in the final reports; however, the local spreadsheet doesn't have all the information on one sheet. So the next step is to create another merge between two sheets and create the MyPromos prepared source.

Using the same process as before, select the MyPromos_xlsx MyPromos and MyPromos_xlsx PromoCustomers sources, and merge them using the PromoID field as the inner join. Don’t forget to hide the second PromoID
Click Apply and the prepared source looks like the screenshot below.
Click Publish and Birst creates the two new prepared sources based on the definitions you created.
Relate the Sources

Now that the base customer data is appended with the additional info and the rows are limited to the manager's local customers, the new Prepared_Customers source can be related to another corporate table. The corporate table that tracks Orders has an OrderID column that can be used to count the number of orders per customer.

For more details see Relate Data.

Go to the Relate page.

Select the Prepared_Customers prepared source, and the spreadsheet CorpData_xlsx Orders table raw source. Pronto displays the columns of each table.
The same concept of a join applies here. Click CustomerID in Prepared_Customers and the same in Orders to have Pronto relate the CustomerIDs to each other. The default join type, an inner join, is good.

Then deselect Orders and select Prepared_MyPromos to create another relationship using the CustomerID key.
An interesting question arises: how is relating different from merging? They both deal with two tables that each have the same key column, and they both use joins to define the rows in the resulting table. The short answer is that you use a relationship when you need all the data from each table, and the data must be logically related, via the key, so that the rows make sense. A merge is more appropriate when you want to simplify the data sources that will be available for reports, by combining multiple tables (sheets) into one.

In the Relate page you don’t have to save anything. When you are done, you can go straight to Visualizer to make a report.

**Create a Chart Report in Visualizer**

Click the Main menu button to get to Visualizer button.
Once in Visualizer, from the Measures section double-click the OrderID.

Click OrderID when it is listed in the gray Chart Builder column, to open its settings.

Set the OrderID aggregation to Count Distinct.
Now the OrderID column represents the count of distinct Orders, so you can also change the label by double-clicking its title.

Click Subject Area to get to the Attributes button.

From the Attributes section scroll down and double-click Prepared_Customers.
Double-click Customer Name for the Category.

At this point there is a column chart showing the Count of Orders by Customer Name.

Click Back in the Attributes section.
Then double-click Prepared_MyPromos and double-click Promo Description.

Visualizer adds it as a Color section to the chart.
The chart shows which promos were used for which local customers, and the count of orders for each promo per customer.

Save the report and give it a name.

You can make other changes to the report, such as changing its chart type.

Also notice that when the cursor hovers over a section, a popup provides the details.
If you like your changes, click Save to save it again.

There are many more features and things you can do with Visualizer. For more ideas see the Visualizer Help.

**Put the Chart and a KPI on a Dashboard**

Dashboards are how you display and distribute one or more of the charts or tables you create in Visualizer. For this scenario, the manager wants to share the dashboard with the home office via an email.

Click the main menu to get to the Dashboards button.
An empty dashboard opens and you can start by renaming it.

Then click the center button to add the report. Select the report and click Done.

You can move and resize the report on the dashboard.
Another way to show information on a dashboard is to use a Key Performance Indicator (KPI). In this scenario, the manager wants a quick count of the total number of orders. To use a KPI, first select its menu option.

KPIs are for measures, so they are listed in the KPI Builder. Navigate to the OrderID and changes its aggregation to Count Distinct.
Notice how a preview of the KPI displays on the left.
You can change style settings for the measure number.

And you can change the title name and its style.
Click Save and place the KPI on the dashboard.

Click Publish to save the dashboard.

There are many more features and things you can do with dashboards. For more ideas see the Dashboards 2.0 Help.
Connect to Data

You can use the Pronto Connect page to log into a cloud application, a database or upload a file of tables to access and import the desired data for reporting. After establishing your connection(s), you select the tables that you want to import, and, optionally, filter the rows in the tables to return only the rows you require. After identifying the columns and rows that you want, import the desired data and continue onto the Pronto Prepare page to refine your data.

**Note:** Live Access does not import data but rather lets you run a query directly against a data source behind your firewall. This means the data never leaves your premise and access to the data is removed when you turn off your Birst Cloud Agent.

There are a variety ways that you can connect to data from Birst which include:

- Connect to a Cloud Application
- Connect to a Database
- Create a Live Access Connection to the Database
- Connect to an R Server

Upload a File

You can upload data source files such as a CSV or Excel worksheet. Worksheets in an Excel Workbook will be treated as separate data sources.

**Note:** When uploading files, make sure they are less than 20mb in size.

**Note:** Uploading a file does not require a running Birst Cloud Agent.

Use the middle panel when uploading a file to create a connection. Pronto supports common file types such as Excel and CSV.

Pronto provides a list of tables from a file upload, and lets you further refine your selections. The list of tables display on the left panel, while a preview of the first table with its first 100 rows displays in the main panel.

When uploading Excel files, a list of tables displays based on every tab in the worksheet.
Initially, all of the tables are selected and grouped under the file listing. You can select or deselect tables from the listing, and on the right, you can select or deselect columns as needed. You can filter the rows based on the filter(s) criteria applied.

*Note*: Filter options are only available for column if the database/column metadata marks that columns as searchable/filterable.

You can find more details on how to edit connection objects from the online help topic, Edit Connection Objects.

When you are satisfied with your data refinements, you can import the data.

Click Done to save these settings.
Once Pronto knows what data sources to use and what content from those files to import.

Click Import.

Connect to a Cloud Application

Each cloud application has its own login requirements, depending on the application.

Before setting up a cloud or database connection, make sure that you have the login credentials for the application or database. For example, a Salesforce.com connection requires a secret key password.

This example uses screenshots of connections to Salesforce.com, but you can also connect to other cloud applications.

Tip: When you create a new project, make sure you have all the login information you need for your cloud application. See Pronto Connect Reference for details about different connections.

For details about different cloud application connections see Connect Reference.
Create a Connection

There are two ways to add a connection to a data source: either click the icons on the right, or click the Add (+ sign) on the top left and then pick from the dropdown menu.

Clicking the Add (+), followed by clicking the Select the connector dropdown to display the list of possible connections.

(The File import feature is located to the right.)
If you are connecting to an external data source to upload or connect to source data, you will need to download a Birst Cloud Agent and once installed run the agent. For more information about installing and running the BirstCloud Agent, see ...

After establishing your connections, you can edit the connected objects by selecting only the desired objects and/or applying filter conditions to return a subset of the data contained in those connected objects. See Edit Connection Objects for more details.

Provide a connection name and the cloud application credentials, then click Save.
After you save the connection to the cloud application, a preview of data will display for a data source.
The next step is to Edit Connection Objects. For more information on that process, see *Edit Connection Objects*

**Birst Cloud Agent**

The Birst Cloud Agent is a lightweight cloud managed Java application that enables you to make connections to sources behind your organization’s firewall for extract to Birst or for Live Access to the sources behind a firewall.

The Birst Cloud Agent is an account level agent that you can use for multiple spaces.

Birst Connect 2.0 is a Java command line application that helps extract data from JDBC data sources into Birst. It can enable Birst Live Access connections to sources in other networks. It uses HTTPS as the means of transferring data to Birst. Birst Connect 2.0 runs behind your firewall to access your organization’s data sources. Birst Connect 2.0 agents can be downloaded and run on both Windows and Linux machines. Currently, JDBC data sources are supported.

Birst supplies a MSSQL Server JDBC driver with Birst Connect 2.0. You will need to download and install the appropriate JDBC driver for your data source(s). (i.e. Oracle, SAP, MYSQL, etc.)

Birst Connect 2.0 can be set up to support multiple configurations for the same space. This is useful when multiple data sources are distributed across the network, such that they are not all accessible from a single machine. Having multiple configurations allow users to run separate instances of Birst Connect 2.0 from different machines within the network. In addition, you can employ multiple Birst Cloud Agents per connection for enhanced performance via load balancing. The Agent default thread pool size is set to 8 but can be modified up to 12 by editing the agent properties file.

A single Birst Cloud Agent can serve multiple spaces.
A connection defined with Birst Connect 2.0 can pull data from several different sources for which extraction can be scheduled using Birst’s cloud connector scheduler. For more information about Scheduling Extraction and Data Processing for Cloud Applications, see Scheduling Extraction and Data Processing for Cloud Applications

When pulling data from a database, users can select entire database tables and views for upload or pull subsets of data via custom SQL select statements (Query Objects).

Install the Birst Cloud Agent

1. Click the Download Local Agent button to download the zipped file for the agent.

2. You can retrieve the zipped file for the Birst Cloud Agent from your download directory.
3. Extract the contents of the zipped file to the desired location. (On your local machine or to a remote dedicated server)
4. Open the BirstCloudAgent directory.
5. Open the bin directory and run the Agent For Windows Batch File, Mac XXX file) by double-clicking. (For Windows: execute the “Agent.bat”, for Mac/UNIX/Linux, run the “Agent” script).
   a. MAC users may get a security pop up saying, “Agent is a Unix application downloaded from the Internet”. If this occurs, click Open on this dialog box, or go to your Mac System Preferences > Security and Privacy > General Tab to open the application from there. Alternatively, you can run the Agent by opening a Terminal window, navigating to the /bin directory in the folder in which you unzipped the Agent files, and run the command: “./Agent” without the quotes. Note: Birst Connect requires the installation of Java JDK 8 or JDK 7 on the machine where the Agent is running. The Birst Connect 2.0 agent is not certified on Java JDK 9.

6. With the Agent running, select your local agent from the Create Connection panel. Note: By default, the agent name is inherited from the machine name where the agent is running. You can rename the agent if desired.
7. **Tip:** To close the Local
Agent Selection box, click the drop-down arrow again.
Birst Cloud Agent Installation and Upgrade Notes

- Birst Connect 2.0 must run in a location that can access the data that you want to extract and then post that data to the Birst server.
- There are no specific hardware requirements for Birst Connect 2.0. The processing and memory requirements are small.
- The data is GZIPed and sent in chunks with SHA-256 signatures.
- Extract is a single process; there is no specific deployment structure other than access to the data to be uploaded.
- Server name, database name, user name, and generic connection strings can use single-value constant variables. See Creating Variables.

Connect to a Database Using Birst Connect 2.0

Your database connection will require the database type, database name and login credentials. The steps listed here are applicable to Live Access connections too.

In addition, you will need to download and run the BirstCloud Agent when making connections to external data sources.

For more information about the Birst Cloud Agent and how to install, see Birst Cloud Agent.

Each database connection has its own connectivity requirements, depending on the vendor. Some databases such as Oracle will require their supporting database driver for connectivity. You will need to obtain the desired database driver from the vendor and place it in the Birst Cloud Connect drivers directory before you connect to those databases.

- Birst Connect 2.0 can connect to the following databases:
  - MSSQL
  - MySQL (requires driver)
  - Oracle 11g (requires driver)
  - PostgreSQL (requires driver)
  - SAP HANA (requires driver)
  - Other (JDBC) (requires driver)

Tip: When you start a new project, make sure you have the connectivity information you need for your database. See Pronto Connect Reference for details about different connections.
To add a database connection, you can either click the SQL Databases icon in the middle panel or click the Add (+) icon and select SQL Databases from the drop-down selection box.

Method 1 to add a database connection:

Method 2 to add a database connection, select the SQL Databases option and proceed as follows:

You will have the option to Import to Birst or create a Live Access connection to your database.
The following steps are for a MSSQL database connection. The steps will vary slightly for different database types.
1. Click the "Import to Birst" option to import data objects into Birst. Click the "Live Access" option to create a logical data map to the data objects in the database.

2. Enter a connection name (A logical connection name in Birst such as MSSQL1)

3. Select an Agent to run connect for your database. **Note:** The Birst Cloud Connect Agent must be running before you can select the agent and validate your database connection.

4. If this is the first time you are creating a database connection and you have not yet installed the Birst Cloud Connect Agent, proceed to the **Install the Birst Cloud Connect Agent** instructions.

5. Select the database type from the drop-down box.

6. Provide the server name, which can be the server IP address, or the logical name provided for the server.

7. Provide the Database Name

8. Enter valid credentials for the database connection (Username/Password)

9. Optional step, scroll down and provide the port number.

10. Click Save to validate the connection credentials and access the database.
Select the desired database schema:
Click Apply

Select a data source to preview or to import. **Note:** Live Access connections do not import data sources. You can edit the mapping to the data source in a similar fashion as editing objects.

Edit the tables and filter rows for desired content as discussed in the Edit Connection Objects section.

**Create Query Objects**

In addition to importing tables from databases, you have the option to add a "query based object" from your database. This option lets you employ simple SQL expressions such as joining tables or creating simplified views of existing tables.

You need to provide a unique Query Object name and valid SQL syntax that is compliant with the connected database. Click Save to create the query object.
**Note:** If you change a column alias for a given query object after importing data, subsequent imports of data will create the new alias resulting in both the old as well as new columns being available for data prep.

In the following example, two views were created using the add query based object feature. In one case, a query based object was created from a subset or slimmed down version of an existing database object and the other query based object was created by joining two related objects by their foreign key relationship.
Here is the valid SQL syntax used to create the simple join with the Products and Categories table in MSSQL for the above example.

```sql
Select Products.CategoryID, Products.ProductName, Categories.CategoryName
from Products, Categories
Where
Products.CategoryID = Categories.CategoryID
```

Similar to the database connections, edit the tables and filter rows for desired content as previously discussed in the Edit Connection Objects help topic.

Once edited import the data base connected sources as follows:

**Birst Connect 2.0 Live Acces Connections**

**Connect to a Database Using Live Access**

Similar to connecting to a database, you can select the Live Access option to create a logical mapping of the data from a database rather than importing data into the Birst Cloud. **Note:** You
can map the tables using the Live Access connection but you cannot Prepare the data since it is not in the Birst Cloud. You can still relate and create Networks using a Live Access connection.

For more information about how Live Access works in Birst, see the Live Access online help topic.
**Note:** Before Birst can connect to a database, you need to download the Birst Cloud Agent to the machine that will be accessing the database. The agent enables Birst to access the database behind its firewall.

You connect to Live Access objects like database objects. See [Connect to a Database Using Birst Connect 2.0](#) for more details on creating a Live Access connection.

After establishing a Live Access connection, you can edit data source connections like database objects.

For more information on how to edit data source connections, see [Edit Connection Objects.htm](#)

After you are satisfied with the edited data source connections, you can create the logical data map by clicking the Map [DB type] LA Data. Remember, Live Access does not import data into Birst.

**Edit Connection Objects**

After saving your connection, Pronto accesses the connected application and returns the list of available tables. The list of tables display on the left panel, while a preview of the first table with its first 100 rows displays in the main panel. If the first table does not contain any rows, the preview will be empty (No records to display).

Next, select only the tables that you want from your connection. Some applications have a LOT of tables, so Pronto makes it easy to find the most commonly used ones by using the Recommendations menu to pick a popular table or set of related tables.
Alternatively, you can use the Find search feature to return a limited selection of tables based on your search criteria.

When you select a table, a preview of its contents displays in the main panel and by default, all of its columns are selected. Frequently, you will not need every column, so you can select only the ones that you want by using the Deselect All and Search box at the top right to find and select the desired columns.
Pronto highlights selected columns.

*Filter Columns*

For each column you select, you can filter its columns, by clicking the filter icon at the top of a column. The filter you apply limits the number of rows extracted based on the filter criteria.

The filter panel lets you select a valid operator based on the data type such as equal to, greater than, less than, not equal to, etc... You need to provide a valid value for the selected column.

**Note:** The filter operators will vary based on whether the column selected is a measure or an attribute.

When you enter a filter and click Apply, the preview panel updates displaying only the rows that match the filter criteria. Selected filter tag(s) display at the top of the table.
Select more columns and add filters for additional tables as needed.

Click Done.

Don't worry if you did not get everything the first time, because you can go back and update the connection’s tables and rows later.

If you used a recommendation, make sure to scroll through the columns to see what was selected by default.

**Tip:** If there are a large number of rows, Pronto will let you know. This is to keep you from downloading a large amount of data. If you see a warning, double-check your selections or add filters before proceeding.

The Connect page refreshes, displaying only the tables you selected, and a preview of all the rows. You can click Edit, to continue refining the columns you want to select for each table.
Import Data

When you have everything you want, click Import at the bottom of the tables list. This time, Birst extracts all the data that matches the criteria you set up.

The progress bar displays at the bottom left, and a success message appears in the upper right when it is done.

Your data is now in Birst and ready to prepare for reporting. You can create multiple prepared sources from the “raw” or extracted sources that you just created with the Connect page. This is an efficient way to manage your reports, especially when you have different uses for the same tables.

The next step is to prepare the data using the Prepare page. Keep in mind, you can also join tables using the Prepare page where many users may find the User Interface easier to create those query objects using prepared sources.
The Prepare page lists all your tables and has a work area for preparing sources.

R Connect

R is a software programming language and software environment used for statistical computing and data analysis.

Provides a business friendly UI layer to leverage the powerful and sophisticated machine learning capabilities of R.

To integrate R with Birst you need an instance of R running R server.

To set up an R server instance, see Setting up R Server.
Supply credentials and click Save to connect to the R server.
Click Select R Server files to return the available files to import.
Browse and select R files.

Optionally, you can apply R code to an R server file before importing.
Click Done to run the R code.
Click Import R Server... to complete the import of the R server file to Pronto.
To integrate Birst with R, first you set up an R Server. R Server is an extension package to any R instance that allows it to integrate with other applications. This allows Birst to integrate with small R instances and large ones using the same mechanism. It also allows users to utilize their native R environment when using it with Birst. This is different from other solutions that embed pieces of R inside the infrastructure, but as a result, do not allow the full leveraging of R.

A convenient server to use is the R Studio Server on Amazon AWS (Amazon Web Services). R Studio Server is an open source R implementation with support that can be purchased. It provides a full web-based client and can be run from Amazon AWS. You can search the publicly available AMIs (Amazon Machine Images) for “RStudio”. See the following link for information on how to set this up: http://www.louisaslett.com/RStudio_AMI/.

Once this AMI is running, you need to connect via SSH and create the Rserv.conf configuration file. You must also ensure that the default port of 6311 is opened via Amazon’s security groups. In general, you will want ports 80 (for HTTP), 22 (for ssh) and 6311 (for Rserver) open.

For example, a screen shot of R Studio Server from a browser Interface:
Installing R Server in your R instance only needs to occur once.

**To install R Server in an R instance**

1. At the R command prompt, type the install command:

   ```
   install.packages("Rserve")
   ```

2. Start R Server from within your R environment. Generally, it starts a background process that exists until it is either terminated or the machine is rebooted. Alternatively, see the R Server documentation for details on how to start R Server from a command line.

   To start R Server from within the R environment, type the following:

   ```
   library(Rserve)
   Rserve(args="--no-save")
   ```

3. After installing R Server, SSH into your EC2 RStudio instance and create a `rserv.pwd` file within the `/etc` folder containing your user credentials.

   **Tip:** Assuming the AMI you launched is Ubuntu, your SSH command will be similar to the following. You'll need to provide the file path to your amazon private key (`*.pem`) which you had specified during your EC2 RStudio Launch Instance Configuration.

   ```
   chmod 400 <yourkey>.pem
   ssh -i <yourkey>.pem ubuntu@<yourRStudioPublicIPAddress>
   sudo su
   cd /etc
   vi rserv.pwd
   ```
Using vi, you can enter in your username and password on a single line separated by a space. For example, `ruser ruser`. Press the `<esc>` key and type `:wq` to save the file.

4. After installing R Server, configure the `Rserv.conf` configuration file that by default is located in the `/etc` folder. If the file does not exist, create it with the following entries:

    remote enable
    auth required
    plaintext disable
    pwdfile /etc/rserv.pwd
    encoding utf8

For additional information about integration with R, see Tony Dahlager's blog discussion on the Community.

**Note:** When you reach the last topic “Birst Connection to R Server” refer instead to the Pronto R Connect topic.

**Next Steps**

R Connect
Connect Reference

The Pronto Connect page is where you log into a cloud application, a database, or upload a file. You can preview and search the sheets or tables, select tables and columns, and filter the rows to bring into Birst. The left side of the screen lists the tables, and the right side previews the rows and columns.

- The preview in the Connect screen uses 100 rows.
- Filters do not yet support wildcards or partial strings.
- When you've finished selecting columns and setting filters, click Done to save the definition of the connection.
- For now the definition supports ANDs, not ORs.
- Click Import to pull the data into Birst.
- The Importing progress bar shows at the bottom left, and you can cancel it if needed.
- Birst treats Integer type columns as measures.

Connection Notes

- Dropbox Connection
- Import File
- Google Analytics Connection
- Jira Connection
- Marketo Connection
- Salesforce Connection

Dropbox Connection

- A Dropbox connection requires a Dropbox account.
- The following file types are supported:
  - .csv file
  - Excel (.xls, .xlsx)
  - ZIP (.zip) of the above
- You can select a folder and all of its supported files will be downloaded. Subfolders will not be downloaded.
- See the ThinkTank video Connecting to Your Dropbox from Pronto.

Import File

- The Import File functionality supports the following file types (that this is a subset of the old file upload functionality):
  - .csv file
    - Excel (.xls, .xlsx) with MS Office 97-2003, excluding crosstab and password-protected files
    - Excel (.xls, .xlsx) with MS Office 2007-2013, excluding crosstab and password-protected files
    - ZIP (.zip) files of the above, without password protection
Scheduling file imports is not supported. ZIP files with password protection are not supported. International characters (multi-byte) are supported. File Import has the same limits as usual, 20mb.

Notes and Caveats for Excel files:
- Excel files that are password-protected are not supported.
- Crosstab Excel files are not supported.
- File and sheet (tab) names with the following characteristics will be changed in Pronto:
  - Leading and trailing spaces will be replaced by underscores (_)
  - The characters periods (.), asterisk (*), back slashes (\), forward slashes (/), colons (:), question marks (?), single quote marks ('), quote marks ("), less than (<), greater than (>), and pipe (|), will be replaced by underscores(_)
- An Excel sheet (tab) becomes a table in Pronto. A file with multiple sheets will result in multiple tables.
- Birst has no percentage or currency datatypes, so a column formatted as percentage in Excel does not appear as expected in Birst.
- Pronto uses the first non-empty row of a sheet to create the table column names.
- There are limitations on column names and Pronto will change the content accordingly:
  - Pronto does not support Excel files that have double tildes (~~) in either the file name or in any workbook or sheet name.
  - The following characters are deleted from column names: tilde (~), acute (´), asterisk (*), left and right parenthesis, ((())), plus (+), equals (=), pipe (|), left and right brackets ({}), left and right square braces ([]), single quote mark (‘), double quote mark ("), question mark (?), period (.), and comma (,)
  - For Excel file imports, column names that contain only the unsupported characters listed above will be named "sourceName Column1", "sourceName Column2", etc. Pronto generates the column names when data exists in the first 100 rows of the source.
  - Leading or trailing spaces are removed.
  - The following characters are supported: A-Z, a-z, 0-9, _, !, @, #, $, %, ^, &, \, ", ;, /, <, >

Google Analytics Connection

A Google Analytics connection requires a Google Analytics account that tracks one or more websites.

Jira Connection

A Jira connection requires a user account that is enabled for the Jira API. Make sure that your Jira user account has that functionality enabled.

Filters are only supported on the Issue table.
**Marketo Connection**

A Marketo connection requires a Marketo REST API account user endpoint, client ID, and client secret. To find the endpoint, log in to Marketo as the REST API user and select Admin - Web Services - Integration. To find the client ID and client secret, log in to Marketo as the REST API user and select Admin - Integration - Launch Point.

**Salesforce Connection**

- A Salesforce connection requires a username and secret key password. Make sure your Salesforce account uses a secret key password. Contact your Salesforce Administrator for assistance.
- When entering a secret key password in Birst, use the format `passwordtoken`. Your Salesforce password and security token must be concatenated.
- Some Salesforce tables are not supported by the Salesforce API, and therefore are not displayed in Pronto.
Networking

Business users can share, connect to, and blend their data to organically build up data models, reports and dashboards. Additionally, Birst Admins can share centrally curated data with business users who can then connect to and blend their own personal data with the centrally curated data.

How do I access it?

The access to Networks is now available from the Pronto Home menu for creating networks and the Pronto Connect page for consuming shared networks.

Who would benefit from leveraging Pronto Networking?

Birst admins and business users looking for an easy way to use granular and flexible sharing of business definitions.

Business users collaboratively connecting to shared data within their department/enterprise with the capability to extend it with their personal data sets.

What can I do with Pronto Networking?

Searching and viewing networks: The following types of networks are shown in the Networking module and are personalized to the logged in user:

- Created Networks display the list of created networks in the space your logged into. Networks can be shared across an account.

- Connected Networks display the networks your space has made a connection.
Available Networks display the list of networks you have access to view and connect.

<table>
<thead>
<tr>
<th>Networks</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Available</td>
<td>Connected</td>
<td></td>
</tr>
<tr>
<td>Search</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Google Analytics Net</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catego</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Categories_CatIDCatName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Google Analytics 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use the Search box to retrieve the desired list of available Networks.

**Sharing columns via a network**: Pick Measures, Attributes, Custom Groupings, and Saved Expressions from a subject area and drag & drop to form the definition of the shared columns in the network. You can also drag and drop an entire subject area.
Sharing a network: Networks can be shared either "private" with specific users or "public" with all users in the account. When sharing privately, make sure the users already have Pronto access.

Exploring and Connecting to networks: View available networks and additional information (name, origin space, created by, updated by, # projects imported into, # users connected to the network, description).
After exploring networks, connect to the network of your choice with a single click. Connecting to a network makes it available in the Relate.

**Blending with networks:** Connected networks display in Pronto Relate categorized by the network name and broken into the dimensions/measures within it for easy data modeling. Networks can be blended by creating relationships between local dimensions and connected dimensions. The Network shared measures and attributes are magnified in this image.
Reporting on connected networks: Connected networks display as custom subject areas in Visualizer for logically accessing the shared columns and for personalized end user reporting.

Pronto Networking Workflow

Business users can share, connect to, and blend their data to build up data models, reports and dashboards. Additionally, Birst Admins can share centrally curated data with business users who can then connect to and blend their own personal data with the centrally curated data.

Note: A Pronto space cannot re-share a connected Network that has been made available from another Space.

To expand, Networks can only include attributes, measures, and expressions defined in your personal space. You cannot include the time series, re-share attributes, measures, or expressions made available from a Connected Network that your space is consuming.

You create Networks for sharing by using the Pronto Home menu Network feature:
Name the Network you are creating:

Select the Measures and Attributes that you want to share and make it available to other users. Sharing a Network Publicly makes it available to all users within the Birst account.
You consume (import) Networks using the Connect Network feature:
Analysts can search and connect to Networks that have been shared with them.
**Note:** You can create Networks for both Pronto and ADR spaces. Before consuming Networks, ADR spaces should be converted to the new Pronto metadata structure.

Networked data can be related to your Pronto space:

**Note:** Birst displays the various type of sources in different colors when viewing on the Relate page. Any consumed Networked sources display in Purple (lilac) with a container around the sources. The container uses the name that was given when the Network was created and shared.
To make it easier to identify the types of source you are relating, Pronto provides a color code scheme.

- Network sources display in purple (lilac)
- Raw sources (not prepared) display as blue
- Prepared sources display as turquoise
- Live Access sources display as marigold
Pronto Network Example

We have two spaces, a Sales space containing information about sales, leads, opportunities, contacts, and campaigns. Another space from Google Analytics that contains the sum of unique web page views based on campaigns.

Rather than importing the data based on the Google Analytics into the Sales space, we can instead make use of packages or Network BI to correlate the campaign’s effectiveness on Sales based on the web page traffic recorded by Google Analytics.

We’ll start by making the Google Analytics (GA) Network available to our Sales space as follows:
After sharing the Network, we open the space where we want to connect (consume) the shared Network data and create a relationship (Relate) upon that we can then build reports.

Our two spaces are now connected via the network we just created and shared. We can now build a report to determine which campaigns were most effective based on the number of page views captured by our Google Analytics space.
FAQs

Q How do I create Networks?

A Creating networks: Networks can be created for both ADR and Pronto spaces/projects by using the Networking module when you select a space. In both the cases, the user must be logged into the Birst 6 environment. Please reach out to your CSM if you have questions regarding access to Pronto Networking as this capability is not yet available in 5.27 via login.birst.com.

Q Can I create Networks from original ADR based spaces?

A Creating networks from ADR spaces: Convert an ADR space to the new metadata infrastructure before using Pronto networking. This can be done once the account has been provisioned for the feature by going to Manage Space > Modify Properties and enabling "Convert space to new metadata infrastructure". See Convert Classic ADR Space to Pronto Spaces for more details on this process.

Q Can I re-share a network (its attributes, measures, saved expression, custom groups) that have already been shared with my space?

A Re-sharing networks: Columns from imported networks cannot be re-shared. They currently do display in the subject areas panel while creating a new network and will be hidden in an upcoming release. Note: A Pronto space cannot re-share a connected Network that has been made available from another Space. To expand, Networks can only include attributes, measures, and expressions defined in your personal space. You cannot include the time series, re-share attributes, measures, expressions or custom groups made available from a Connected Network that your space is consuming.

Q Can my existing MDM (managed data mashup) packages in my ADR space be connected to and used as a network?
While sharing from an existing ADR space, the networks need to be recreated using the subject area like interface. Existing MDM packages are not automatically migrated as Pronto networks provide a degree of flexibility and granular sharing that existing MDM packages do not afford.

Why do you see a collision detected error message?

A Collision was detected by Birst while connecting to a network. Matching columns from two different spaces are not allowed. Either remove the conflicting column from your current space or from the shared Network.
Prepare Data

On the Prepare page, you can make additional modifications and transformations to the data. Transformations are familiar and straight-forward, such as splitting or merging columns, filling in empty cells, etc. Complete descriptions of the modifications are at Deep Dive: Transformations.

Pronto has the concept of a “prepared source”, that is a view of the data, based on the raw source, that Birst updates on a regular basis, so that your reports and dashboards are always up-to-date.

You can create multiple prepared sources from the “raw” or base sources that you extracted in the Connect page. If you to need merge tables from multiple raw sources, you can. Prepared sources are an efficient way to manage your report data, especially when you have different uses for the same tables.

To get to the Prepare page, select it from the main Pronto menu.
The Prepare page lists all your tables and has a work area for preparing sources.

Since every prepared source is based on a raw source, first select the raw source by clicking its Create button.
Then name the prepared source.

The new source is listed with the raw sources. Note the difference in the icons for raw and prepared sources. When you hide a source, meaning that you don’t want to see its columns in Visualizer or Dashboards 2.0, the icon includes a little eyeball.

Pronto displays a preview (up to 100 rows) of the columns from the base source in the work area. These are the columns you chose in the Connect page.
Underneath the preview is the transformation pipeline. This is a visual history of how you create the prepared source. The first event in the history is the name of the raw source. For a deeper look at the pipeline, see Deep Dive: Prepare Pipeline.

There are many transformations you can perform on the data, to make it better suit your reports. Some transformations apply to the table as a whole, and some to individual columns. In this example I'll show a simple one on a Date column. This column includes the timestamp along with the date, and the timestamp is really not needed for the reports.

I first select the Date column, then select the Date transform. I want to take out the Time element.
Pronto adds a column to the end of the series, and here you see the Date without the Time. Also, notice that the data type changed from DateTime to Date.

In the transformation pipeline there’s a new node for this Data change. If you don’t like the results of a transform, you can select its node and edit it again.
You may wonder why Pronto created a new column and didn’t just change the existing one. That’s because you may want to do another transformation on the original column. Plus, it’s easy to get rid of a column you don’t want… just select it, and click the Ignore transform.

Change the name of the column.

Save the prepared source by clicking Publish.

Pronto’s indicator shows it’s working and lets you know when it is done.
Click the X button in the Transforms menu to go back to the list of tables and make more prepared sources.

If you ever need to go back and change it, you can. Pronto saves the whole history of changes. Just select its transform button from the list.

Data Profile display of Prepared Sources

After successful publishing, prepared sources data profiles can now display to aid in the iterative data prep process. Data profiles are available only for prepared sources.
## Deep Dive: Transformations

On the Prepare page, you can make additional modifications and transformations to the data. See Prepare Data. This section lists the available modifications and describes what they do.

### Available Transformations and Their Icons

<table>
<thead>
<tr>
<th>Transform</th>
<th>Description</th>
<th>Menu Icon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Column</td>
<td><strong>Important:</strong> Not available in the Trial. Upgrade to Birst Professional Edition! Add a new column by writing an expression for customized data. See Deep Dive: The Add Column Transform.</td>
<td>Add Column</td>
</tr>
<tr>
<td>Append Table</td>
<td>Append is a common operation used by analysts for data workflows. Common use cases include appending historical data with current data, appending data from various retail outlets, or multiple profiles in the case of Google Analytics. Append is inspired by SQL based Union and Union All statements. Union appends rows by removing duplicate rows, whereas Union All appends all rows that may include duplicates.</td>
<td>Append Table</td>
</tr>
<tr>
<td>Combine</td>
<td>Merge two columns into one, with or without a delimiter. By default the delimiter is a comma.</td>
<td>Combine</td>
</tr>
<tr>
<td>Data Type</td>
<td>Changes the data type of the column or columns. It does not change the data type in the source data, only for the column in Birst. In addition to the standard date casting, users can now suggest date formats for parsing and casting Numeric and Text columns into Dates.</td>
<td>Data Type</td>
</tr>
<tr>
<td>Date</td>
<td>Allows a variety of functions related to dates. See Deep Dive: Date Transforms.</td>
<td>Date</td>
</tr>
<tr>
<td></td>
<td>Works only with columns of type date or datetime. If you try to apply this to other types of columns there will be an error.</td>
<td></td>
</tr>
<tr>
<td>Filter</td>
<td>Filters the rows based on the contents of one or more cells in the column. A filter transformation cannot be edited once you create it.</td>
<td>Filter</td>
</tr>
<tr>
<td>Ignore</td>
<td>Excludes the column from the Birst data store. Does not change the column in the source.</td>
<td>Ignore</td>
</tr>
<tr>
<td>Index</td>
<td>Creates a new column of ascending sequential numbers titled &quot;Index&quot;, most often used as an index on a table.</td>
<td>Index</td>
</tr>
<tr>
<td>Transform</td>
<td>Description</td>
<td>Menu Icon</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Lookup</td>
<td>Create a new column based on a lookup value in another table.</td>
<td><img src="image" alt="Lookup" /></td>
</tr>
<tr>
<td>Merge</td>
<td>Merges columns from two tables into a single table. See Deep Dive: Merge Tables Transform.</td>
<td><img src="image" alt="Merge" /></td>
</tr>
<tr>
<td>Null Handling</td>
<td>Replaces empty cells in a column or columns with text of your choice.</td>
<td><img src="image" alt="Null Handling" /></td>
</tr>
<tr>
<td>R Transform</td>
<td>The R transform lets users leverage R code when applying transformations to a prepared source.</td>
<td><img src="image" alt="&quot;R&quot; Script" /></td>
</tr>
<tr>
<td>Remove Duplicates</td>
<td>Remove duplicates deletes records based on the contents of one or more columns. When employing this transformation, the first matching record is kept while the other matching records are removed from the prepared data source.</td>
<td><img src="image" alt="Remove Duplicates" /></td>
</tr>
<tr>
<td>Remove Records</td>
<td>Delete records based on the contents of one or more columns. You can edit or delete this transformation.</td>
<td><img src="image" alt="Remove Records" /></td>
</tr>
<tr>
<td>Rename</td>
<td>Renames the title of the selected column or columns.</td>
<td><img src="image" alt="Rename" /></td>
</tr>
<tr>
<td>Replace</td>
<td>Find and replace a value in the selected column. Can replace multiple values at the same time.</td>
<td><img src="image" alt="Replace" /></td>
</tr>
<tr>
<td>Split</td>
<td>Split one column into two or more columns, based on either a delimiter or a number of characters.</td>
<td><img src="image" alt="Split" /></td>
</tr>
<tr>
<td>Split Row</td>
<td>Duplicates a column based on a selected delimiter.</td>
<td><img src="image" alt="Split Row" /></td>
</tr>
<tr>
<td>Summarize</td>
<td>Summarize both groups one or more rows based on matching values, and also shows a calculation based on data another column. A Summarize transformation cannot be edited once you create it.</td>
<td><img src="image" alt="Summarize" /></td>
</tr>
</tbody>
</table>
### Add Column

**Important:** Add Column is not available in the Trial. Upgrade to Birst Professional Edition!

The Add Column transformation adds a column to the table. You give it a name and a formula for the contents, or just some text. The formula uses the Birst Query Language, BQL. BQL is similar to macro or other query languages. Then you assign a data type for the column. See [Deep Dive: The Add Column Transform](#).

![Add Column](image)

### Append Table

The Append Table transformation lets you append a table with another table similar to SQL based Union and Union ALL operators. This generally works best for tables with the same structure and data types. **Note:** You cannot include columns with different data types as part of the union condition.

#### Append Tables with Matching Columns

*Click the image to run an animation:*
Append Tables with non Matching Columns and Data Types

You can create Unions with tables with similar data from different systems but you may need to create some default values for columns that do not map to each other. For example, another system may capture city but not region and you want to create a Union with a table that captures both City and Region. You could enter a default value for the table that lacks the Region data so it can map to the Region column as desired. You cannot create Unions with columns that contain similar data but different data types. In this example, one table has Transaction Amt in Decimal data type, while the other table contains Sale in numeric data type. See how Birst prevents these values from creating a Union.

Click the image to run an animation:
Combine

You can combine the data from two columns into one column, and optionally indicate a separation, using a delimiter or a space, between the two. By default there is no space between the two.

*Click the image to run an animation:*

One of the most common uses of the combine operation is to put a first name and last name together, or to put address or location columns together. For example you could combine a City column with a State column and separate them with a comma.

Data Type

The Data Type transformation changes the type of data in a column or columns. Sometimes a column from the original source is one type, and you want to relate it to a column from another source that is a different type. You would need to change one of them so that the data types match.

Data type conversions include varchar, integer, float, date, and datetime. When you change a data type, Pronto changes the selected column, it does not create a new column.

*Click the image to run an animation:*
When changing date or datetime columns, you may see the following results:

- When you change a date to a datetime, Pronto updates the data in the column and adds the timestamp 12:00:00.000AM.
- When you change a datetime to a date, Pronto drops the timestamp.
- When you change a datetime to a varchar, Pronto reformats the date, from the 08/29/2016 5:39:00.000 AM format as a datetime to the 2016-09-02 06:01:00.000 format as a varchar.

When changing varchar columns to integer or float, change or remove any non-numeric characters first. By default if a varchar with non-numeric characters is converted to integer or float, the conversion results in 0.0.

**Parse Dates Data Type Enhancement**

In addition to the standard date casting, users can now suggest date formats for parsing and casting Numeric and Text columns into Dates.
Date

The Date transformations are a variety of functions that modify columns of type date or datetime. See Deep Dive: Date Transforms.
Filter

Filter changes the rows in the table based on the values in the cells. Filters use operators including as equal to, not equal to, greater than, greater than or equal to, less than, less than or equal to. For example you can filter data out of a table based on the value of a cell.

Click the image to run an animation:

Wild cards and partial entries are not supported. The filter value text must exactly match the text in the cell. For text columns, the greater than and less than operators use alphabetical order.

Ignore

The Ignore transformation makes the column invisible in the table. The column is still part of the prepared source, but you won't see it.

When you select a column and click Ignore, the screen refreshes and the column is gone. To get it back, click on the Ignore icon in the pipeline and select delete.

Click the image to run an animation:
FAQ: What is the difference between using Ignore in the Prepare page and just excluding it when you define the connection in the Connect page?

If you won’t need a column anywhere in your dashboard or reports, then don’t put it in the connection and it won’t be extracted from the original source at all. Sometimes you need a column in some reports and not others; in this case you’d extract it, and use it in a prepared source for a report that needs it. Then use the Ignore transform in the prepared source for a report that doesn’t need the column.

Index

The Index transformation sets up a new column with numbered rows. You can set the starting number of the index. If you create more than one index column, the column name is appended with a number.

Click the image to run an animation:
You can set the starting number of the index. If you create more than one index column, the column name is appended with a number.

<table>
<thead>
<tr>
<th>Issue ID</th>
<th>Votes</th>
<th>Index</th>
<th>Index1</th>
</tr>
</thead>
<tbody>
<tr>
<td>39374</td>
<td>12</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>23651</td>
<td>23</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>49290</td>
<td>56</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>51886</td>
<td>42</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>51568</td>
<td>33</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Index can be used as a way to uniquely identify a row, or as a simple counting mechanism.

**Lookup**

Lookup is a common operation that analysts use for data cleansing. Lookups in BI tools are similar to Vlookup and Hlookup in Excel where the Vlookup provides a matching a key value to a column and returns the corresponding value to a different column. The first match is considered if there are duplicates and any unmatched columns can return a specified default value.
Merge

The Merge transformation takes the columns from two tables and puts them together into one new table. You can show only some columns from each original table, or take them all. See Deep Dive: Merge Tables Transform.

Null Handling

Sometimes there is nothing in a cell, and you don't want to leave it blank. You can put text into the empty cells of a column or columns.

Click the image to run an animation:
The R transform lets users leverage R code when applying transformations to a prepared source.

Similar to the Index column, the R transform is only active for the entire prepared source and not when you select a column in the source.

**Note:** The R Transform will not be active if you did not set up your R server Connectivity in Pronto Connect.

Select a prepared source, and then select the R Transformation to run R code against a prepared source:
Enter R code in the editor box to complete your R transformation.

You are Provided with guidance for your R code script entry:
Enter your R code and validate:

# use 'input' to refer to the original dataset in your R code
# use 'output' in your R code to store to the final dataframe

After the code executes successfully, click Done.

View the results of the R code transformed prepared source.
Saving the R transform updates the prepared source with sample data based on the R code returned results from the R server. You can then add any subsequent steps to your prepared source. Publishing the prepared source runs the R code on the entire data set. The prepared source can be schedule for import.

Remove Records

Deletes records based on the contents of one or more columns. Select a column and enter the condition(s) for which you want to remove records from your prepared source. **Note:** Be careful when entering your criteria as the Remove Records transformation will remove all records that meet the criteria. For instance, When entering "Fran" in the below condition, the Remove Records transformation will remove all of the records that start with "Fran".
If you need to edit or delete the Remove Records transformation, simply select the transformation from the Transformation pipeline and select the desired action.

**Remove Duplicates**

Remove duplicates deletes records based on the contents of one or more columns. When employing this transformation, the first matching record is kept while the other matching records are removed from the prepared data source.
Rename

Rename controls the labels of column headers. Just select a column or columns and type in new names.
Replace

Replace is a standard search-and-replace in a single column. Select the column and provide one or more text or number replacements.

Click the image to run an animation:
Split

Split will divide the contents of a cell into multiple cells by adding a column. You can split on a delimiter, or on a count of characters. The new column is next to the original one, and you can use the Rename transform to give it a different name.

Click the image to run an animation:

Split Row

Split row is a way to duplicate rows based on a delimiter. You can use one of the delimiters in the dropdown list or enter your own. For this example the rows that have an ampersand (&) in the selected column are duplicated.

Click the image to run an animation:
Summarize (Group By and Show Calculations)

Summarize both groups one or more rows based on matching values, and also shows a calculation based on data another column.

A Summarize transformation cannot be edited once you create it.
Text

Text provides uppercase and lowercase transforms, plus it will trim extra blank spaces.

Click the image to run an animation:

Add Column Transform

Important: The Add Column transform is not available in the Trial version. Upgrade to Professional Edition!

The Add Column transformation adds a column to the table. You give it a name and a formula for the contents, or just some text. The formula uses expressions based on the Birst Query Language, BQL. (BQL is similar to macro or other query languages.) Then you assign a data type for the column.

You don't select a column first. Use the Transforms menu for a source on the list at the left.

Example of Add Column

With the 5.28 release, the Add Column transformation now utilizes an Expression Editor that offers suggestions as you type. When adding a column, you can enter your expression in the editor and Birst will prompt you with possible functions, attributes and measures.

Many times, a new column is based on one or more existing columns for which a formula can be applied. For example,
In this example, we made use of the DateDiff function to return the number of days to ship based on the columns OrderDate and ShippedDate. You provide a new column name and select the data type, then start typing in the expression editor your formula.

Birst continues to provide auto-complete suggestions until the expression is complete.

The sample code used in this example is:

DATEDIFF(DAY, [OrderDate], [ShippedDate])

And the following is the animated version of this example.
In next example, we demonstrate how to prepend text to the contents of an existing column to create a new column:

'Birst Ninja' + ' ' + [FirstName]

**Note:** If you want spaces, enclose the spaces with single quotes.

**Expression Editor supported Functions and Operators**

On user input, auto-completion should be able to suggest the following:
• Operators (such as +, =, IS NULL)
• Functions (such as ABS, IFNULL, SUBSTRING)
• Operands
  • logical column names that were output from the previous step, enclosed in square brackets (ex. [CategoryID])
  • values like 1, true, 'string', 0.5, #12/31/2017#, #12/31/2017 11:59:59 PM#

The following functions and operators should be supported:

• Operators
  • = equals
  • * times
  • + plus
  • / divided by
  • - minus
  • % modulo
  • < less than
  • > greater than
  • <= not equal to
  • <= less than or equal to
  • >= greater than or equal to
  • AND
  • OR
  • LIKE
  • NOT LIKE
  • IS NULL
  • IS NOT NULL

• Functions
  • ABS
  • ADD
  • ADDPARENTCHILD
  • ARCCOS
  • ARCSIN
  • ARCTAN
  • ATAN2
  • Casting: FLOAT(), INTEGER(), DATETIME()
  • CEILING
  • COS
  • DATEADD
  • DATEDIFF
  • DATEPART
  • DATETIMEPARSE
  • DEGREES
  • EXP
  • FLOOR
  • FORMAT
  • GETDAYID
  • GETMONTHID
• GETWEEKID
• IFNULL
• IIF
• ISINF
• ISNAN
• LENGTH
• LN
• LOG
• LOG10
• LTRIM
• NOW
• NOWDATE
• POSITION
• POW
• RADIANS
• PI
• RANDOM
• RTRIM
• SIGN
• SIN
• SPACE
• SQRT
• SUBSTRING
• TAN
• TOLOWER
• TOTIME
• TOUPPER
• TRIM

• Functions which are NOT included:
  • ADDPARENTCHILD
  • DISPLAY BY
  • DISPLAY WHERE
  • DRANK
  • DTOP
  • FIND
  • FUNCTION
  • FUNTIONLOOKUP
  • GETLEVELATTRIBUTE
  • GETLEVELVALUE
  • GETPROMPTFILTER
  • GETPROMPTVALUE
  • GETVARIABLE
  • LET
  • LOOKUPROW
  • LOOKUPVALUE
  • MEDIAN
  • NEXTCHILD
  • NUMROWS
Expression Syntax Basics

Put column names in square brackets. For Birst experts, please note that there is no need to add aggregation syntax, just the column name will do.

[My Column Header]

Enclose strings in single quotes.

'Pronto'

Supported operators include:

=, <, >, <>, <=, >=, *, AND, OR, LIKE, NOT LIKE, IS NULL, IS NOT NULL, + (concatenate), % (modulo)

For a lot more details, see the BQL and Expressions Reference PDF on ThinkTank.

See the other Pronto transformations at Deep Dive: Pronto Transformations Reference.

Date Transforms

The Date transformations are a variety of functions that modify columns of type date or datetime.
Date Extract

The Date Extract option pulls out just a part of a date, such as the year or month. For datetime data that includes both a date and a timestamp, you can extract either using the Date Extract - Date or -Time options. Pronto makes a new column for the extracted data and gives it a name based on the original column.

Click the image to run an animation:

Date extract columns may be given a different data type than their original. For example, a Date extract from a datetime column will have a date datatype, and a Time extract will be of type varchar.
Date Add and Subtract

The Date Add and Subtract options affect the year, quarter, month, day, hour, minute, or second of a date or datetime column.

Click the image to run an animation:

Difference with Now

Difference with Now counts the years, quarters, months, days, hours, minutes, or seconds between the date or datetime in the column and the time of the Birst Cloud server.

Click the image to run an animation:
Difference

Difference counts the years, quarters, months, days, hours, minutes, or seconds between the date or datetime between two selected date or datetime columns.

Click the image to run an animation:

See the other Pronto transformations at Deep Dive: Pronto Transformations Reference.
Merge Tables Transform

The Merge transform is a special kind of transformation because it results in a whole new table. Merge takes the columns from two tables and puts them together into one new table. You can show only some columns from each original table, or take them all.

Merge requires that one column from each table have a close relationship to each other, even to the point of duplication. This is so that the rows correlate properly in the resulting prepared source.

First, go to the Prepare page and create a new prepared source based on one of the tables you want to merge. Ideally this is the table with the most information that you want to use.

*Click the image to run an animation:*

Then click Add Step to open the Merge dialog.

*Click the image to run an animation:*
Select the tables, select the columns that match, and then normally you hide one of the matching columns, since you don’t need to show them both in a report. Also, ignore any other columns you don’t want in the final prepared source.

Click the image to run an animation:

Pronto lists the new prepared source. Click Publish so that it can be used in Visualizer.

See the other Pronto transformations at Deep Dive: Pronto Transformations Reference.
Deep Dive: Prepare Pipeline

The Prepare page has the options for transforming the raw data into report-friendly formats. The pipeline at the bottom of the page shows the history of these transformations. The pipeline itself has useful tools for managing the transforms, including:

- Add Step
- Cancel
- Tooltips
- Descriptions
- Edit
- Insert Transformation Before
- Delete

Add Step

Add Step is the node at the end of the pipeline. Click Add Step to activate the selection checkboxes in the preview, and apply another transform.

Cancel

If you are in edit mode to add a transform, and decide not to do it, click the X to cancel it.
**Tooltips**

Hover over a node to see its tooltip that describes the user who created it and when. If there is a Description it will also display.
Descriptions

It’s a good idea to leave a note about the changes you make in the Prepare page. Click on a node to open its menu and select Description to add a note.

Edit

If you need to edit an existing transformation click on a node to open its menu and select Edit.
Insert Transformation Before

In some cases the order of transforms is important. Now and then you may need to insert a transform between to others.

For example, you may have merged two columns and then discover you need to fill in some empty values in one of them. It makes sense to take care of the null handling before doing the merge.

Click on the newer one to open its menu and select Insert Transformation Before.

Delete

To delete a transform, click on its node to open its menu and select Delete.
<table>
<thead>
<tr>
<th>Category ID</th>
<th>Category Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Beverages</td>
<td>Soft drinks, coffees...</td>
</tr>
<tr>
<td>2</td>
<td>Condiments</td>
<td>Sweet and savory s...</td>
</tr>
<tr>
<td>4</td>
<td>Dairy Products</td>
<td>Cheeses</td>
</tr>
<tr>
<td>8</td>
<td>Seafood</td>
<td>Seaweed and fish</td>
</tr>
<tr>
<td>5</td>
<td>Grains/Cereals</td>
<td>Breads, crackers, pa...</td>
</tr>
</tbody>
</table>
Refresh Data

Dashboards and reports are great tools for visualizing and analyzing the state of your organization or project, but they are not so useful if the data gets stale or a metric loses its meaning. That's why it is so important that the data gets refreshed on an ongoing basis.

Pronto will go to the data source and re-import it, and republish any prepared sources, on a schedule that you set up.

Pronto refreshes and updates all of the raw sources in the entire project. If there are prepared sources, Pronto will also publish them after their raw source is extracted. Recall that the publish functionality takes the raw data and applies any transformations that you defined in the Prepare page, and updates the prepared source, so you definitely need both of those processes to run.

The refresh feature is on the Pronto Prepare page, above the list of sources.

The Run now option immediately imports and publishes, which is very useful when you are building and refining your project, or when you know about a change and want to update right away. By the way, the Connect page also has an option to refresh.

When you have gotten to the point in your project development where you want to refresh the data on a regular basis, here are some things to think about:
- What is the optimum time relative to the data refreshes in the actual connection? You'd want to update Birst after any regular updates in Salesforce, for example, or after a day's work in Jira.
- When are people most likely to view the reports and dashboards? You may want to do a refresh prior to the start of the business day.
- Do you want to get an email saying that the refresh happened?

To create a schedule from Prepare - Schedule - Create, first toggle it on. (This is so you can disable it later, if you want to temporarily pause the schedule.)

![Refresh data](image)

Then schedule the frequency and time of the update, such as every Monday at 8AM PST. By default Pronto will send an email to the owner of the project, so if you don't want to be notified you can toggle it off.

Click Save.

**Incremental Refresh for Prepared Sources**

You can set up prepared sources for incremental refresh. Raw sources are always setup for full refresh while prepared sources can be set to full refresh (default) or incremental refresh. You can now set up prepared sources (based on one or more columns) for incremental refreshes. You have the option to (Keep Original) or (Replace Original) for any matching values in existing rows in the prepared source.
Then select the Incremental tab and select your criteria.
### Data Refresh

**Full Refresh**

**Incremental Refresh**

- Keep Original
- Replace Original

#### Keep Original

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>10</td>
<td>Profile ID</td>
</tr>
<tr>
<td>[ ]</td>
<td>T</td>
<td>Profile Name</td>
</tr>
<tr>
<td>[ ]</td>
<td>✓</td>
<td>Start Date</td>
</tr>
<tr>
<td>[ ]</td>
<td>✓</td>
<td>End Date</td>
</tr>
<tr>
<td>[ ]</td>
<td>T</td>
<td>Campaign</td>
</tr>
<tr>
<td>[ ]</td>
<td>T</td>
<td>Medium</td>
</tr>
<tr>
<td>[ ]</td>
<td>T</td>
<td>Default Channel Grouping</td>
</tr>
<tr>
<td>[ ]</td>
<td>10</td>
<td>New Users</td>
</tr>
</tbody>
</table>

[Cancel] [Save]
Relate Data

The Pronto Relate page helps you set up relationships between the various data sources you have imported and set up in Pronto. If you are familiar with database joins and know about attributes and measures, the Relate page handles all of those.

Use the Relate page when you know that the report you want to make needs to show data from multiple sources, and for one of many reasons it doesn't make sense to merge the tables together.

Using the Relate page is optional... if your data is already set up the way you need it for reports, you can go straight to Visualizer after you've uploaded the raw sources and extracted them in the Connect page, or after you've created prepared sources and published them in the Prepare page.

When you go to the Relate page for the first time, you see all of the data sources, both raw and prepared, arranged in a circle.

Tip: If Pronto detects that there are changes that haven't yet been published (saved), you get a message prompting you to Publish before using the Relate page.

What relationships do you want to create between the different sources, and what columns can help to define the relationship?
For example, if you want a report that shows what leads came from what marketing campaigns, you create a relationship between the CampaignMember and Lead tables. The column that they have in common is the Lead ID column.

In this example, you select the Connection_Lead table, and the CampaignMember table. Pronto shows the columns from each on the sidebars.

Then you tell Pronto what to use for the join. Select a column from the left; it should be a column that has unique values in every cell, such as an ID column. Pronto grays out the columns on the right that are not going to match, and leaves the ones that may match, based on an automatic analysis of the data.
In this case the Lead ID in the CampaignMember table is the best match. When you click it, Pronto creates the relationship (join) and shows it to you.

Using the Recommendation Method

If you already know what columns relate to each other from different tables, you can pick them out yourself. Pronto will also make suggestions of possible column relationships.

When you click on a column on the left, Pronto gives suggestions for possible joins on the right. These suggestions are based on data types and not on the actual data in the columns, however if you select one that really doesn’t match, Pronto warns you and you can delete it.
To make a join, drag the join line from a column on the left to the corresponding one on the right.

Changing Column Types

For advanced users, note that you can change a column from an attribute to a measure or vice versa, or make one of each.
When you are done in Relate, click the Main menu to go to the link to Visualizer.