eHealth Report Center offers two web-based custom reporting applications for creating reports on eHealth elements: Query Studio and Report Studio.

**Query Studio** enables users to create simple tabular and line reports on eHealth elements and performance variables. These reports can help to answer questions about resources or the state of their infrastructure. Query Studio is typically used for ad-hoc reporting, which allows for fast analysis of eHealth data. Although users can save their Query Studio reports to run them again, they typically do not unless the report answers a question that they check frequently.

Query Studio provides an easy-to-use drag and drop feature which runs reports dynamically. Query Studio provides fast results that can answer questions such as:

- Which systems have the most utilized CPUs?
- Which ATM interfaces are the most underutilized?
- Which routers have the most discards and possibly require more memory or buffer space to address delays and impacts to users?
- Which Frame Relay virtual circuits are being monitored? And what are the system names and speeds for each?

**Report Studio** enables users to create more complex reports that leverage a variety of report formats (such as tables, scatter plot charts, and other presentations) and that contain more than a few variables. Users can create and design page layouts for their reports, place multiple charts and tables on one report page, and create complex SQL queries in the database to obtain the data they need to show their report consumers.

Report Studio is typically used to produce business intelligence reports that allow users to analyze data according to their specific needs. With Report Studio, users build reports that they reuse and also distribute to others.

**Important**: CA Technical Support strongly suggests that eHealth customers who plan to use the extensive eHealth Report Center customization features attend the related training course offered by CA Educational Services. See the eHealth course catalog at http://www.ca.com/education for course offerings and details.

CA Technical Support will ensure that the product is functioning as designed, and will provide troubleshooting support for the standard product functionality. Technical Support cannot provide assistance in developing Report Center custom reports. For assistance with developing these reports or other custom capabilities, please contact the CA Technical Services team.

**Overview**

This topic describes the Report Center user roles and provides a description of the eHealth data model from which you select element information to report on. It describes how to create custom reports with Query Studio and Report Studio by providing you with examples to follow to help orient you to the capabilities of these applications.

This topic is intended for users whose jobs require them to create custom reports. For information on running the sample reports that are provided out-of-the-box and an overview of Report Center, see the *Introduction to eHealth Report Center* topic.
User Roles

There are various Report Center user roles with a variety of permission settings to which eHealth administrators can assign users and groups of users. Administrators assign users to roles based on the tasks they must perform to accomplish their jobs. Some roles provide users with the ability to perform Report Center administrative tasks, while other roles prevent access to these tasks, but enable users to create custom reports. The eHealth administrator can also assign users to roles that allow them to only run reports, if that is all they require.

This section describes, at a high-level, the roles to which eHealth administrators typically assign users and the most common use case for each role. It is important to note that additional roles are available, and the eHealth administrator can assign various permissions to the roles described here. The Report Center online help lists all roles and the permission settings supported by each role.

eHealth Administrator

The eHealth administrator (admin) is the only user, by default, that has access to Report Center and all related tools and applications. The eHealth administrator does the following:

• Provides others with basic access to Report Center by modifying or creating eHealth web user accounts.
• Controls user visibility to specific eHealth elements, groups, and group lists.
• Specifies which users and groups have access to specific reports, applications, or other content, and specifies the actions they can perform on the content.

Because the admin account has the ability to modify and overwrite settings, the admin account is only used to create new user accounts or to modify user settings. The admin account is never used to create, delete, or modify Report Center reports. eHealth administrators must create separate accounts to use for working on reports. For more information, see to the eHealth Report Center Installation and Administration Guide.

Report Consumer

Report consumers have access to Query Studio by default, but typically do not have access to Report Studio. Therefore, they can run ad hoc reports and the sample reports that eHealth provides, but cannot modify reports created by administrators or other report authors.

They can schedule sample reports to run at times that they choose, but typically cannot save these reports after they run. Report consumers typically do not have permission to perform administrative tasks.

The admin can optionally disable Query Studio access permissions. Without this application, consumers are limited to running or viewing pre-defined reports provided for their account.

Report Author

Report authors have the same privileges as consumers, but in addition, they can copy and modify sample eHealth reports and create new reports using Report Studio. These users can also create and modify folders on the Public Folders page.

Report Administrator

Administrators have the same privileges as report authors, but in addition, they can set Report Center security permissions, import and export content, and perform other administrative tasks. Note that the report administrator does not have permission to perform any eHealth administrative tasks.
Creating Custom Reports with eHealth Report Center

eHealth Data Model

Before you begin to create reports, it is important to understand the eHealth data model that is used by both applications. The data model, also referred to as metadata, is a representation of what resides in the eHealth database, which includes not only eHealth element information, but also general dimensions and measurements. The data model defines the various objects (also called query items) that you can place in a report. Objects include a variety of information types such as date and time ranges, element information (name, alias, IP address, speeds, and so on), as well as performance variables. The metadata is displayed in a folder-style format in both applications, similar to the Query Studio example shown here.

There are two major categories for the eHealth data:

**General Dimensions** supply the subjects and time ranges that you can select for reports. Subjects include element and group configuration information, such as element names, IP addresses, speeds, and so on. Time ranges include hours, days, weeks, and months. Dimensions essentially provide the “what” and “when” aspects of a report.

When you create reports, note that you can filter on attributes such as element name. You can also aggregate (total or average) the data, for example, by day of week.

**Measurements** supply the items that can be reported on, such as CPU utilization, availability, and bandwidth. These items are also referred to as trendable variables. Measurements essentially provide the “how much” aspect of a report. They supply the performance details that users are interested in.

The measurements folder contains sub-folders that represent data for the element types that are being monitored. Folders appear only for those eHealth element types that have been discovered. The example on this page shows sub-folders for Router/Switch and System under CPU. If, for instance, the eHealth administrator does not run the discover process for systems in your infrastructure, the System CPU folder would not appear.

When the discover process runs, and changes are made to the eHealth configuration in such a way that an element type is added or removed, it can take up to an hour for the data model to reflect the change.

Before you run reports, you should open and review the eHealth data items and familiarize yourself with the types of data that you can choose.
Query Studio

With Query Studio, you can create simple tabular reports similar to eHealth TopN reports for your eHealth elements. You can also choose other formats such as simple list, grouped list and crosstab reports.

This application also enables you to create charts from existing reports, create calculated columns from other columns in a report, and create custom groups in which you can assign a range of values from one column to a single group value defined in another column. Grouping helps you organize related items, and show totals or summary rows for a group, or for the whole report. Note that these groups are not eHealth groups, but temporary Query Studio groups.

Query Studio offers a wide variety of information to include in reports. For example, you can select from information such as:

- Calendar dates and time ranges, with more options than the default eHealth reports
- Element information such as name, alias, IP address, speed, and others
- eHealth variables such as utilization, volume, errors, and others

The online help for Query Studio provides tutorials on how to use the application. If you are new to Query Studio, it can be helpful to try the tutorials to familiarize yourself with its capabilities.

Ad-Hoc Reporting

To start Query Studio, click the Query Studio link on the Report Center home page. Query Studio opens with a blank report page. To run an ad-hoc report, you drag data from the data model (eHealth Reporting folder structure) into the blank report page. The report builds dynamically as you drag in various dimensions and measurements.

In situations where you are monitoring a large number of elements and are storing large amounts of data, the report generation process can take some time to complete. However, Query Studio includes features that allow you to configure your report with little or no data, which is referred to as “building a query.” When you are satisfied with the items you have included, you can run the report and load your data. The following sections describe this process and other best practices in more detail.
Creating Custom Reports with eHealth Report Center

Query Studio Best Practices

This section lists several best practices to help you get started. Many of these also pertain to Report Studio and can help you avoid generating queries and reports that impact system performance.

Planning. It is important to determine what you want to accomplish before you begin to create a report. If your eHealth system monitors a large number of elements, reports can take some time to load if you include high-level subjects in your query. For example, the subject “Element” will load all elements that you are monitoring, resulting in a report with multiple columns and rows of data. As a general rule, ask yourself what you want your report to answer. For example, you may want to know the average CPU utilization for a specific group of routers for yesterday. Drill-down into the data model and select the smallest level of sub-types possible to meet the needs of your query. See “Items to include” for more details.

Filtering. Query Studio allows you to filter the query to show only the data that you want. To use the filter option, drag a dimension into the report page, select it, and then double-click the filter icon. A list of objects appears with checkboxes, allowing you to select only the items that you want to include in your report. Reports run more quickly when you limit the data to items that satisfy your query and answer your specific questions. For more information on using the filter option, see the Query Studio online help.

Items to include. To run a successful query, you should include certain measurements and dimensions, based on the question you are trying to answer. For example, if you want to know the average CPU utilization for a specific group of routers for yesterday, you want to include the following:

- A subject (a dimension, such as “group of routers”)
- One or more variables (a measurement, such as “CPU utilization”)
- A time dimension. (such as, “yesterday”)
- A presentation value. (such as, “bar chart”)

Then determine which items you want to filter.

Workflow. When you create reports, at a minimum, you must include a selection from the “Date and Time” options available in the General Dimensions folder, and a subject from the Measurements folder.

The recommended order in which you select items from the eHealth data model and use the filter option when building a query is as follows:

1. From General Dimensions, select a time range, and then filter the list.
2. From Measurements, select a technology.
3. From General Dimensions, select a specific element or group (for example, “Sys Name”), and then filter the subject.
4. Finally, drag in metrics such as “prompted” or “base” if you are reporting on five-minute samples.
Preview with Limited or No Data. When you are planning to build a report on a subject that contains large amounts of data, you can optionally choose to build the report with limited data or no data. These options limit the amount of data that the application must retrieve, allowing the initial build to run more quickly. To use one of these options, do the following:

1. Select Run Report, and then select Preview with Limited Data or Preview with No Data. The report page will display “Limited data,” or “Data is turned off.”
2. Click Insert Data, and drag items from the General Dimensions and Measurements folders to the blank report page to build your report.
3. When you are satisfied with the format of the report, click Run Report, and then click Run with All Data. Query Studio then loads your report with all applicable data.

Granularity Prompt. If you select data from two dimensions that are unrelated, Query Studio prompts you to provide a granularity value (5 minute, hourly, daily, or fast-polled). For example, the prompt appears if you select two options similar to the following:

- “Element” and “Date/Time”
- “Group” and “Date”
- “Group List” and “Time”

This prevents you from running a query that will consume your system resources while returning data that may be of little value. For example, while building a report, you drag in the “Element” dimension and the “Date” dimension and click Run. Query Studio queries the database to gather every time stamp for every element. If you have a large number of elements, this query could consume a large amount of system resources while generating a lengthy report. This query also does not return helpful information without a measurement.

For example, if you want to determine on which dates your systems returned bad polls, you would add the “bad polls” measurement to your query. The granularity prompt helps you identify a query that you might want to reconsider before you run it.

How To Create a Report with Query Studio

To help you get started, use the following procedure to create a Query Studio report of the daily average CPU utilization rates for all the system CPUs that eHealth is monitoring.

1. On the Menu pane, optionally select Run Report, and then select Preview with Limited Data. (You can skip this step and load all data while you build your query, however, this may slow the report building process. For more information, see “Preview with Limited or No Data.”)
2. On the Menu pane, select Insert Data, and under eHealth Reporting, click to expand the General Dimensions data tables.
3. Expand the Date/Time and then Date query item folders; then select Calendar Date and click Insert or drag the item to the blank report page. The Calendar Date column appears.
4. Select the Calendar Date column, right-click and select Filter, or click the Filter icon to display the filter controls.

5. Select a specific date in the report period.

6. Optionally, select **Prompt every time the report runs** if you want to be prompted for the day of the report period. As a best practice for optimal report performance, make sure that you select a specific date to narrow the query and prevent the report from showing data for all days in the database.

7. Click **OK** and the report updates to show the range of dates that you selected; then click **OK** again.

8. In the data model, expand **Measurements → CPU → Subtypes**, and then **System CPU** to display query items specifically related to system CPU elements.

9. Expand **System CPU Dimensions** and then **System CPU Element**. Select the **Sys Name** query item and insert it to the report. The report updates to list every system CPU element name that is in the database for that date.

10. Expand **Base SystemCPU Measurements** to select the variable **CPU Utilization**, and then insert it to the report. The report updates with the daily average CPU utilization for each system for the specified date.

11. Optionally, select the **CPU Utilization** column, and then click the sort icon \[A↑\] to sort the utilization values in descending order. This creates a report that ranks the CPUs from most utilized to least utilized. (To sort the values in ascending order, select the column again and click the sort icon.)

12. If you selected **Preview with Limited Data** in Step 1, and you want to load all data for your query into the report, select **Run Report**, and then **Run with All Data**.

<table>
<thead>
<tr>
<th>Calendar Date</th>
<th>Element Type</th>
<th>Sys Name</th>
<th>CPU Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/13/06</td>
<td>System CPU</td>
<td>lam</td>
<td>7.54%</td>
</tr>
<tr>
<td>8/13/06</td>
<td>System CPU</td>
<td>TAR</td>
<td>7.58%</td>
</tr>
<tr>
<td>8/13/06</td>
<td>System CPU</td>
<td>pluto</td>
<td>7.03%</td>
</tr>
<tr>
<td>8/13/06</td>
<td>System CPU</td>
<td>plu</td>
<td>5.26%</td>
</tr>
<tr>
<td>8/13/06</td>
<td>System CPU</td>
<td>green</td>
<td>3.56%</td>
</tr>
<tr>
<td>8/13/06</td>
<td>System CPU</td>
<td>flu</td>
<td>2.00%</td>
</tr>
<tr>
<td>8/13/06</td>
<td>System CPU</td>
<td>nobi</td>
<td>1.60%</td>
</tr>
<tr>
<td>8/13/06</td>
<td>System CPU</td>
<td>nob</td>
<td>1.59%</td>
</tr>
</tbody>
</table>
Saving Reports and Viewing Output

Depending on the permissions that have been set for your account, you can save reports to the “My Folders” area, to the public folders area, or to another location that you specify. Report consumers typically have permissions to save reports to the “My Folders” area, but not to public areas. Report authors can save to public areas, making their reports accessible to other users. To save a report:

1. Click the save icon; the page refreshes.
2. In the Save As field, specify a name for the report.
3. Optionally, specify a description and a screen tip.
4. Select a location to store the report and click OK.

After you save the report, you can optionally view it in one of the outputs listed in the Run Report menu shown here. Note that Microsoft® Excel 2002 and earlier versions support 256 columns. If you believe your report spans a larger number of columns, view the report in another format such as HTML or PDF.

Report Studio

eHealth Report Studio requires Microsoft Internet Explorer. Make sure that your default web browser is set to Internet Explorer before you open Report Studio.

The online help for Report Studio provides a tutorial (tour) that teaches the basic skills of creating reports. You can use the tour to familiarize yourself with various features and capabilities. For example, you can create new reports by copying and customizing the sample reports, and you can create new custom reports. You can choose to leverage the default eHealth “look” of the reports, or you can create unique report appearances for your environment and users.

Important: If you plan to use Report Studio to create new reports or develop custom templates, it is highly recommended that you attend the product training available from CA. See the “Important” note on page 1 for more information.
When you click the Report Studio link on the Report Center home page, Report Studio opens in a new web browser and prompts you to create a new report or open an existing report.

- When you select **Create a new report**, Report Studio prompts you to choose a report style, and opens the appropriate template based on your selection. The following figure displays the Report Studio application with a new bar chart report template. The eHealth data model, described on page 3, appears in the left pane.

![New Report - Report Studio - Microsoft Internet Explorer provided by CA](image)

- When you select **Open an existing report**, the Open dialog box appears. You can open reports from the Public Folders area or from the My Folders area.

  - To access the eHealth sample reports, select **Public Folders**, and then click **eHealth Reporting → Sample Reports**. See the next section for more information on using these reports.
  
  - To view reports that you created with Query Studio or other reports that you saved to your personal folder area, select **My Folders**.

Whether you modify existing reports or create new reports, you simply drag and drop items from the insertable objects area into the report template. For example:

- To add a title, date and page numbers to an existing report, open the report in Report Studio and drag in these objects from the **Toolbox** tab on the **Insertable Objects** pane.

- To create a new report, open a new template in Report Studio, and then drag in objects from the eHealth data model to specify the element data you want to report on. Then, you can drag in objects from the **Toolbox** or **Query Items** tabs.

For more information, see “Report Studio User Interface” on page 11 and “How To Create a Report with Report Studio” on page 11.
eHealth Sample Reports

The eHealth sample reports provide new ways to look at the performance data that eHealth collects, but also serve as templates and provide examples of Report Center design techniques that you can use in your own custom reports. You can do the following:

- **Open report specifications** to view examples and models of custom reports. As you start to work with Report Center, use the sample reports to review the page layouts, queries, and the code contained within them. To open a specification, click File → Open. Navigate to the Sample Reports folder; select a report, and then click Open.

- **Run reports** to see new types of data or new presentation styles. The sample reports all share a common “look” or style. This helps report authors to become familiar with the reports, and to learn new reports more quickly. After opening a sample report, click Run and choose from the various formats in which you can view the report.
Report Studio User Interface

The Report Studio user interface consists of various tabs, buttons and panes that you use to modify and create reports.

- **The work area**, located in the right pane, is where you design reports. When you open a new template or an existing report, it appears here.
- **The Explorer Bar** has three buttons (Page Explorer, Query Explorer, and Condition Explorer) which you use to work with different parts of a report.
- **The Insertable Objects** pane contains objects that you can add to a report. “Objects” can be layout objects, such as graphics and text or report types and tables. This pane contains the following tabs:
  - **Model** tab contains the eHealth data model, which displays query items that you can select for your report.
  - **Query Items** tab describes the queries created in the report.
  - **Toolbox** tab contains a variety of objects that you can add to a report, such as text, graphics and custom eHealth designs. These designs are used in the sample reports to establish a common appearance and repeatable prompts for the reports.

You can reuse these toolbox objects in your custom reports to leverage the style of the eHealth sample reports.

The eHealth-specific toolbox objects enable you to achieve the following types of appearance and style details:

- **Report prompt page layout objects** such as header titles and footer text
- **Report prompt page fields** such as subject or time range prompts, page layouts, and “Required” field designations
- **Report page layout components** such as titles and subtitle information, single chart page layouts, and multi-chart page layouts

**Note:** Toolbox items will grow over time as eHealth styles and sample reports evolve.

- **The Properties** pane lists the properties that you can set for objects in reports.

When you follow the procedures in the next section, you will learn how to use these areas of the interface while you create a custom report.

How To Create a Report with Report Studio

The following sections describe one method to create a new report that follows the design of the sample reports. This example provides step-by-step instructions to build the following:

- A one-page report with a multi-element Trend chart
- A prompt page to select the subjects, granularity, and time range

As part of this report creation process, you will also learn how to:

- Create the queries that are used to gather data for prompts
- Organize prompts into selection fields
- Create a query that specifies how eHealth gathers data from the eHealth database to satisfy the input prompts entries

The final steps in the process require you to “populate” the report, which defines the pages that the user sees after the report runs, and save the report to a location on the eHealth system.
**Step 1: Create a New Report.** For this example, you will create a line chart report.

**To create a line-chart report**

1. Click the Report Studio link on the Report Center home page. The Welcome dialog box appears.
2. In the Welcome dialog box, click **Create a new report**. The New dialog box appears.
3. In the New dialog box, click **Chart**, and then click **OK**. The Insert Chart dialog box appears.
4. Select **Line** under Chart grouping,
5. Select the icon for a Line chart under chart type (second icon in the first row); then click **OK**.

Report Studio queries the eHealth database to populate the Insertable Objects list, which defines the data that you can add to your report. This process often takes a few minutes to complete.

**Step 2: Create Report Prompt Queries.** Most reports require the user to respond to one or more prompts for the information to include in a report. For these types of reports, you must also create a prompt page and the queries that are used to gather the eHealth data that is used in the prompts. Step 3 describes how to design the prompt page that the user sees. This step describes how to create the data queries used in the prompts.

Prompts within a page typically include values like the subject of the report, the report time ranges or report period, as well as the granularity or sample sizes for the data (as-polled, hourly, or daily values, for example). The following procedures describe how to create a query for each type of prompt.
To create a subject prompt query

1. On the Explorer Bar, click the **Query Explorer** button, and then double-click the **Queries** icon.
   a. If a Query1 icon appears in the list, double-click the icon.
   b. If no Query1 icon appears, select the **Queries** icon and in the **Insertable Objects** area → **Toolbox** tab, double-click **Query** to add it to the right pane. It appears as Query1; double-click this icon.

The work area displays Dimensions, Facts, Filters, and Tabular Data areas.

2. In the Properties area, scroll down to the **Name** field and replace Query1 with **Subject Prompt**.

3. Click the Query Explorer button, and note that the query is now named Subject Prompt.

4. In the Insertable Objects area, click the **Model** tab and then expand the **General Dimensions** folder.

5. Drill down to **Element/Group** → **Element** → **Element Name** and then drag the **Element Name** value into the Facts column in the work area twice.

6. In data model, scroll down and expand the **Key Information** folder, and then drag **Element UID** into the Facts column.

7. In the Facts column, click **Element Name1** and in the Properties area, do the following:
   a. In the Name field, replace Element Name1 with **Upper Element Name**.
   b. Double-click the Expression field. The Tabular Model Data Item dialog box appears. In the Expression Definition field, replace the existing entry with `upper([General Dimensions].[Element].[Element Name])`, and then click **OK**.

8. In the Facts column, drag **Upper Element Name** to the Dimensions column.

9. In the Tabular Data area, double-click **Tabular Model**.

10. In the data model in the Insertable Objects area, expand the **Measurements** folder, the **LAN/WAN** folder, and then select **LAN/WAN Filter**.

11. Drag **LAN/WAN Filter** into the Filters column. The Tabular Model Filter dialog box appears.

12. Click **OK** in the Tabular Model Filters dialog box. The subject prompt query appears as follows.

To create a sample size prompt query

1. On the Explorer Bar, click the **Query Explorer** button, and then click **Queries**. Note that in the right pane, an icon appears for the subject query that you created in the previous procedure.

2. In the Insertable Objects area, Toolbox tab, double-click **Query**. A Query1 icon now appears in the right pane.

3. In the Properties area, scroll down to the **Name** field, and replace Query1 with **Sample Size Prompt**.

4. Click the **Query Explorer** button to update the icon name.
5. In the Query Explorer area, double-click the **Sample Size Prompt** query icon.

6. In the data model in the Insertable Objects area, expand the **General Dimensions** folder, and then drag **Measurement Granularity** into the Facts column.

7. Select the List Order fact, and in the Properties area, select **Sort** and in the drop-down list, select **Sort ascending**. The sample size prompt query appears as follows.

![Query Explorer and Insertable Objects](image)

**To create a report period dates/times query**

1. On the Explorer Bar, click the **Query Explorer** button and click **Queries**.

2. In the Insertable Objects area, Toolbox tab, double-click **Query**. A new Query1 icon appears in the right pane.

3. In the Properties area, scroll down to the **Name** field, and replace Query1 with **Report Period Dates/Times**.

4. Click the **Query Explorer** button to update the icon name.

5. In the Query Explorer area, double-click the **Report Period Dates/Times** query icon.

6. In the Insertable Objects area, Toolbox tab, double-click **Tabular SQL**. A new icon appears in the Tabular Data area in the right pane.

7. Double-click the **Tabular SQL1** icon.
8. In the Properties area, change the Connection data item to eHealthDb.

9. In the right frame, click the Edit icon. The SQL dialog box appears.
10. In the SQL dialog, enter the following text by cutting and pasting from this document. (If you enter this text manually, do not place a carriage return before either of the nh_report_period_to_date entries, highlighted in magenta. Do place a carriage return before ‘begin’, #prompt, and ‘end’ and after ‘dual’, highlighted in blue.

   select current_date CURRENT_DATE_TIME, 
   nh_report_period_to_date(#prompt('Select Report Period','text')#, 
   'begin',#prompt('Report Period Begin','text')#, 
   #prompt('Report Period End','text')#) REPORT_PERIOD_BEGIN, 
   nh_report_period_to_date(#prompt('Select Report Period','text')#, 
   'end',#prompt('Report Period Begin','text')#, 
   #prompt('Report Period End','text')#) REPORT_PERIOD_END from dual

11. Click Validate. If an error message appears, review your entry to ensure the text matches the example shown and that you do not omit, or use additional carriage returns, spaces, or commas.
12. Click OK. The Projected Data Items area displays the expected results of your query.
13. On the Explorer Bar, click the Query Explorer button, and then click Report Period Dates/Times.
14. In the Insertable Objects area, click the Query Items tab.
15. Under Tabular SQL, drag the following into the Facts column:
   - CURRENT_DATE_TIME
   - REPORT_PERIOD_BEGIN
   - REPORT_PERIOD_END
The report period dates/times query appears as follows.

![Diagram](image)

**Step 3: Create the Report Prompt Page.** The prompt page is usually the first page that appears when users run a report, and contains the fields where users specify values. The queries that you created in the previous step provide the content for the prompts to which users must respond. The prompt page that you will create organizes the prompts into selection fields.

**To create a prompt page**

1. On the Explorer Bar, click the **Page Explorer** button and click **Prompt Pages**. The Pages dialog box appears.
2. Click the icon to add a new prompt page. The Add dialog box appears with a default name of “Prompt Page1.”
3. Click **OK** to accept the page name, then click **OK** in the Pages dialog box. The prompt page template appears.
4. In the Insertable Objects area, click the **Toolbox** tab, and then drag the **Table with 2 Prompt Fields & Date/Time Prompt** object to the center of the prompt page. The following template prompt page appears.
To create a subject prompt

1. Click the first **Label** text item in the Report Parameters table.
2. In the Properties area, under **Text Source**, change the text to “Elements:”.
3. In the Insertable Objects area, from the **Toolbox** tab, drag the **Select & Search Prompt** object into the cell to the right of the **Elements: ** text item. The Prompt Wizard dialog box appears.
4. On the Choose Parameter page, in the **Create a new parameter** field, replace “Parameter1” with “**Element UIDs**”; then click **Finish**. The Report Parameters table appears as follows:

5. Click the Select & Search Prompt area that you just added, and in the Properties area, under **Data**, specify the following values:
   - For Query: **Subject Prompt**
   - For Use Value: **Element UIDs**
   - For Display Value: **Element Name**
6. Optionally, save the report at this time. As a best practice, save your changes periodically.
To create a sample size prompt

1. Using the same template in the previous procedure, click the second \textit{Label} text item in the Report Parameters table.

2. In the Properties area, under \textbf{Text Source}, change the text to “Sample Size:”.

3. In the Insertable Objects area, from the Toolbox tab, drag the \textit{Value Prompt} into the cell to right of the Sample Size: text item. The Prompt Wizard dialog box appears.

4. On the Choose Parameter page, in the \textbf{Create a new parameter} field, replace “Parameter1” with \textit{Measurement Granularity:} then click \textit{Finish}.

5. Click the Value Prompt area that you just added, and in the Properties area, under \textbf{Data}, specify the following values:
   - For Query: \textit{Sample Size Prompt}
   - For Use Value: \textit{Granularity Type}
   - For Display Value: \textit{Granularity}


7. Click the icon to add a new Default Selection . The Add dialog box appears.

8. Enter \textit{B} in the Add dialog box and click \textit{OK}.

9. Click \textit{OK} in the Default Selections dialog box.

\textbf{Step 4: Create the Report Data Query.} The Report Data Query specifies how eHealth gathers the data used for the input prompts and how that data is used to query the eHealth database when the report runs.

To create a report data query

1. On the Explorer Bar, click the \textbf{Query Explorer} button, and then click \textit{Queries}

2. In the Insertable Objects area, on the Toolbox tab, double-click \textit{Query}. A new \textit{Query1} icon appears in the right pane.

3. Double-click the \textit{Query1} icon, and in the Properties area, scroll down to \textbf{Name}, and change “Query1” to “Report Data.”

4. In the Insertable Objects area, on the Model tab, expand the General Dimensions folder → the Date/Time folder → Date Time, and then select the \textit{Date and Time} object (shown in the following figure) and drag it into the Dimensions column in the right pane.

5. Expand the Measurements folder → LAN/WAN → Prompted LAN/WAN Measurements, and then scroll to locate the \textit{Bytes/sec} object and drag it into the Facts column.

6. In the right pane, in the Tabular Data area, double-click the Tabular Model icon.

7. In the Insertable Objects area, click the Toolbox tab and double-click Filter. The Tabular Model Filter dialog box appears.
8. In the Expression Definition field, enter the following, and then click **OK**.

\[
\begin{align*}
([\text{General Dimensions}].[\text{Date Time}].[\text{Date and Time}] & \geq \text{nh_report_period_to_date} \\
(\text{?Select Report Period?},'begin',\text{?Report Period Begin?},\text{?Report Period End?})) \ \text{AND} \\
([\text{General Dimensions}].[\text{Date Time}].[\text{Date and Time}] & \leq \text{nh_report_period_to_date} \\
(\text{?Select Report Period?},'end',\text{?Report Period Begin?},\text{?Report Period End?}))
\end{align*}
\]

9. In the Insertable Objects area, Toolbox tab, double-click **Filter**. The Tabular Model Filter dialog box appears.

10. In the Expression Definition field, enter the following, and then click **OK**.

\[
[\text{General Dimensions}].[\text{Element}].[\text{Element UID}] \ \text{IN} \ \text{?Element UIDs?}
\]

Your report data query appears as follows.

![Report Data Query](image)

**Step 5: Populate the Chart.** Populating the chart is the process for specifying and defining the output report, or the pages that the user sees after running the report. In this step, you will define the content of the line chart report, specify a limit for the number of elements that appear in the report, and create a report page header to provide some context and titles for the report.

**To populate the chart**

1. On the Explorer Bar, click the **Page Explorer** button and click **Page1** under Report Pages.
2. Click the body of the chart, and in the Properties area, click the arrow next to Chart Body.
3. Click **Line Chart** to select the entire chart.
4. In the Properties area, under Data, enter **Report Data** in the Query field.
5. Under General, double-click the **Chart Type** field, and in the Convert Chart dialog box, select **Line**; then click **OK**.
6. Click **OK** in the Report Studio message box that appears.
7. Under General, enter **800** in the Resolution Width field, and **500** in the Resolution Height field.
8. In the Insertable Objects area, click the **Query Items** tab.
9. Under the Report Data query icon, drag the following items to the chart as follows:
   - **Bytes/sec** to the Measures field
   - **Date and Time** to the Categories field
   - **Element Name** to the Series field
To limit the number of elements in the output to 10

1. On the Explorer Bar, click the **Page Explorer** button and click **Prompt Page1** under Prompt Pages. The prompt page that you created earlier appears in the right pane.

2. At the bottom of the page, double-click the **HTML Item** icon on the right.

   ![HTML Item Icon](image)

   The HTML editor window appears.

3. In this window, scroll all the way to the right, and locate the following string:

   ```javascript
   nhInitHandlers("default")
   ```

4. In this string, replace “default” with “numElemCheck” then click **OK**.

5. In the prompt page area, click the **Select & Search Prompt** area to the right of the **Elements** text item.

6. In the Properties area, scroll to the Misc area and enter **ID_nhrc** in the ID field.

7. Optionally, save the report so that you do not lose any changes.

To create a report header

1. On the Explorer Bar, click the **Page Explorer** button, and then click **Page1** under Report Pages.

2. In the Insertable Objects area, click the **Toolbox** tab.

3. Drag the **Title/Subtitle/Date/Time Header** object into the header area of the report. The standard header fields appear in the report.

4. Double-click the text item tag associated with the title field, and enter the title that you want to appear when the report runs.
**Step 6: Save and Run the Report.** After you enter the information for the report, you must save the report to a location on the eHealth system. You can save it to the “My Folders” area, or to the “Public Folders” area where other report consumers, with appropriate permissions, can run it. After you create your report, run the report to test it. Confirm that the prompt pages are correct, and that the output contains the information that you want the report to show.

**To save the report**

1. In Report Studio, click **File → Save As**. The Save As dialog box appears.

2. In the **Save in** list, select **eHealth Reporting** and then drill down to the location where you want to store the report. eHealth provides a “User Defined” folder in the Public Folders area, or you can save the report to the My Folders area.

3. In the **Name** field, specify a unique name for your report; then click **Save**.

4. To run the report, on the toolbar, click **Run**, and select the format for your output.

When the report runs, the sample prompt page that you created appears.

5. Supply entries for each prompt, based on the eHealth information that you want to report on, and click **Finish**.
For more information about how to configure and use Report Center and its applications:

- See the Introduction to eHealth Report Center topic and the eHealth Report Center Installation and Administration Guide
- See the Report Center online tutorials
- Register for a training course offered by CA Educational Services