Cisco Unified Intelligence Center Report Customization Guide, Release 12.0(1)

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Preface

Change History

Change	See	Date
Existing note is updated with the introduction of Edge Chromium (Microsoft Edge) browser.	Streaming Data Source	December 2020
Initial Release of Document for Release 12.0		January 2019
Changed topics under chapter Report Definition	Report Definition	
Changed topics under chapter Value Lists and Collections	Value Lists and Collections	
Changed topics under chapter Configure	Configure	
Renamed the chapter Security to Configure	Configure	
Moved Data Sources topics inside the chapter Configure	Configure	

Audience

This guide is intended for users who use Unified Intelligence Center to configure report definitions, data sources, value lists, user permissions, and more.

Related Documents

- Cisco Unified Intelligence Center Guides at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-intelligence-center/tsd-products-support-series-home.html
- Cisco Unified Intelligence Center Developers' Forum at https://developer.cisco.com/site/reporting/overview/

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CHAPTER 1

Introduction to Cisco Unified Intelligence Center

Overview

Cisco Unified Intelligence Center is a reporting platform for users of Cisco Contact Center products. It is a web-based application that provides Historical, Real-time, and Live Data reporting and dashboards.

Unified Intelligence Center serves the following primary purposes:

- Obtains data from the base solution's database. The base solution can be any of the Contact Center products.
- Allows you to create custom queries to obtain specific data.
- Customizes the visual presentation of the reports.
- Customizes the report data.
- Allows different groups of people to view specific data based on their roles.

Unified Intelligence Center users can use the new interface to perform the following tasks:

- Create and view Reports.
- Schedule reports to run at selected intervals.
- Import and export reports and report folders.

Customer Journey Analyzer

Unified Intelligence Center users can use the reporting platform to launch Customer Journey Analyzer using **Analyzer** from the left navigation pane.

You can customize the default Analyzer URL using the CLI **set cuic analyzer url <urlname>**.

For more information on the CLI, see *Cisco Unified Intelligence Center Administration Guide* at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-intelligence-center/products-maintenance-guides-list.html.

The Customer Journey Analyzer mines historical data from multiple data sources and systems to generate specific business views of data. The Analyzer visually displays trends to help you identify patterns and gain insight for continuous improvement.

Note You must have completed the on boarding process for Cloud Connect to access Customer Journey Analyzer. Cloud Connect allows Cisco Contact Center on premises customers to connect to cloud services, such as Customer Journey Analyzer to use Business Metrics.

Get Help on Cisco Unified Intelligence Center

- Click the **Help** icon on the top right corner of each of the entity listing page to view help contents specific to that entity.
- Click the **Online Help** button on the home page to access the help window for Cisco Unified Intelligence Center.

CHAPTER 2

Report Customization in Unified Intelligence Center

This chapter describes the different aspects of developing and customizing a report in Unified Intelligence Center.

Before You Begin

Ensure that you have adequate permissions to create or modify the Reports, Report Definitions, Value Lists, and Collections.

Understand how permissions are set for folders, sub-folders, and imported components. You can do either of the following:

- Contact the administrator.
- If you have access to the **Configure** feature, see *Configure* chapter.

If you are creating or designing reports for any particular solution, be aware of the specific guidelines for accessing data from the solution. See the respective solution's reporting guide for detailed information.

For Mac users, set the following:

Table 2: Mac Settings

Issue	Setting
Keyboard Accessibility in Firefox	Navigate to System Preferences > Keyboard > Shortcuts > Full keyboard Access > enable the All controls option.
Report Views > Column alignment	Navigate to System Preferences > General > Show Scroll bars > select the When Scrolling option.

Related Topics

Configure, on page 31

What Can You Customize

You can customize the following components of the Unified Intelligence Center report. Each section describes the level of customization available for each of the components of a report.

Report Definition

Customizing the Report Definition affects the kind of data present in the report.

You can configure the query used to fetch data from the data source. The fields are then created on the basis of the query. Each field can be configured to hold a particular type of data. You can also format the field based on the data type in the field. Multiple reports can use a single Report Definition.

Drilldowns

Drilldowns allow you to create links from one report (grid) to another report (grid or chart) so that you can launch a sub-report from within the current browser window. You cannot use this feature for a gauge report. You can create the drilldown link for any field in a report that is not a grouped field.

Note Drilldowns will work only for target reports of type SQL query.

Report widgets in Dashboards does not support the drilldown report feature.

The advantage of drilldowns is that you do not have to configure a query to fetch and format certain data if it is already available in another report. You can create any number of drilldowns for a particular Report Definition.

Value List

Value Lists are based on database queries and contain all reportable items of the same type.

Collection

Collections are subsets of Value Lists that can be created to control the amount of data shown to specific users and user groups.

View

A view is a data presentation. A report can have multiple views using same or different fields. For more information on Report Views, see *Cisco Unified Intelligence Center User Guide* at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-intelligence-center/products-user-guide-list.html.

Multiple Report Views on Gadget

To configure multiple report views on the Cisco Finesse Desktop gadget toolbar, see *Cisco Finesse Administration Guide* at https://www.cisco.com/c/en/us/support/customer-collaboration/finesse/products-user-guide-list.html.

Note For Historical Gadgets, only one view is supported.

CHAPTER 3

Report Definitions

Overview

A Report Definition defines the interface for a report. Each report has a Report Definition (database query), which represents how data is retrieved from the data source for that report template. The supported database query types are:

- MS SQL query
- Stored Procedure query
- Anonymous Block query
- Real Time Streaming query

In addition to specifying how data is retrieved, a Report Definition contains the data set that is obtained. This includes the fields, filters, formulas, refresh rate, and key criteria field for the report.

Unified Intelligence Center separates Reports from Report Definitions. You need Premium license to view, create, and edit Report Definitions.

Note

- Unified Intelligence Center installs a stock Report Definition for each report template.
- You cannot rename a Stock Report Definition.

Report Definition Actions

Note You can open a maximum of ten tabs at a time.

<table>
<tr><th>Action</th><th>Description</th></tr>
<tr><td colspan="2">View and Edit</td></tr>
<tr><td colspan="2">View—To view Report Definition details and its associated reports, click a Report Definition. The Overview page appears.

Note All the associated reports (with or without View and Edit permissions) are displayed on the Overview page. Display of all associated reports help in assessing the Report Definition usage across the reports.

Edit—To edit a Report Definition, click Edit on the Overview page. Modifications are applicable to all the associated reports.

In the edit mode, click the icon next to the Report Definition name to edit the Report Definition properties; Name, Description, and Report Definition Type.

Note You cannot edit a Stock Report Definition.

Caution Ensure to save changes while editing data in the Fields and the Parameters tabs. Without saving the modified data, if you edit the query in the Datasource and Query tab and click Next, then the data that is edited is lost.</td></tr>
<tr><td colspan="2">Toolbar Actions</td></tr>
<tr><td>New > Report Definition</td><td>Creates a new Report Definition.

Note The New action is enabled only if you have View and Edit permission for that Report Definition.

For more information, see Create Report Definition.</td></tr>
<tr><td>New > Folder</td><td>Creates a new Folder. Use this feature to categorize Report Definitions.

Note
• The New action is enabled only if you have View and Edit permission for that folder.
• When you move or save the folders to a different location, the drop-down lists all the folders. You can only navigate into the folders to which you have the Edit permission.</td></tr>
<tr><td>Refresh</td><td>Refreshes the Report Definitions page.</td></tr>
<tr><td>Favorites</td><td>Tags the Report Definitions as your Favorites. Click the star icon beside the Report Definition name to add to Favorites.</td></tr>
<tr><td>Search</td><td>Searches for a Report Definition.</td></tr>
<tr><td colspan="2">Ellipsis (…) Actions</td></tr>
<tr><td>Save As</td><td>Saves a copy of the Report Definition.</td></tr>
</table>

Action	Description
Rename	Renames a Report Definition or a Folder. **Note** Unified Intelligence Center installs a stock Report Definition for each report template. You cannot rename a Stock Report Definition.
Permissions	Assigns appropriate permissions to access and manage the Report Definition. **Groups**—Grants **View** and **Edit** permissions for the Report Definition. • Security Administrators can grant these permissions to various groups. • Entity owners can grant these permissions to groups that they are directly associated with. **Users**—Grants **View** and **Edit** permissions for the Report Definition to various users. Applicable only to Security Administrators. **Note** • Higher permissions (View and Edit) from either an individual user or the user group takes precedence. • Only the first 200 records (alphabetical order) are displayed in the **Members** or **Groups** panel. To view more records, see **Configure** > **Groups**. • When you modify a permission and want to switch between **Groups** and **Users** tabs, you will be prompted to either save or discard the changes.
Move	Moves Report Definition or Folder from one folder to another. **Note** You can move a Report Definition or a Folder only if you have **Edit** permission on the parent folder of the Report Definition or Folder being moved.

Action	Description

Delete	Deletes a Report Definition or a Folder. To delete a Report Definition or a Folder, the following conditions are applicable:
	• You must have **Edit** permission on the parent folder of the Report Definition or folder being deleted.
	• Reports must not be associated with the Report Definition or the folder.
	• Required roles and permissions for Stock Report Definitions or Folders:
	  • User Roles—System Configuration Administrator, Report Definition Designer
	  • Permissions—**Edit** permissions to that specific Report Definition or folder and the immediate parent folder.
	• Required roles and permissions for Custom Report Definitions or Folders:
	  • User Roles—Report Definition Designer
	  • Permissions—**Edit** permissions to that specific Report Definition or folder and the immediate parent folder.

Related Topics

Create Report Definition, on page 10

Create Report Definition

Report Definitions are based on the following query types:

- SQL Query—A simple database query used widely in most of the Report Definitions.
- Anonymous Block—A block of queries that are written to pull specific data.
- Stored Procedure—Predefined procedure written to get specific data.
- Real Time Streaming—A special query used to get data from streaming data source that push data in real time.

To create a new Report Definition, perform the following steps:

Procedure

Step 1 In the left navigation pane, choose **Report Definitions**.

Step 2 Navigate to the folder where you want to create the Report Definition.

Step 3 From the Report Definition toolbar, click **New** > **Report Definition**.

Step 4 In the **Create New Report Definition** window, enter the Report Definition **Name** and **Description**.

Step 5 Select the required **Report Definition Type**:

- SQL Query
- Anonymous Block
- Stored Procedure
- Real Time Streaming

Step 6 Click **Next**.

Step 7 In the **Data Source and Query** tab, select the appropriate **Data Source** and enter the **Query**.

Note Ensure to select an **Online** data source.

For more information, see *Datasource and Query Tab*.

Step 8 Click **Next** to validate the query and retrieve Parameters or Fields depending on the selected Report Definition Type.
The validated query retrieves:

- Parameters for Stored Procedure and Anonymous Block query only.
- Fields for SQL and Real Time Streaming query only.

Step 9 In the **Parameters** tab, you can edit and reorder the parameters (if necessary) that are generated from a Stored Procedure or an Anonymous Block. For more information, see *Parameters Tab*.

Step 10 Click **Next** to validate the parameters and create Fields.

Step 11 In the **Fields** tab, you can:

- Manage the retrieved fields.
- Create formula and filter fields.
- Edit the field properties and the field formatting.

For more information, see *Fields Tab*.

Step 12 Click **Next**.

Step 13 In the **Properties** tab, set additional properties for the Report template. For more information, see *Properties Tab*.

Step 14 Click **Save**.
The created Report Definition appears in the Report Definition **Overview** page. This page lists the associated reports (if any).

Related Topics

Datasource and Query Tab, on page 12
Fields Tab, on page 17
Parameters Tab, on page 13
Properties Tab, on page 24

Datasource and Query Tab

Report Definition Type	Action
SQL Query	Choose the appropriate data source and provide a valid database query for the Report Definition. **Note** • Select an **Online** data source. • Maximum length that is supported for the database query type is 25000 characters (including whitespace). Click **Next** to view the fields derived from the query in the **Fields** tab.
Anonymous Block	Choose the appropriate data source and enter the database query incorporating a parameter. **Note** • Maximum length that is supported for the Anonymous Block query type is 25000 characters (including whitespace). • Parameter names in the anonymous block must have a colon followed by the parameter name. Example: `:paramName`. Unified Intelligence Center substitutes the colon at the beginning of the parameter name with the at sign (@). Click **Next** to display the list of parameters in the **Parameters** tab.
Stored Procedure	Choose the appropriate data source and enter the name of the stored procedure. Ensure that the stored procedure location is accessible by Unified Intelligence Center. Click **Next** to display the list of parameters in the **Parameters** tab.

Report Definition Type	Action
Real Time Streaming	Choose the Streaming data source and the topic to display the associated list of fields. Check the required fields. **Note** You can choose only one topic per Report Definition. **Key Routing Field** Represented by the key icon, this field is checked and disabled. Composite key fields are associated to this field depending on the field selection from the nested objects in the topic. **Note** • When you check a field, the composite field is also checked. • When you uncheck a field, the associated composite field remains checked. • When you uncheck the composite field, all its member fields are unchecked. Parent field – *state* Click **Next** to view the selected fields in the **Fields** tab. **Note** Attach a value list to the **Key Routing Field** before you save the field properties.

Note By default, the queries that are sent to SQL server are executed with the following properties:

- ANSI_NULLS: ON
- QUOTED_IDENTIFER: ON
- ROWCOUNT: 0

To change any of these values, set the appropriate values in the custom SQL query.

Related Topics

Parameters Tab, on page 13
Fields Tab, on page 17

Parameters Tab

Use the **Parameters** tab to edit and reorder the parameters that are generated from a Stored Procedure or an Anonymous Block. Parameters are used as filters when you run the report.

The generated list of Parameters are associated with the following attributes;

Attributes	Description
Name	The Parameter name.

Attributes	Description
Reorder icon	Drag and drop the reorder icon to the required row position. This order reflects the parameters displayed in the report filter page. **Note** The reorder icon is visible only on the first row of the parameter list. For the subsequent rows, the reorder icon is visible when you hover over the parameter row.
Display Name	Appears in the report filter. **Format:** Display Name (Field Name) **Example:** Agent_Login_Start_Date (@param1) Click the pencil icon to edit the Display Name. **Note** • Supports only alphanumeric characters. • The pencil icon is visible only on the first row of the parameter list. For the subsequent rows, the pencil icon is visible when you hover over the Display Name.
Data Type	The associated Data Type. For the Anonymous Block query type, select a different Data Type from the list, if necessary.
Sample Value	The associated sample value pre-populated for each datatype. If necessary, modify the sample value.
Value List	The associated value list. Once the parameter is associated with a value list, Unified Intelligence Center displays the value lists on the Filters wizard provided that user has **View** permission for the value lists. Use this column to: • Associate a value list (Click the plus icon.). For more information, see *Associate Value List*. • Edit the associated value list (Click on the value list name.). • Delete a value list (Click the minus icon that appears when you hover on the value list name.).
Actions	Allows you to edit or delete the parameter. **Edit**—Edits the Parameter properties. The fields on the **Edit Parameter** window vary based on the data type. For more information, see *Edit Paramter Properties*.

Related Topics

Associate Value List, on page 15
Edit Parameter Properties, on page 15

Associate Value List

You can associate a Value List with a field (if the Report Definition is based on SQL query) and a parameter (if the Report Definition is based on an Anonymous Block or a Stored Procedure).

Once you have associated a value list to a field or a parameter, Unified Intelligence Center displays the value lists on the filters wizard provided that user has **View** permission for the Value Lists.

To associate a value list:

Procedure

Step 1 From the **Parameters** or **Fields** tab, click the plus icon in the **Value List** column.

Step 2 In the **Attach Value List** window, select or type the appropriate values for the following fields:

Field	Description
Value List	This list is populated based on the logged in user's permissions. **Note** • Only fields of type string and decimal can be associated with a value list. • In stock report templates, this field is populated with the stock value list for the Report Definition.
Value Delimiter	Type the delimter (character) to be placed between each value when a value list is passed to the stored procedure or anonymous block.
Allow only Single Value selection in filters	Limits the parameter value selection to only one value in the Value list selection filter. That is, for a report definition, when you enable this check box for a parameter, the user can select only one value for that parameter in the Value list selection box. **Note** This check box is enabled only after selecting a value in the **Value List** list.
Quote Values	Surrounds the parameter with two additional single quotation marks when the value is passed to the stored procedure or anonymous block. The first single quotation mark is used to escape the second single quotation mark.

Step 3 Click **Done**.

Edit Parameter Properties

Parameter Property	Description
Description	Description of the parameter.

Parameter Property	Description
Hard-coded value	Hard-coded value to be passed as a parameter value when running a report based on an Anonymous Block or Stored Procedure report definition. To pass null as a hard-coded value, leave this field blank and check the **Pass NULL value for empty string** check box. Entering a hard-coded value hides this parameter in the filter page.
Format Field	Choose a date, time, or date and time format from the list.
Required	Check to indicate that this parameter is required.
Pass NULL value for empty string	This check box is enabled only when the parameter is not required or has no value. When the parameter is populated, this field is disabled and the value is passed.
Automatic Parameter	Choose from the following values for STRING type fields in a Stored Procedure Report Definition type: • Current User Name • Current User Timezone
Relative Date Range	Specify the date range using the **Start Date** and **End Date** fields. For more information, see *Relative Date and Days Filtering for Anonymous Blocks and Stored Procedures* section.

Relative Date and Days Filtering for Anonymous Blocks and Stored Procedures

For reports based on Anonymous Blocks and Stored Procedures, the following illustration helps to understand how to populate the relative dates in the report filters.

- **Dates—**
  - Select **Start Date** and enter a **Display Name**. Select **End Date** and enter the identical **Display Name**.

    For example, **`Agent_Login_Start_Date`** and **`Agent_Login_End_Date`** with the same display name **`Agent_Login_Date`**.

    Note To indicate a relation between different parameters, the display name of the parameter must be same.

  - The dates appearing with the same display name are grouped and shown as a Relative Date Range. A single Stored Procedure or Anonymous Block can have as many such pairs as required.

> **Note** Do not enter the same display name for more than one pair of parameters. Unified Intelligence Center displays only the first two parameters together in one pair. The third and fourth parameters are not displayed in a pair. For example,
>
> - Specify **`Agent_Login_Date`** as the display name to Agent_Login_Start_Date and Agent_Login_End_Date.
> - Specify **`Agent_Login_Date`** as the display name to Log_Out_Interval_Start_Date and Log_Out_Interval_End_Date (instead of Last_Login_Date).
>
>   Note that the Unified Intelligence Center does not display the parameters Log_Out_Interval_Start_Date and Log_Out_Interval_End_Date in a pair.

- **Days**—Use the Days parameter to specify an optional day of the week parameter. The Days parameter is not mandatory. This parameter must be:
  1. String type
  2. Prefixed with the same display name as other parameters in the same date range.
  3. Appended with _Days

  For example, for the Days parameter, you can define the display name as Agent_Login_Date_Days, which is appended with _Days and with the same display name Agent_Login_Date as defined for the two parameters Agent_Login_Start_Date and Agent_Login_End_Date.

Fields Tab

Use the **Fields** tab to manage the following fields generated from a Stored Procedure, Anonymous Block, or SQL Query:

- Query Fields—represent a field in a database table. You cannot create or delete a Query field.
- Formula Fields—represent custom fields that compute and return a value.
- Filter Fields—represent custom fields that appear on the **Advanced Reporting Options** tab on the **Filter** page.

Field Actions

Action	Description
Toolbar Actions	
Search	Searches for a field.

Action	Description
All	Lists all fields. The **Field Type** column displays the associated data type and the corresponding field types. These field types are represented in the form of icons: • Key Criteria Field or Key Routing Field • Composite Field • Historical Key Field • Filter Field • Formula Field • Drilldown Linked
Filter	Lists all filter fields.
Formulae	Lists all formula fields.
Drilldowns	Lists all fields with linked drilldowns.
New	• **Filter Field**—Creates a filter field that is based on the selected Data Type. Use filters while running reports to get specific data. Filter fields are indicated with Filter icon in the **Fields** tab > **Field Type** column. For more information, see *Field Properties*. • **Formula Field**—Creates a computed field that appears in the list of fields. Formula fields are indicated with Formula icon in the **Fields** tab > **Field Type** column. For more information, see *Field Properties* and *Formula Creation Guidelines*.
Note For each field, you can: • Attach or delete value lists for a field (if the Report Definition is based on a query). For more information, see *Associate Value List*. • Edit the formatting for the Query fields and Formula fields. For more information, see *Field Properties*.	
Ellipsis (…) Actions	
Edit	Edits the field details. The editable properties vary for a Query, Filter, or a Formula field. For more information, see *Field Properties*.

Action	Description
Drilldowns	Manages drilldowns. Drilldowns allow you to create links from one report (grid) to another report (grid or chart) so that you can launch a sub-report from within the current browser window. **Note** • You cannot drill down from or to a gauge report. • You cannot drill down to a report based on an Anonymous Block or a Stored Procedure query type. • You cannot drill down from or to a report based on the Real Time Streaming query type. For more information on create, edit, or delete drilldowns, see *Manage Drillldowns*.
Delete	Deletes a field.

Related Topics

Field Properties, on page 19
Formula Creation Guidelines, on page 22
Associate Value List, on page 15
Manage Drilldowns, on page 23

Field Properties

The following table lists each field property and its definition. Field properties vary based on the Field Type.

Field Property	Field Type	Definition
Name	All	The default database name.
Display Name	All	Appears as the column header for the field on the **Filter** page when generating a report. Click the pencil icon to edit the Display Name. **Note** • Supports only alphanumeric characters. • The pencil icon is visible only on the first row of the parameter list. • For the subsequent rows, the pencil icon is visible when you hover over the Display Name.
Description	All	Enter the field description.
Data Type	Formula	Choose the data type for the field from the list. Available Data Types are: DECIMAL, STRING, NUMBER, DATE, DATETIME, and BOOLEAN. This setting determines the options that are displayed for this field on the **Fields** tab.

Field Property	Field Type	Definition
Data Clause	Query and Filter fields only	Identifies which column in the data set is bound to this field. The SQL Parser uses this value when retrieving data from the database. **Note** For Filter fields, specify the data clause. For Query fields, this value is auto populated from the query. Data clause is limited to a maximum of 1000 characters (including whitespace).
Value List	Query and Filter fields only	Click the plus icon in the **Value List** column. In the **Attach Value List** window, select or type the appropriate values for the following fields. For more information, see *Associate Value Lists*. When a field is associated with a Value List, report users can filter the report with one or more fields from that Value List or its Collections. **Note** Only fields of type String and Decimal can be associated with a Value List.
Format | Footer	Query and Formula fields only	Click the pencil icon to edit the formatting for the field and the footer. • **Format**—Provides a list of default formatting masks. The available formats depend on the data type. For example, for **Numeric** values, you can select all possible display formats. For **Custom** selection, you can enter the format in the **Custom Format** text box. • **Footer**—The formula to use in the footer. Options are None, Average, Sum, Count, Minimum, and Custom Formula. The available options depend on the data type. **Note** For footer formulae, ensure to apply aggregate functions to the columns. For example: SUM(${Field1})/(SUM(${Field2})+SUM(${Field3})) For the **Custom** footer, the following fields appear: • **Default Custom Footer Formula**—Enter the footer formula to be applied when columns are grouped. This column does not have a custom footer formula defined for that level. • **Group 1 Custom Footer Formula**—Enter the footer formula to be applied if this column is in the first level of grouping. • **Group 2 Custom Footer Formula**—Enter the footer formula to be applied if this column is in the second level of grouping. • **Group 3 Custom Footer Formula**—Enter the footer formula to be applied if this column is in the third level of grouping.

Field Property	Field Type	Definition
Allow to show if invisible	Query and Formula fields only	Uncheck this check box to hide from the **Available** fields panel. Check for the field to appear (retain) on the list of **Available** fields in the Grid Editor.
Available in Filter	All	Check to add the field to the **Field Filters** tab while choosing filters.
Select from Available Fields	Formula	Select a field from the list and click the arrow button to insert it into the **Formula Syntax** field. **Note** Fields on this list appear by Name and not by Display Name.
Formula Syntax	Formula	Displays operators that construct a formula for the fields you have selected. For more information, see *Formula Creation Guidelines*.

For reports that use dynamic headers (headers whose content includes dynamic content), provide the SQL field name as part of the header name in the **Report Definition** > **Fields** tab. The column name is surrounded by curly braces so that users can easily find dynamic content within the header.

Click **Done** to save the selections for that field only.

Related Topics

Associate Value List, on page 15
Formula Creation Guidelines, on page 22
Default Formatting, on page 21

Default Formatting

The available formats depend on the data type of the field as set in **Create Filter Field** dialog box. For example, for numeric values the drop-down menu offers possible display formats for numeric values. Selecting (Custom) from this list applies the format string supplied in the Custom Format String to the value returned. The custom formats supported are as follows:

Note A change to a Report Definition affects all reports that use it.

1. **String data type**: Adds a string before the string value. For example, if there is a String field called *name* where it lists the name of the doctors and if you want to append *Dr.* to the doctors' names in the report, then use **custom format** for this field and enter the value *Dr.* The resulting report displays all names as *Dr. XXXX*.

2. **Decimal data type**: Unified Intelligence Center supports decimal data formatting in accordance with the Java decimal formatting rules.

   The following table lists a few examples of custom formats. The # symbol indicates a digit or nothing if there is no digit present. The digit shows a digit or 0 if there is no digit present:

Data	Format	Value
123	123456	000123

123456.789	###,###.###	123,456.789
123456.789	###.##	123456.79
123.78	123456.789	000123.780
12345.67	$###,###.###	$12,345.67
12345.67	$1234.56	$12345.67
123	0.0E+0	1.2E2
123	0.0E+00	1.2E02
123	Rs 1234	Rs 123a
1234567.89	1.234,89	1.234.567,89
123456789	1.234.567	123.456.789

Formula Creation Guidelines

A formula is an expression that uses operators to perform calculations on the database fields. When created, the formula appears as a column in the report. Use these basic arithmetic operators to create formulas: + for addition, - for subtraction, * for multiplication, / for division, and () for grouping operands. Each value in a formula represents a single field within a formula.

Data Types with syntax examples:

- **Boolean**—!${bool1} (Appears as TRUE or FALSE in the user interface. The opposite value appears when negation operand is used.)
- **Date**—${date1} + 24*60*60*1000 (Increments date1 by one day.)
- **DateTime**—DateDiff(${dateTime1},${dateTime2}) (Computes and formats the difference in milliseconds of dateTime1 and dateTime2.)
- **Decimal**
    - ${num1} + ${num2} (Adds the two number fields.)
    - ${num1} - ${num2} (Subtracts the two number fields.)
    - ${num1} / ${num2} * ${num3} (Computes as per the operator's associativity as (${num1}/ ${num2}) * ${num3})
    - (${num1}) / (${num2}) / (${num3} * ${num4}) - ${num1})
- **String**
    - ${str1} + ${str2} (Concatenates the strings. You cannot subtract, multiply, or divide the strings.)
    - "" + ${LINK_NAME_FIELD} + "" (Concatenates field values with string constants to create HTML elements.)
    - ${str1} + ${num1) (Concatenates the str1 and num1 field values.)

Note Null values are considered as empty.

Manage Drilldowns

You can create, edit, or delete drilldowns from the **Drilldowns** dialog box.

Note To edit or delete a drilldown, from the list page, click the ellipsis button next to the drilldown and click **Edit** or **Delete** respectively. After performing the edit or delete actions, ensure to save the Report Definition to reflect the changes that are made to the drilldown.

To create drilldowns, perform the following steps:

Procedure

Step 1 Click **Create**.

Step 2 Enter the drilldown name and select the report to link to the drilldown.

Step 3 Click **Add Match Field** to select the Target Report field and the corresponding (matching) Source Report field. This action filters the target report that is based on the column value for the matched Source Report field.

Note For date and time type fields, selecting the **Match Date Range** option filters the target report that is based on the date range for a historical field of the source report. Available only if the source report is a historical report.

Step 4 Click the **Save** icon. You can edit or delete fields using the respective icons.

Step 5 Click **Add Match Field** to add more fields and click **Next**.

Note The **Add Match Field** link is enabled only after saving the selected fields.

Step 6 Set the filter criteria and click **Done**.
The created drilldown is listed on the **Drilldowns** page for that report.

Note

- When you create a drilldown, by default, the target report's filter criteria is populated in the drilldown filter screens. During the create process, if you delete a **Match Field** or a **Match Date Range** for the target report’s field, then the drilldown filter screens are reset to the default for that field.

- When you edit a drilldown, the target report's current drilldown filter criteria is populated in the drilldown filter screens. During the edit process, if you delete a **Match Field** or a **Match Date Range** for the target report’s field, then the drilldown filter screens are reset to reflect the current drilldown filter criteria for that field.

For more information on setting the filter criteria, see *Report Filters* section in the *Cisco Unified Intelligence Center User Guide* at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-intelligence-center/products-user-guide-list.html.

Properties Tab

Click the **Properties** tab to set extra properties for the Report template.

Note For Real Time (Live Data) Reports, only the **Author** and **Version** fields are available.

Table 3: Properties Tab Actions

Action	Description
Author	Template provider name who created the entity.
Version	Report definition entity version that is currently deployed in Unified Intelligence Center. **Format:** x.y (where, x and y are integers). Do not start or end with a decimal point. Examples: 8.9 or 11.15
Key Criteria Field	Choose to filter the reports based on simple queries. **Note** This field is not enabled for reports based on Anonymous Blocks or Stored Procedures. You can run a report based on a simple query if the Report Definition does not have a **Key Criteria Field** defined. However, as the report runs with the default filter, the data fetched can be large.
Real Time or Historical	Choose the report type.
Historical Key Field	Choose for the date and time intervals for the report. **Note** This field is enabled only for the Historical report type. Although Historical reports can run if this field is left blank, the report returns all data for all dates and the data fetched. Only fields of the DATE and DATETIME format are available in this list.
Refresh Rate	Rate at which the report is automatically refreshed (in seconds). The minimum Refresh Rate is 15 seconds for Real Time reports and 900 seconds for Historical reports. You cannot enter values less than the defaults. **Note** For new report definitions of type historical, the default Refresh Rate is 3600 seconds. For type real time, the default Refresh Rate is 900 seconds.

CHAPTER 4

Value Lists and Collections

Overview

Unified Intelligence Center uses Value Lists and Collections as filtering tools to collect and control the data that is available for display in reports.

- *Value lists* are based on database queries and contain reportable items of the same type. For example, all agents or all skill groups.
- *Collections* are subsets of Value Lists, created to control the amount of data that is displayed to specific users and user groups. For example, you can create a collection of skill groups that displays only the skill groups in a region or line of business. No *stock* collections are installed with Unified Intelligence Center. Users with permissions to do so can create *custom* collections.

Note Value Lists and Collections using collection queries are refreshed every midnight (using the server time zone). The refresh operation is performed on the primary node in a cluster and propagated to other nodes.

When you run reports, Value Lists and Collections are displayed to filter reports. The ability to filter by Value Lists or by Collections is determined by Group or User permissions.

Value List Actions

Action	Description
Toolbar Actions	
Search	Searches for a Value List.

Action	Description
All	Lists all the Value Lists (Stock and Custom).
Stock	Lists all stock Value Lists.
Custom	Lists all the custom Value Lists.
Refresh	Refreshes the **Value Lists** page.
New	Creates a new Value List. For more information, see *Create Value Lists*.
Ellipsis (…) Actions	
Edit	Edits a Value List. You can also click on the Value List Name to edit the Value List details. In the edit mode, click the icon next to the Value List name to edit the Value List properties; Name and Description.
Values	Displays the list of values generated from the Value List Query.
Collections	Displays the list of values within the collection, if collections are defined.
Permissions	Assigns appropriate permissions to access and manage the Value List. **Groups**—Grants **View** and **Edit** permissions for the Value List. • Security Administrators can grant these permissions to various groups. • Entity owners can grant these permissions to groups that they are directly associated with. **Users**—Grants **View** and **Edit** permissions for the Value List to various users. Applicable only to Security Administrators. **Note** • Higher permissions (View and Edit) from either an individual user or the user group takes precedence. • Only the first 200 records (alphabetical order) are displayed in the **Members** or **Groups** panel. To view more records, see **Configure** > **Groups**. • When you modify a permission and want to switch between **Groups** and **Users** tabs, you will be prompted to either save or discard the changes.
Delete	Deletes a Value List. Only users with a Value List Collection Designer role can delete a Value List. You cannot delete a Value List that is associated with any entities.

Related Topics

Create Value List, on page 27

Create Value List

Value Lists are used to fetch data in addition to the data that is received from the Report Definition query.

To create a Value List, perform the following steps:

Procedure

Step 1 In the left navigation pane, choose **Value Lists**.

Step 2 In the **Value Lists** window, click **New**.

Step 3 In the **Create New Value List** dialog box, enter the **Value List Name** and the **Description**.

Step 4 Click **Next**.

Step 5 In the Value List details page, enter the following:

Field	Description
Version	Enter a version number for the value list.
Data Source	Select the data source from the list.
Value List Query	Enter the database query to fetch the values for the value list. Click **Validate** to validate the query. Maximum query length: 15000. **Note** Order by clause is not supported in a Value List SQL query. Value ID cannot be an empty string or a null value.
Collection Query	Enter a query to fetch the data from the list of values generated by the value list query. This query is required only if you are creating a collection of type Identifier. Maximum query length: 15000. For more information about Collections, see *Create Collections*.

Step 6 Click **Save**.

Related Topics

Create Collections, on page 29

Collection Actions

Action	Description
Toolbar Actions	
Search	Searches for a Collection.

Action	Description
All	Lists all the Collections (System and Manual).
System	Lists all the system Collections.
Manual	Lists all the manual Collections.
Refresh	Refreshes the **Collections** page.
New	Creates a new Collection. For more information, see *Create Collection*.
Ellipsis (…) Actions	
Edit	Edits a Collection. In the edit mode, click the icon next to the Collection name to edit the Collection properties; Name and Description.
Values	Displays the list of values associated to this Collection.
Permissions	Assigns appropriate permissions to access and manage the Collection. **Groups**—Grants **View** and **Edit** permissions for the Collection. • Security Administrators can grant these permissions to various groups. • Entity owners can grant these permissions to groups that they are directly associated with. **Users**—Grants **View** and **Edit** permissions for the Collection to various users. Applicable only to Security Administrators. **Note** • Higher permissions (View and Edit) from either an individual user or the user group takes precedence. • Only the first 200 records (alphabetical order) are displayed in the **Members** or **Groups** panel. To view more records, see **Configure** > **Groups**. • When you modify a permission and want to switch between **Groups** and **Users** tabs, you will be prompted to either save or discard the changes.
Delete	Deletes a Collection. Only users with a Value List Collection Designer role can delete a Collection. You cannot delete a Collection that is associated with any entities.

Related Topics

Create Collections, on page 29

Create Collections

A collection is a subset of the data fetched by a value list. You can create a collection for any existing value list and each value list can have multiple collections. This allows you to customize the value list entries into groups which are more meaningful for your deployment.

Note Modifications to Collections are not automatically updated in schedules, reports, report drilldowns, and dashboards. Hence, if a collection is modified, you must reselect the collection for all the configured schedules, reports, report drilldowns, and dashboards.

To create a Collection, perform the following steps:

Procedure

Step 1 In the left navigation pane, choose **Value Lists**.

Step 2 In the **Value Lists** window, for the Value List to which you want to create Collections, click the corresponding ellipsis action button and select **Collections**.
The Collections list displays the available collections.

Step 3 Click **New** to add a collection.

Step 4 In the **Create New Collection** dialog box, enter the **Name** and the **Description**.

This name appears in the report filter for the reporting user to select the collections.

Step 5 Click **Next**.

Step 6 From the **Collection Type** list, select from the following collection types:

- **Identifier**—Select this Collection Type and enter the identifier to be used in the collection query that was defined in the associated Value List.

  Note When you edit the Value List, the Collection Query field is made editable and hence, you can determine what values are appropriate to enter in the **Identifier** field.

  You can customize the Collection Query with any valid SQL Select statement that returns appropriate IDs.

- **Regular Expression**—Select this Collection Type and enter a Java regular expression to search for data among the values generated by the Value List.

- **Values**—Select this Collection Type and select a subset from the list of values generated by the Value List.

Step 7 Click **Save**.

Note The Value List is updated based on the synch schedule set up in Cisco Unified Intelligence Center Administration - OAMP console (Operation Administration Maintenance and Provisioning).

This setting must be configured prior to using the Identifier type Collection.

System collections are automatic and there is no ability to modify or delete them. System collections exist for Agent and Agent Team.

Config Limits for Value Lists and Collections

Cisco Unified Intelligence Center supports the following Config limits for Value Lists and Collections.

- Maximum number of Value Lists = 50
- Maximum number of Values Per Value List = 72000
- Maximum number of Collections Per Value List = 7200
- Maximum number of Values Per Collection = 5000

CHAPTER 5

Configure

Overview

Unified Intelligence Center security offers multilayered and flexible functionality for a Security Administrator. Based on the requirements of the organization, you can configure users, groups, and provide appropriate permissions to create a flat or tiered access structure for Unified Intelligence Center functions. You can also configure Data Sources if you are a System Configuration Administrator.

You can access Unified Intelligence Center functions based on:

- Log in authentication.
- The license type. For example, a user within an organization that uses a Standard license cannot access Report Definition functions.
- User Role (a user can have one or more of the six User Roles).
- User Groups in which the user is a member.
- For an object, the user can access, the object-level permissions that are assigned by the person who created that object.

User Permissions

About User Permissions

User Roles are associated with people and permissions are associated with entity types. Your User Role provides access to the corresponding entity types.

Entity types in Unified Intelligence Center are:

- Dashboards
- Reports
- Report Definitions
- Data Sources
- Value Lists
- Collections

Permissions are combined and the highest level permission prevails.

A user receives permission for an entity type from different sources. Permissions can be inherited from the AllUsers group or the permission assigned by the Security Administrator. Among all these permissions, the highest level permission is used when the user accesses the entity type.

User Permissions:

- **View**—When the user has View permissions for an entity type, that user can perform certain actions that depend on the entity type.

  For example, with View permission, you can perform the following actions:

  - Run, print, and refresh a report.
  - View, refresh, and run a dashboard.
  - View a Value List query.

  Note Permissions set on categories are not recursive. For all entities under Dashboard, Report, or Report Definition types, you need separate View or Edit permissions.

- **Edit**— When the user has Edit permission for an entity type, that user can modify, rename, or delete the entity type. Edit permission also includes View permission.

  For example, with Edit permission, you can perform the following actions:

  - Save As
  - Import reports
  - Export reports
  - Edit a Data Source
  - Delete a Custom Value List

  Note When setting permission for an entity type, if no permissions are granted, then the user will not have any access privileges to the entity type.

When you create an entity, you are the owner of that entity. By default, you have Edit permission for the entity, and you can set permissions for that entity for users in your Group only. Users without Security Administrator role cannot share entities they own with the All Users group.

Note If the entity is still in progress and you do not want anyone to access it yet, you can make it “private” by leaving all permissions unchecked for both the All Users and the Groups.

For example, if you create a Dashboard for your Group and the dashboard has notes, you might want others in your Group to update the notes.

Even though you are a Dashboard Designer, if the Dashboards page contains dashboards created by (owned by) other Dashboard Designers, you may not be able to see those dashboards, based on your Group permissions and on the entity-level permissions those owners have set for their Dashboards.

Edit Permission Rules

The following rules are applicable for Reports, Report Definitions, Dashboards:

- To delete an entity, you need Edit permissions for the entity and the entity's parent folder.
- To delete a folder, you need Edit permissions for the folder, the folder's parent, and all the folders and/or entities belonging to the folder.
- A user can only Edit or Save an entity even if the immediate parent folder has no Edit permissions.
- A user can only use the Save As feature if the entity has no Edit permissions enabled.
- Any folder owner within the **Imported Report Definitions** can delete a folder if the administrator provides explicit Edit permissions on the **Imported Report Definitions** folder.

Set User Permissions

The User Permissions functionality allows Security Administrators to view and set permissions for user groups and for individual users for the selected entity type. Security Administrators can also set these permissions for each entity using the **Permissions** option (ellipsis actions) from the corresponding entity page.

To set permissions, perform the following steps:

Procedure

Step 1 In the left navigation pane, choose **Configure** > **Permissions**.

- **User Group Permissions**—Click this tab to set permissions to the User Groups.
- **User Permissions**—Click this tab to set permissions to the individual Users.

Note For illustration, the following procedure explains setting permissions to User Groups. To set permissions to individual Users, click the **User Permissions** tab and perform the same steps.

Step 2 Select the **Entity Type**.
The available list of entities gets populated in the **Name** panel.

Step 3 Select the required entity value. The available list of user groups and the corresponding user permissions are listed in the **User Group** panel.

Step 4 Highlight the User Group to which you want to set the permissions.

- Highlighting the User Group row displays the list of associated users in the **Users** panel.
- Selecting the User row displays the list of associated User Groups in the **Groups** panel. You can select multiple users.

Step 5 Click **Set Permissions**.

Step 6 In the **Set Permissions** dialog box, select the appropriate check boxes to grant **View** and **Edit** permissions.

Step 7 Click **Update**.
The updated permissions are reflected in the **User Group** tab.

Note
- By default, the entity owner carries the Edit permission for that entity. No other user can change these settings for that entity.
- The inherited permission settings are disabled.

Users

User Roles

Your User Role allows you to access the application functionality that corresponds to that role.

With appropriate User Role, you can:

- Assign a user to one or more of the six User Roles.
- Assign multiple User Roles to individual users depending on the size, staff, geographical distribution, and security practices of your call center.
- Distribute each user role to many users.

Note Role changes to a user who is currently signed in, must sign out and sign in again for the changes to take effect.

Note The Login User role, earlier identified for all the users who could sign in to Unified Intelligence Center is now integrated within the system. To activate or inactivate a user, you can use the toggle button in the **Edit User** > **User Information** tab.

An active login user can:

- Sign in to Unified Intelligence Center.

- Access **Configure** > **Users** and edit their information. For example, to change their Alias or Last Name.

User Role	Supported Functions
System Configuration Administrator	Manages Data Sources and Scheduler.
Security Administrator	The initial, default Security Administrator is the user who is defined as the System Application User during the installation. Manages Users, User Groups, and User Permissions. Also, System Administrators can: • Assign User Roles—User Roles are associated with people. User Roles are assigned to users to control access to various functions and what objects you can create. • Assign users to User Groups. • Assign Permissions—Permissions are associated with objects (Dashboards, Reports, Report Definitions, Data Sources, Value Lists, and Collections). • Use the **Run As** feature to verify other users' permissions.
Dashboard Designer	Manages Dashboards.
Value List Collection Designer	Manages Value Lists and Collections.
Report Designer	Manages Reports. Can access Scheduler to work on reports with appropriate permissions.
Report Definition Designer	Manages Report Definitions.

Note For users who have been synched into Unified Intelligence Center from Unified CCE or Packaged CCE, you cannot edit the Report Designer and the Dashboard Designer roles.

Set Administrator Credentials

Cisco Unified Intelligence Center has an administrator user who is created at the install time. The new user can be provided with all the roles and permission after executing the command *utils cuic user make-admin <user-name>* successfully.

To provide the new user with the administrator credentials, perform the following steps:

Procedure

Step 1 Log in to the CLI using administrator credentials.

Step 2 On the CLI, run the command *utils cuic user make-admin* <user-name>.

Step 3 The <user-name> here should be the complete user name of the user including the authenticator prefix as listed in the Unified Intelligence Center User List page.

Step 4 If the command executes successfully, it will provide all the roles to this new user and copy all the permissions from the administrator to this user.

Step 5 Restart Intelligence Center Reporting service for the changes to be visible.

- The administrator's group memberships are not copied to this user by this CLI command. They will have to be manually updated. But after running the CLI, since this new user would have become a Security Administrator, he can do that himself.
- For any entity (reports, report definitions etc), if this new user's permissions provide higher privileges than the administrator, they will be left as it is and will not be overwritten by this CLI command.

Note This CLI is useful when using Unified Intelligence Center in SSO mode. Since the Administrator created at install time is not an SSO user, the *make-admin* CLI can be used for providing Administrative roles and permissions to an SSO user.

User Actions

Note You can only view your name and modify parameters such as email and phone number on the Users page without an Administrative role. You cannot change your role or group membership.

Action	Description
Toolbar Actions	
Search	Searches for a user based on First Name, Last Name, or User Name.

All	Lists all active users with associated user roles:
	• Administrator
	  • SC—System Configuration Administrator
	  • SA—Security Administrator
	• Report Designer
	  • RD—Report Definition Designer
	  • R—Report Designer
	  • VL—Value List Collection Designer
	• Report Viewer
	  • D—Dashboard Designer
	  • R—Report Designer

Action	Description
Administrators	Lists all users with an Administrator role. The combination of Security Administrator and System Administrator user role qualifies to be an Administrator.
Inactive	Lists all inactive users. Use the **Edit Users** page to activate or deactivate users.
Refresh	Refreshes the **Users** page.
Create User	Creates a new user. For more information, see *Create Users*.
Ellipsis (…) Actions	
Edit	Edits user details. You can also click on the User Name to edit the user details.
Run As	Refreshes the Unified Intelligence Center web page and reflects the user interface that user is in. Perform this action to verify that the user roles and permissions are appropriately configured. **Note** • When you Run As another user, the top of the page shows both your logged in identity and your Run As identity. • You cannot Run As yourself. • You can Run As one level of user. A Security Admin cannot Run As User A and, as User A, then Run As User B. • You can Run As a different user. Refresh the open Unified Intelligence Center browser tabs to reflect the new user. • To leave the Run As mode, click **Stop Running As** and refresh the open Unified Intelligence Center tabs.
Delete	Deletes a user. Only users with a Security Administrator role can delete a user. You cannot delete a user who owns an entity (Dashboards, Reports, Report Definitions, Schedules, Value Lists, or Collections). To know the list of entities that the user owns, run the "Resource Ownership and Access" stock report. Delete those entities and then delete the user. The *Resource Ownership and Access* report is available as part of the *Admin Security* template from the software page, https://software.cisco.com/download/home/282163829/type/284697222/release/11.5%25281%2529. You cannot delete a user who has been synched into Unified Intelligence Center from Unified CCE or Packaged CCE.

Related Topics

Create Users, on page 38

Create Users

To create a user, perform the following steps:

Procedure

Step 1 In the left navigation pane, choose **Configure** > **Users**.

Step 2 On the **Create User** > **User Information** tab, enter the following:

Field	Description
User Name	User name (domain\name). Use the toggle button to activate or deactivate the user. Maximum length: 280 characters (includes domain name). **Note** You cannot deactivate users who have been synched into Unified Intelligence Center from Unified CCE or Packaged CCE.
Alias	The alias name for this user.
First Name, Last Name	The first name and last name of the user.
Roles	Assign one or more roles to this user. **Note** For a change to take effect, the user must log out, then log in.
Time Zone Settings	The time zone settings to reflect in the report. The time zone is also used for the user's scheduled reports and takes precedence over the time zone that is used by the report server. **Note** If no time zone is set, then the system uses the time zone of the report server. The **Start of the Week** is used in Scheduled Report, Report Views, and Permalink. To set the Start of the Week: • Select the **Locale Based (Sunday)** option to identify Sunday as the start of the week. • Select the **Custom** option to choose from the seven days of the week from the list.
Organization Information	The organization information to be associated with the user, such as the company name, email address, phone number, and user description.

Step 3 Click **Next** to assign a User Group to the created user.

Step 4 In the **Assign User Group** tab, use the arrow keys to move the User Groups from the **Available** list to the **Selected** list.

Note Higher-level permissions persist and override other permissions.

Step 5 Click **Save**.

Create Users - OAMP Console

In addition to creating users in the **Configure** > **Users** page, the user can sign in to Unified Intelligence Center only if the user exist in the Administration - OAMP console (Operation Administration Maintenance and Provisioning) as a Super User or if Active Directory has been configured in the Administration Console for that user's domain.

Users created in the **Configure** > **Users** page help set up roles and assign User Groups before they log in.

For example, if the Security Administrator is aware that 10 new users will be activated in the Administration Console, then the Security Administrator can create those users in the Unified Intelligence Center **Configure** > **Users** page, assigning them User Roles and User Groups.

Note The **User Name** (domain\name) on the **User Information** tab must *match exactly* with that user's domain and user name (all uppercase letters for the domain name; all lower case for the username). If they do not match, when the user signs in, they will be considered as a different user.

For more information, see the *Admin User Management Drawer* chapter in the *Cisco Unified Intelligence Center Administration Guide* at

https://www.cisco.com/c/en/us/support/customer-collaboration/unified-intelligence-center/products-maintenance-guides-list.html.

User Groups

Overview

User Groups are constructs that allow security administrators to partition Unified Intelligence Center functionality.

Creating User Groups expedites the process of provisioning users when multiple users need the same access to dashboards and reports, or when users require distinct permissions and features based on regional or organizational requirements.

User groups have no impact on how data is stored in the database. They are used only for assigning permissions to all the user members of the group through one operation instead of repeating the same operation for each user.

System-Defined All Users Group

All users are automatically a member of the system-defined *All Users* group.

All Users always appears on the User Groups window. The security administrator cannot delete it.

System-Defined Administrator User Group

The security administrator is automatically a member of the system-defined Administrators group and can add other security administrators to it.

Additional Security Administrators must be added to the Administrators group. Having the role does not automatically make them members of that group.

Customer-Defined User Groups

Security administrators can create any number of user groups and can add users to them. From those other user groups, one is designated as the user's *Group* (also called *My Group*).

Groups and Child Groups

Rules for Groups and Child Groups

- A group can be both a Parent and a Child. For example, Group 2 can be child of Group 1. Group 2 can also be a parent of Group 3.
- A Group is not required to have Child Groups.
- A Group may have any number of Child Groups.
- A Child Group cannot be a Parent to its own Parent Group and a Parent Group cannot be a Child of its own Child Group. For example, Group 3 is a child of Groups 1 and 2. Group 3 cannot also be a parent of Group 1 or Group 2.
- A Group can have both Groups and Users as children. For example, Group 2 can be a child of Group 1. User Lee can be a child of Group 1.
- A Group is not required to have a Parent Group.
- **Child Groups Do Not Inherit the Members of their Parent Groups**—Adding a user as a member of a group does not mean that user is also a member of its children. For example, Group 2 and Group 3 are children of Group 1. The security administrator adds User A as a member of Group 1. User A does not automatically become a member of Group 2 or Group 3. To make User A a member of Group 2, the security administrator must add User A as a member of Group 2.

User Group Actions

Action	Description
Toolbar Actions	
Search	Searches for a user group.
Refresh	Refreshes the **User Groups** page.
New	Creates a new user group. For more information, see *Create User Group*.
Ellipsis (…) Actions	

Action	Description
Edit	Edits the user group details. You can also click on the User Group Name to edit the user group details. In the edit mode, click the icon next to the User Group name to edit the User Group properties; Name and Description.
Delete	Deletes a user group. Only users with a Security Administrator role can delete a user group. You cannot delete a user group associated with any entities.

Create User Group

To create a user group, perform the following:

Procedure

Step 1 In the left navigation pane, choose **Configure** > **User Groups**.

Step 2 In the **User Groups** window, click **New**.

Step 3 In the **Create New User Group** window, enter the **Name** and **Description** for the group.

Step 4 Click **Next**.

Step 5 In the **Groups** section, perform the following:

a) **Available**—Lists the available groups that can be the parent of the User Group being created. Use the arrow icons to move accordingly.
b) **Selected**—Lists the groups selected to be the parent group for the User Group being created. Use the arrow icons to move accordingly.

Step 6 In the **Users** section, perform the following:

a) **Available** —Lists all the available users that are available to be children of this group. Use the arrow icons to move accordingly.
b) **Selected**—Lists the users that are currently children of this group. Use the arrow icons to move accordingly.

Step 7 Click **Save**.

Data Sources

Overview

Unified Intelligence Center supports the following types of data sources:

- Query based SQL Data Source
    - Microsoft SQL Server
    - IBM informix

- Streaming Data Source
- Mediasense Data Source (Rest Web Services)

Currently, Unified Intelligence Center does not support usage of integrated security for establishing TLS connections to MS SQL Server databases. However, while establishing a JDBC connection to MS SQL Server, Unified Intelligence Center needs to use TLS (v1.0, v1.1 or v1.2) for transmitting the database credentials to the server. As a JDBC client, CUIC offers the following cipher suites:

- TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA384
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384
- TLS_RSA_WITH_AES_256_CBC_SHA256
- TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA384
- TLS_ECDH_RSA_WITH_AES_256_CBC_SHA384
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA256
- TLS_DHE_DSS_WITH_AES_256_CBC_SHA256
- TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA
- TLS_RSA_WITH_AES_256_CBC_SHA
- TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA
- TLS_ECDH_RSA_WITH_AES_256_CBC_SHA
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA
- TLS_DHE_DSS_WITH_AES_256_CBC_SHA
- TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256
- TLS_RSA_WITH_AES_128_CBC_SHA256
- TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA256
- TLS_ECDH_RSA_WITH_AES_128_CBC_SHA256
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA256
- TLS_DHE_DSS_WITH_AES_128_CBC_SHA256
- TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA
- TLS_RSA_WITH_AES_128_CBC_SHA
- TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA
- TLS_ECDH_RSA_WITH_AES_128_CBC_SHA
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA

- TLS_DHE_DSS_WITH_AES_128_CBC_SHA
- TLS_EMPTY_RENEGOTIATION_INFO_SCSV

Related Topics

Streaming Data Source, on page 46
MediaSense Data Source, on page 46

Data Source Actions

Action	Description
Toolbar Actions	
Refresh	Refreshes the Data Sources page.
New	Creates a new data source. For more information, see *Create Data Source*.
Switch Nodes	Click the **Switch** link on the data source card to switch over nodes (Primary and Secondary). On the confirmation dialog box, click **OK** to confirm the switch over. **Indicators** • *—indicates the current reporting source. • Green icon—indicates an online data source. • Red icon—indicates an offline data source. **Note** Switch Over is not applicable for the Streaming data source. Switch Over is applicable only if the **Enable Failover** check box is checked.
Ellipsis (…) Actions	
Edit	Edits the data source details. In the edit mode, you can click the icon next to the Data Source name to edit the Data Source Description.

Action	Description
Permissions	Assigns appropriate permissions to access and manage the Data Source. **Groups**—Grants **View** and **Edit** permissions for the Data Source. • Security Administrators can grant these permissions to various groups. • Entity owners can grant these permissions to groups that they are directly associated with. **Users**—Grants **View** and **Edit** permissions for the Data Source to various users. Applicable only to Security Administrators. **Note** • Higher permissions (View and Edit) from either an individual user or the user group takes precedence. • Only the first 200 records (alphabetical order) are displayed in the **Members** or **Groups** panel. To view more records, see **Configure** > **Groups**. • When you modify a permission and want to switch between **Groups** and **Users** tabs, you will be prompted to either save or discard the changes.
Delete	Deletes a data source. **Note** You cannot delete a data source that is referenced in Report Definitions and Value Lists. You cannot delete stock data sources (CUIC, UCCE Historical, or UCCE Real-Time).

Related Topics

Create Data Source, on page 44

Data Source Rules

- Set up a database with an SQL user account and password, with read-only permission for the database.
- The database server must allow SQL authentication to enable TCP/IP and remote network connection.
- Do not block the database port by firewalls or any other security software (such as Cisco Security Agent).

Note Windows integrated authentication connection to MS SQL Server is not supported.

Create Data Source

You can create or edit a data source only if you are assigned with a System Configuration Administrator role.

To create a data source, perform the following steps:

Procedure

Step 1 In the left navigation pane, choose **Configure** > **Data Sources**.

Step 2 In the **Data Sources** window, click **New**.

Step 3 In the **Create Data Source** dialog box, enter the datasource **Name**, **Description**, and select the **Data Source Type**.

Step 4 Click **Next**.

Step 5 In the data source details page, enter the following (Primary Node tab):

Field	Description
Host Settings	
Datasource Host	The hostname or IP address of the target data source.
Port	The port number that allows Unified Intelligence Center to communicate with the database. **Note** The port number is a mandatory field only for the Informix database.
Database Name	Enter the name of the database.
Instance	Enter the instance of the database. **Note** The name of the database instance is a required field only for Informix databases.
Time zone	Select the time zone that the database is located in.
Authentication Settings	
Database User ID	The user ID required to access the database.
Password	The password for the user ID required to access the database.
Charset	The character set that is used by the database.
Max Pool Size	The maximum pool size. **Note** Value ranges from 5 to 200. The default Max Pool Size value is 100 and is common for both the primary and secondary data source tabs.

Step 6 Click **Test Connection** to ensure that the database is accessible and the credentials provided are correct.

Step 7 Click the **Secondary Node** tab to configure a failover for the data source.

Step 8 Check the **Enable Failover** check box to configure a failover for the data source.

Step 9 Enter the required details for the failover data source. (Refer step 5)

Step 10 Click **Save**.

Streaming Data Source

Live Data report uses the Streaming data source (stock data source) and the fields are not editable. On the data source card, the primary and secondary hostname or IP address and the Timezone details are displayed.

Note

- When you launch the Data Sources listing page for the first time (after configuring streaming data source), you will be prompted to accept certificates.
- When using Self-Signed certificates, you must accept them explicitly before you can use Cisco Unified Intelligence Center functionalities which includes using Live Data Reports. For more information, see *Browser Support and Self -Signed Certificates* section in *Cisco Unified Intelligence Center User Guide* at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-intelligence-center/products-user-guide-list.html.

MediaSense Data Source

Before you begin

After upgrade or fresh install of Cisco Unified Intelligence Center 12.0, to enable the **Reporting for MediaSense**,

- Apply the MediaSense COP *ciscocuic.enable_rest_datasource.cop.sgn*. You can download and install the COP from https://software.cisco.com/download/release.html?mdfid=282163829&softwareid=282377062&release=11.6(1)&relind.

To configure the MediaSense data source, perform the following steps:

Procedure

Step 1 In the left navigation pane, choose **Data Sources**.

Step 2 In the **Datasources** window, click **New**.

Step 3 In the **Create Data Source** dialog box, enter the datasource Name, Description, and select **Rest Web Services** as the **Data Source Type**.

Step 4 Enter *https://<MediaSense ipaddress>:8440/ora/* to configure the Base URL.

Step 5 In the **Topic Schema URL** field, enter *https://localhost:8444/cuic/mediasense/schema_getSession_CUIC_compat.xml*.

Step 6 Enter the **User Name** and **Password** of **MediaSense** Server.

CHAPTER 6

Permalinks

Variable Parameters in a Permalink

You can apply variable parameters on the fields or on the display name of a field, and on the parameters.

Note Permalinks with filters specified in the URL (also known as Variable Permalinks) are by default authenticated for reports. You can uncheck the **Authenticate Permalink** > **Variable** check box to unauthenticate the variable permalink. Variable Permalinks do not support Excel and XML formats.

Note You must not include both fields and parameters at the same time in a permalink.

You can explicitly specify the filtering criteria by using either fields or parameters in a permalink to display the changed report data.

Format of the Parameters and Fields in a Permalink

You can include variable parameters to the default permalink using the following format:

<variable_param_name> or <field name>=<operator><space><value><space><value>

<variable_param_name> can be either the field name or parameter name as configured in the report definition of the report.

<value> is any valid value for the configured field.

To include multiple variable parameters in a permalink URL, use an & (ampersand) between two variable parameters.

Note The permalink with the variable parameter is one single URL. Do not break it into different lines. In this example, the URL is broken to explain the concept of variable parameters. You can have a space only between an operator and a value.

Parameters

You can apply the variable parameters only on the parameter name for anonymous-block-based and stored-procedure-based reports.

Parameters are created from a stored procedure or an anonymous block.

Example: Permalink with parameters

This example shows how you can include @start_date, @end_date, and @agent_list parameters to change the report data shown by a default permalink based of the values that are passed to these parameters.

Default permalink

```
//localhost:8444/cuicui/permalink/?
```

```
viewId=5BC22D1C1000013C61E3571D0A4E5AF5&linkType=htmlType&viewType=Grid
```

Parameter name 1:

```
&@start_date=ABSDATE 11-01-2012 00:00:00
```

Parameter name 2:

```
&@end_date=ABSDATE 01-21-2013 23:59:59
```

Parameter name 3:

```
&@agent_list=14527,14537
```

Fields

You can apply the variable parameters on a field name or its display name for a database-query-based report.

Fields are created from a database query.

Example: Permalink with fields

This example shows how you can include variable parameters to a permalink URL based on the fields EventTime and User to change the report data shown by a default permalink based of the values that are passed to these fields.

Default permalink

```
//localhost:8444/cuicui/permalink/?
```

```
viewId=5BC22D1C1000013C61E3571D0A4E5AF5&linkType=htmlType&viewType=Grid
```

Field name 1:

```
&EventTime=ABSDATE 11-01-2012 01-21-2013 00:00:00-23:59:59 MON,WED
```

Field name 2:

```
&User=VL CUIC%5Cadministrator
```

The EventTime field retrieves the report data based on the absolute date value **`ABSDATE 11-01-2012 01-21-2013 00:00:00-23:59:59 MON,WED`**.

The User field retrieves the report data based on the value **`&User=VL CUIC`**%5C**`administrator`**.

- *&* is the separator that separates two variable parameters.
- *User* is the second field.
- *VL* is the second operator that works on the values CUIC%5Cadministrator.
- **`CUIC`**%5C**`administrator`** is the value that is passed to the User field.

Supported Operators for Fields

This section describes the supported operators for fields in a permalink:

For all data types, after an operator, specify the field ID as the value. For example, if the ID of IPCC_1.2000001 filter field is 1000, specify this ID in the variable permalink as &SkillTargetID=LIKE 1000.

Note Do not specify the field name as the value.

Data Type	Supported Operators	Example
DECIMAL	**EQ** Equal to **NEQ** Not equal to **LT** Less than **LEQ** Less than or equal to **GT** Greater than **GEQ** Greater than or equal to **BTWN** Between	`&agents_logged_on=LEQ 9.0`

Data Type	Supported Operators	Example
STRING	**EQ** Equal to **NEQ** Not equal to **%** Matches the pattern	`&agent_team_name=LIKE%20%25IPCC_1%25` **Note** Ensure to URL encode the special characters in variable permalinks.

DATETIME	RELATIVE DATE
	ABSOLUTE DATE
		Relative Date
		`&EventTime=RELDATE THISMONTH 09:00:00-23:59:00 MON,TUE,WED,THU,FRI`
		Absolute Date
		`&DateTime=ABSDATE 12-31-2008 12-06-2012 09:00:00-23:59:00 MON,TUE,WED,THU,FRI`

For all other operators

The following other operators can take more than two parameters depending on what you want to configure:

Format:

<date_type_param_name>=

<date_op><space><value_1>

<space><value_2><space><value_3>

RELDATE

Relative date values: Today, Yesterday, This Week, Last Week, This Month, Last Month, Year to Date, and Last Year

<Relative_Date>

Can be any one of these: TODAY, YESTERDAY, THISWEEK, LASTWEEK, THISMONTH, LASTMONTH, YEARTODATE, and LASTYEAR.

<from_timestamp>-<to_timestamp>

Timestamp in 24 hour format indicating both start time and end time separated by a hyphen (-) hh:mm:ss-hh:mm:ss

<weekdays>

Comma separated values indicating days of a week based on which the report data is retrieved. For example, MON,TUE,WED, and so on.

For example:

EventTime=RELDATE LASTMONTH 00:00:00-23:59:59 TUE,THU,SAT

Note You can have <Weekdays> only when you have <from_timestamp>-<to_timestamp>. When you configure days, you must always configure the timestamp. **Example:** EventTime=RELDATE LASTMONTH 00:00:00-23:59:59 TUE,THU,SAT

In case of RELDATE and ABSDATE, if weekdays are not provided to the <weekdays> parameter then the default value is used, that is, MON, TUE, WED, THU,FRI, SAT, and SUN.

ABSDATE

Absolute date requires the following parameters:

<from_date>

Date in the format: MM-DD-YYY

<to_date>

Date in the format: MM-DD-YYY

<from_timestamp>-<to_timestamp>

Timestamp in 24 hour format indicating both start time and end time separated by a hyphen (-) hh:mm:ss-hh:mm:ss

<weekdays>

Comma separated values indicating days of a week based on which the report data is retrieved. For example, MON,TUE,WED, and so on.

For example:

EventTime=ABSDATE 12-21-2012 01-07-2013 00:00:00-23:59:59 MON,TUE,WED

Note <from_date> and <to_date> are mandatory.

<from_timestamp> and <to_timestamp> are optional.

Note For all parameters that take boolean values, TRUE and FALSE are the valid values.

Supported Operators for Parameters

<table>
<tr><th>Operators</th><th>Values</th><th>Description</th><th>Example</th></tr>
<tr><td rowspan="3">RELDATE</td><td colspan="3">It is the Relative date.</td></tr>
<tr><td><value_1></td><td><value_1> can be any of the following:
TODAY, YESTERDAY, THISWEEK, LASTWEEK, THISMONTH, LASTMONTH, YEARTODATE, LASTYEAR</td><td>Option 1
@param1=RELDATE THISMONTH&@param2=RELDATE THISMONTH
For example:
@startDate=RELDATE THISMONTH&@endDate=RELDATE THISMONTH
Option 2:
@param1=RELDATE THISMONTH
For example:
@startDate=RELDATE THISMONTH
Option 3:
@param2=RELDATE THISMONTH
For example:
@endDate=RELDATE THISMONTH</td></tr>
<tr><td><value_2></td><td>Timestamp in hh:mm:ss format</td><td>For example:
@startDate=RELDATE TODAY 00:00:00</td></tr>
<tr><td rowspan="3">ABSDATE</td><td colspan="3">It is the Absolute date.</td></tr>
<tr><td><value_1></td><td>date in the format: MM-DD-YYYY</td><td></td></tr>
<tr><td><value_2></td><td>Timestamp in hh:mm:ss format.</td><td>For example:
@endDate=ABSDATE 12-21-2012 01-07-2013 00:00:00-23:59:59 MON,TUE,WED</td></tr>
</table>

Collections as Variables in Report Permalinks

You can use collection names as a variable parameter in a permalink provided you have the right permissions to the collections.

Note Permalinks with variable parameters are always authenticated irrespective of the check box **Enable Unauthenticated Access** being checked or not.

Note If you do not provide specific collection names after the *=CL* keyword, the report will be filtered using all the collections that the user has permissions for. The user in this case is the person using the permalink.

Format of the Permalink URL as collection variable for SQL based Report Definition

Permalink URL&<field name>=CL<white space>Collection 1,Collection 2.

Example

```
https://localhost:8444/cuic/permalink/PermalinkViewer.htmx?

viewId=65FB26481000013F000000250A8E79F3&linkType=htmlType&viewType=Grid

&EventTime=RELDATE%20TODAY%2009:00:00-23:59:00&User=CL
TestColl_FF_15201,TestColl_FF_7066
```

In the above URL, *&User* is the name of the field and *TestColl_FF_15201* and *TestColl_FF_7066* are collection names separated by commas.

Format of the Permalink URL as collection variable for Stored Procedure or Anonymous Block Report Definition

Permalink URL&<parameter name>=CL<whitespace>Collection 1,Collection 2.

Example

```
https://localhost:8444/cuic/permalink/PermalinkViewer.htmx?

viewId=25DE58941000012E63BCDF340A591C3A&linkType=htmlType&viewType=Grid

&refreshRate=3600&@start_date=ABSDATE 05-03-2010 00:00:00&@end_date=ABSDATE 01-03-2014
23:59:00&@team_list=CL TestColl_FF_15201,TestColl_FF_7066
```

In the above URL, *&@team_list* is the name of the parameter and *TestColl_FF_15201* and *TestColl_FF_7066* are collection names separated by commas.

APPENDIX **A**

Cisco Unified Intelligence Center SQL Syntax

Cisco Unified Intelligence Center SQL Syntax

This topic provides the following information on using the SQL Syntax for Cisco Unified Intelligence Center:

- Guidelines
- Supported Data Types for Fields and Parameters
- Special Keywords for the SQL Parser (with Sample Queries)

Guidelines

- You cannot use comments in an SQL query.
- A database query must contain a select statement followed by one or more fields. For example: `SELECT [fields] FROM [tables] WHERE [...]`

  This sample query: `select CallTypeID, TimeZone from Call_Type_Interval where TimeZone = 240` creates fields CallTypeID and TimeZone.
- You should not use SELECT*, instead you must list all the fields you want to be returned in a SQL query
- An Anonymous Block must be a valid SQL statement that returns a result set. It may contain parameters named :[paramName], where a colon is always the first character of the parameter name and [paramName] is a remaining part of the parameter name.

  The parameter values entered by a user are substituted into the body of the anonymous block in place of the corresponding parameter names.
- Informix and SQL Server Stored Procedures are supported. Stored Procedures must return a result set. For Stored Procedures, parameters are used to pass the values when making a stored procedure call to the database to obtain the result set.
- Using the Datediff() function in a Where clause causes performance issues.
- There can be no unnamed fields in an SQL query. Each field needs an alias.
- Alias names must be unique.

- Informix stored procedures must contain a returning statement, and for each data type in the returning statement, there must be a corresponding alias specified with the letters AS.

  For example: RETURNING CHAR(32) AS returnID, CHAR(32) AS returnName, INTEGER AS returnRefreshrate, BOOLEAN as returnHistorical; And not: RETURNING CHAR(32, CHAR(32, INTEGER, BOOLEAN; If a user fails to provide an alias, the field name will just be fieldN, where N is the index of unnamed field, such as field1, field2, and so on.

- Informix stored procedure parameter names are prefixed with the 'at' character: *@param1*, *@param2 ...*

Supported Data Types for Fields and Parameters

- *BIGINT, DECIMAL, DOUBLE, FLOAT, INTEGER, NUMERIC, SMALLINT, REAL, TINYINT*
- *CHAR , LONGNVARCHAR, LONGVARCHAR, NCHAR, NVARCHAR, VARCHAR*
- *DATETIME*
- *BOOLEAN, BIT*

Special Keywords for the SQL Parser (with Sample Queries)

- **ALL** (SQL Server or Informix)—SELECT ALL CallTypeID from Call_Type_Interval
- **DISTINCT** (SQL Server or Informix)—SELECT DISTINCT CallTypeID from Call_Type_Interval
- **TOP** (SQL Server)—SELECT TOP 5 CallTypeID from Call_Type_Interval
- **FIRST** (Informix)—SELECT FIRST 5 ID FROM CUICDATASETINFO
- **UNIQUE** (Informix)—SELECT UNIQUE NAME FROM CUICGRID

Unified Intelligence Center supports these aggregate functions for both Informix and SQL Server: SUM, COUNT, MIN, MAX, and AVG.

In cases where a report definition field is an aggregate function (such as *sum(CallsHandled)*, and that field is a key criteria field or an advanced filter, the supported syntax is:

```
SELECT (fields)FROM [tables]
WHERE [...]
GROUP BY [...]
HAVING [...] optional
ORDER BY [...] optional
```

Sample query:

```
select CallTypeID, TimeZone, sum(CallsHandled) as total, avg(CallsHandled) as average
from Call_Type_Interval
where TimeZone = 240
group by CallTypeID, TimeZone
having sum(CallsHandled) in(3, 5, 13) and avg(CallsHandled) > 0
order by CallTypeID
```