



Solutions Business Manager SBM Reporting Guide

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Table of Contents

Chapter 1: Welcome to SBM Reporting	11
Getting Help	11
Chapter 2: About Reports	13
Report Overview	13
About Custom Reports	13
About Application Reports	13
About Built-in Reports.....	13
About System Reports	14
Sample Reports	16
Project Manager Sample Reports	16
Quality Assurance Reports.....	17
Chapter 3: Using Reports in Work Center	19
Managing Reports	19
Searching for Reports	21
Creating Reports	23
Scheduling Reports.....	25
Using Report Filters	27
Using SLA Reports in Work Center	28
Chapter 4: Using Custom Reports	33
Creating and Editing Custom Reports	33
Choosing a Custom Report Type	33
Creating Custom Reports	34
Selecting a Report Item Type.....	38
Selecting a Report Project	39
Selecting Fields to Display as Columns in the Report	39
Previewing Reports	40
Saving Reports	40
The Saved Report Page	42
Including Data from Related Items	43

Adding Join Conditions.....	44
Using Calculations in Reports	45
Two-Operand Calculations	45
Calculations in Listing and Multi-Table Reports	45
Single-Field Functions	46
Sending Links to Reports Through E-mail	47
Getting JSON Output from Reports	48
Tracking Report Changes and Deletion	48
Report Reference	49
List Reports	49
Custom Listing Reports	49
Content Options for Listing Reports	50
Search Filters for Listing Reports	51
Sorting Options for Listing Reports	52
Additional Listing Report Options	52
Listing Report Results	55
Change History Reports	58
Content Options for Change History Reports	58
Search Filters for Change History Reports	59
Sorting Options for Change History Reports	60
Additional Options for Change History Reports	61
Change History Report Results	61
Deleted Items Reports.....	62
Content Options for Deleted Items Reports.....	62
Sorting Options for Deleted Items Reports	64
Additional Options for Deleted Items Reports.....	64
Deleted Items Report Results	65
Multi-Table Reports	66
Content Options for Multi-Table Reports	66
Search Filters for Multi-Table Reports	66
Sorting Options for Multi-Table Reports	67

Additional Options for Multi-Table Reports	68
Multi-Table Report Results	70
Transition Reports	71
Content Options for Transition Reports	71
Search Filters for Transition Reports	72
Sorting Options for Transition Reports	73
Additional Options for Transition Reports	74
Transition Report Results	74
Distribution Reports.....	75
Custom Distribution Reports	75
Content Options for Custom Distribution Reports	76
Search Filters for Custom Distribution Reports	78
Sorting in Custom Distribution Reports	79
Additional Options for Custom Distribution Reports	80
Drill-Down Display Options for Distribution Reports	82
Custom Distribution Report Results	82
Advanced Distribution Reports	83
Content Options for Advanced Distribution Reports	83
Grouping Field Values.....	85
Search Filters for Advanced Distribution Reports	85
Additional Options for Advanced Distribution Reports	86
Drill-Down Display Options for Advanced Distribution Reports	88
Advanced Distribution Report Results	89
Summary Reports	89
Content Options for Summary Reports.....	90
Search Filters for Summary Reports	91
Additional Summary Report Options	92
Drill-Down Display Options for Summary Reports	94
Summary Report Results	94
Duration Reports	95
Advanced Time in State Reports	95

Content Options for Advanced Time in State Duration Reports	96
Search Filter for Advanced Time in State Reports	97
Additional Options for Advanced Time in State Reports	99
Drill-Down Display Options for Advanced Time in State Reports	100
Advanced Time in State Results	100
Average Time to State Reports	101
Content Options for Average Time to State Duration Reports.....	102
Search Filter for Average Time to State Reports	104
Additional Options for Average Time to State Reports	105
Drill-Down Display Options for Average Time to State Reports	106
Average Time to State Results	106
Elapsed Time Reports	107
Content Options for Elapsed Time Duration Reports	107
Search Filter for Elapsed Time Reports.....	110
Additional Options for Elapsed Time Reports	111
Drill-Down Display Options for Elapsed Time Reports	112
Elapsed Time Results.....	112
Time In State Reports	113
Content Options for Time in State Duration Reports	113
Search Filter for Duration Reports	114
Additional Options for Time In State Reports	115
Drill-Down Display Options for Time in State Reports	116
Time in State Report Results	117
Trend Reports	117
Custom Trend Reports	118
Content Options for Custom Trend Reports	118
Search Filter for Custom Trend Reports	121
Sorting in Custom Trend Reports	122
Additional Options for Custom Trend Reports	123
Drill-Down Display Options for Custom Trend Reports	124

Custom Trend Report Results	125
Trend Report Results	126
Estimated Backlog Trend Reports	127
Content Options for Estimated Backlog Trend Reports	127
Search Filter for Estimated Backlog Reports	129
Additional Options for Estimated Backlog Reports	130
Drill-Down Display Options for Estimated Backlog Trend Reports	132
Estimated Backlog Trend Report Results	132
Backlog Trend Reports	133
Content Options for Backlog Trend Reports	133
Search Filter for Backlog Reports	135
Additional Options for Backlog Reports	136
Drill-Down Display Options for Backlog Trend Reports	137
Backlog Report Results	137
Entering a State Trend Reports	138
Content Options for Entering a State Trend Reports	138
Search Filter for Entering a State Reports	140
Additional Options for Entering a State Reports	141
Drill-Down Display Options for Entering a State Reports	142
Entering a State Results	143
Open and Completed Trend Reports	143
Content Options for Open and Completed Trend Reports	144
Working with Completed Definitions	145
Search Filter for Open and Completed Reports	146
Additional Options for Open and Completed Reports	147
Drill-Down Display Options for Open and Completed Reports	148
Open and Completed Results	148
State Activity Reports	149
Content Options for State Activity Trend Reports	149
Search Filter for State Activity Reports	151

Additional Options for State Activity Reports	152
Drill-Down Display Options for State Activity Reports	153
State Activity Results.....	154
Additional Options for Duration and Trend Reports	154
Dashboard Reports	157
Calendar Reports	157
Content Options for Calendar Reports	158
Search Filters for Calendar Reports	159
Additional Options for Calendar Reports	160
Calendar Report Results	161
Multi-Calendar Reports	162
Content Options for Multi-Calendar Reports	163
Additional Options for Multi-Calendar Reports	163
Multi-Calendar Report Results	164
Drill Through Reports	166
Content Options for Drill Through Reports	167
Drill Through Report Results	168
Multi-View Reports	169
Content Options for Multi-View Reports	169
Multi-View Report Results.....	170
Other Reports	171
Details Reports	171
Content Options for Details Reports	171
Search Filters for Details Reports	172
Sorting Options for Details Reports	173
Additional Options for Details Reports	173
Details Report Results	173
External Reports	174
Viewing External Reports	174
State Change Reports	174
Content Options for State Change Reports	174

Search Filters for State Change Reports	175
Sort Options for State Change Reports.....	176
Additional State Change Report Options	176
State Change Report Results	177
Version Control Actions Reports	177
Content Options for Version Control Actions Reports	178
Calculations in Version Control Actions Reports	179
Search Filters for Version Control Actions Reports.....	180
Sorting Options for Version Control Actions Report	181
Additional Options for Version Control Actions Reports	181
Version Control Actions Report Results	182
Chapter 5: Report Search Criteria	183
Using Basic Conditions in SBM Reports	183
Creating Search Filters Using Basic Conditions	183
Advanced Search Filter Options	184
Modifying Conditions Used in Search Filters	185
Removing Conditions from Search Filters	185
Working with Field Search Specifications	185
Selecting Fields for a Condition	186
Condition Operators	186
Selecting Field Values for a Condition	189
Using Advanced SQL Conditions in SBM Reports	192
About Pass-Through SQL	192
Considerations for Using Pass-Through SQL	193
Examples of SBM Pass-Through SQL	194
Examples of Using Joins in Pass-Through SQL	196
About SBM-Processed SQL	196
Examples of SBM-Processed SQL	197
Using SBM-Processed SQL for Multi-Selection, Multi-Group, and Multi-User Fields	198
Examples of Using LIKE and NOT LIKE Operators in SBM-Processed SQL	198

Using Query at Runtime in Advanced SQL.....	199
Common SQL Operators.....	201
Combining Basic Conditions and Advanced SQL Conditions.....	202
Chapter 6: Exporting SBM Data to Microsoft Excel®	205
Using the Export to Excel Link.....	205
Opening Exported Excel Reports in a Separate Window	206

Chapter 1: Welcome to SBM Reporting

SBM provides a wide range of reporting capabilities. The reporting capabilities available to you depend on your user privileges.

About This Document

This document provides guidance for creating and using SBM reports. The guide's primary audience is users who create and run reports of all types.

This document is organized into the following sections:

- [Chapter 2: About Reports \[page 13\]](#)
Provides information about the types of reports available to you. Sample reports are also provided.
- [Chapter 3: Using Reports in Work Center \[page 19\]](#)
Explains how to find, create, edit, and run reports in SBM Work Center.
- [Chapter 5: Report Search Criteria \[page 183\]](#)
Provides guidance for using two types of search criteria: basic and advanced SQL.
- [Chapter 6: Exporting SBM Data to Microsoft Excel® \[page 205\]](#)
Explains how to extract report data to Microsoft Excel.

Getting Help

Aside from this document, additional guidance is available from the following resources.

Documentation Center

Visit the [Documentation Center](#) for the most current product documentation, which includes an extensive documentation archive.

Support and Knowledge Base

The support site at <https://www.microfocus.com/support-and-services/#SBM> provides an extensive, searchable Knowledge Base.

You must have a user account to view items in the Knowledge Base. Register for a free account if you do not already have one.

User Forums

Visit the [User Forums](#) to interact with other users and learn more about using our products.

You can view and search for information, but you must create and log in to a forum account to respond to articles and interact with other users.

Chapter 2: About Reports

The following topics provides an overview of the types of reports available to you. Report examples are also provided.

- [Report Overview \[page 13\]](#)
- [Sample Reports \[page 16\]](#)

Report Overview

Reports offer real-time data based on the report criteria, giving you current information when you need it. Several types of report formats are available, including lists, tables, and charts.

- [About Custom Reports \[page 13\]](#)
- [About Application Reports \[page 13\]](#)
- [About Built-in Reports \[page 13\]](#)
- [About System Reports \[page 14\]](#)

About Custom Reports

You can choose from a wide variety of report types to create custom reports that present real-time data when you need it. You can create private reports or reports that you can share with others.

Data is returned based on search filters that you define.

For details, refer to [Chapter 4: Using Custom Reports \[page 33\]](#).

About Application Reports

Application reports are created as *report definitions* in SBM Composer and are available to you as read-only listing reports. You can run one of these reports, and then save it with a new name as an ordinary listing report. However, you cannot directly modify or delete an application report.

About Built-in Reports

SBM provides a set of built-in reports that you can run for every application that you can access. The default set of built-in reports available to you depends on your product-access level.

Most built-in reports return a list of primary items, but you can run three reports (All Contacts, All Active Contacts, and All Inactive Contacts) against the *Contacts* table, which is an auxiliary table. These built-in reports are only available if you have privileges to view items in the *Contacts* table.

Built-in reports are internal reports and cannot be modified. Depending on your privileges, you can select a built-in report as a single-report that is included in a **Multi-View** report.

The following are a few examples of built-in reports:

- **Built-In: All Items** – Returns all items you can view in the selected application.
- **Built-In: All Unowned Items** – Returns all items in the selected application that do not have an owner.
- **Built-In: All Active Items I Submitted** – Returns all active items you submitted into the selected application.
- **Built-In (All Tables): All Items I Am the Primary Owner** – Returns all items in all applications for which you are the primary owner.
- **Built-In (All Tables): All Items I Am the Secondary Owner** – Returns all items in all applications for which you are the secondary owner.



Note: The built-in reports "All Items I Own," "All Active Items I Own," and "All Inactive Items I Own" return all items that users primarily and secondarily own.

About System Reports

System reports offer information about administrative aspects, such as fields, user privileges, group membership, user activity, and more. System reports are not customizable and cannot be deleted, nor can new System reports be created.



Note: System reports are only available to on-premise customers.

The following System reports are available:

- **Active Users** — Displays the number of users who have actively used the system in the last 12 months. An active user is defined as any user who has created or updated a report or submitted, transitioned, updated, or deleted an item. Given an **Active Users as of Date** value, the report returns each month from the past 12 months and the number of active users for each month. You can either manually enter a date or use the calendar to select a date, and then click **Run Report** to execute the report. If no date is provided, the report will use the current date. The results display the month, **Full User Count**, **Occasional User Count**, and **External User Count** for that month, and the month-to-month aggregate for each type of user.
- **Current User Activity** — Provides the login IDs of users who are logged in to SBM, how long it has been since they have last interacted with SBM, the IP address for logged in users, and the IP address of the Web server to which they are connected.



Note: If a user manually logs out, the **Last Accessed (minutes)** changes to a value in the high 50s when the report is reloaded or updated. After the next reload or update, the user is removed from the report. If a user times out after 60 minutes of inactivity, the user is automatically removed from the report during the next reload or update.

- **Group Membership** — Provides a list of the members of the selected group or groups, including deleted users. Includes access level (**Privilege Category**), last

login date, creation date, telephone number, and e-mail address for each listed user. Also includes a **Memo** column.

- **Item Locks** — Provides a list of items that are locked by users who are updating or transitioning them. You can limit the report to item locks in specific tables. The tables that can be selected from the list have been enabled for record locking by your administrator. The report displays the title of the locked item, the user holding the lock, and the amount of time remaining on the lock. Item locks can be manually cleared in SBM Application Administrator.
- **Privileges** — Provides a list of privileges for the selected users and groups. A check mark indicates that a privilege is granted to the user or group. You can limit the report to display privileges for a specific project or public or Knowledge Base folder.



Note: System reports that display group and user project-level privileges reflect privileges that are inherited from roles.

- **Project Fields** — Displays fields for selected project transitions. View selected field properties, such as the section in which a field resides, the name of the field and its data type, whether or not the field is required or read only, and the field default value. If you do not select a project and you click the **Run Report** button, the report is generated for all projects.
- **Requests Monitor** — Displays a list of currently running reports. For each report, the list shows the owner, type, name, URL, status, start time, and duration. Click the **Cancel** link to cancel any report you executed, or if you have the appropriate privileges, you can also cancel reports executed by other users.
- **Users** — Displays a list of all users in the system, their assigned product-access level (**Privilege Category**), the date on which they last logged in to SBM, the date their account was created, their telephone number and e-mail address, and any memo text supplied with their account by your administrator.
- **Users Change History** — Provides changes made to user accounts by administrators for a specific time period. For each change, the report shows the login ID of the modified user account, the timestamp of the change, the name of the administrator who made the change, and one of the following action types:
 - **Created** — Indicates that the user account was created.
 - **Deleted** — Indicates that the user account was deleted.
 - **Undeleted** — Indicates that a user's deleted account has been undeleted.
 - **Disabled** — Indicates that the user has exceeded the allowed number of failed login attempts.
 - **Enabled** — Indicates that a user's disabled account has been enabled.
 - **Modified** — Indicates that the account was modified in some way, including the actions in this list.



Note: The name of the administrator who made a change to a user account is provided. "ODBC Administrator" indicates that the administrator was logged into SBM System Administrator using an ODBC connection to the database.

- **Workflow Fields** — Displays fields for the selected workflow's transitions. View selected field properties, such as the section in which a field resides, the name of the field and its data type, whether or not the field is required or read only, and the field's default value.

Sample Reports

The following topics explain how particular roles would use different report types:

- [Project Manager Sample Reports \[page 16\]](#)
- [Quality Assurance Reports \[page 17\]](#)

Project Manager Sample Reports

Project managers focus on keeping the project focused on its goal and managing the project constraints such as cost, time and scope of the project.

The report types that project managers find useful are Distribution reports, Trend reports, Editable Grid listing reports, and Drill Through reports.

- **Distribution** reports give a visual representation of the status of current items, allowing managers to quickly ascertain when the number of items assigned to a release or developer is a point of concern if the planned released date is to be reached.
- **Trend** reports allow managers to see the rate at which items are being opened and closed, which helps them to ensure that scope of the project is not growing beyond the teams ability to reach their goal.
- **Drill Through** reports links together distribution reports, which allows you to start with a general report and then move down into a more granular level as you pass data between the reports.



Tip: When saving your report, select the **Privilege Category** which will allow other members of your team to access the report. For example, if your team members have privileges to the User reports, select the **User** option. This allows you to send the report URLs by email or for your team members to search for and run the reports that you have created.

The following reports are some examples of reports that would be used by a project manager:

- **Distribution Report by Release** - Provides a visual representation of how many items are in each release line. To create this report, create a Distribution report and choose Release as the row. To limit the display to active items, add a search filter to display only items that equal active.
- **Backlog Trend Report by Types** - Enables you to track how long items have been open. To create this report, create a Trend - Backlog report and choose to group by type. Leave the end date blank to track current items.
- **Distribution Report across Team Members** - Shows you the balance of work across a team. To create this report, create a Distribution report and choose to group by Team Member or owner.

-
- **Open and Completed Trend Report** - Keeps you informed about the relation of the incoming items compared to the items that are being closed by a particular user or feature. To create this report, choose a Trend - Open and Completed report, and then group by user or feature.



Tip: You could combine the preceding reports into a comprehensive Drill Through report that begins with the distribution of items by release and type. You could then drill through the information in the main report, by passing the selected data into the Backlog trend report, Distribution by Team Member report and Open and Completed trend report. You could add an additional drill through option, selecting to pass information from the Distribution by Team Member to Open and Completed trends, which would allow you to see how particular team members are opening and closing items.

- **Mass Update Reports** - Enables you to update multiple items with the same value or to perform the same transition.
- **Listing Report Displaying Estimated Efforts of In-Progress Items** - Enables you to estimate how much time is remaining on each of the items. To create this report, you must have added an estimated effort field to your application. When you create the listing report, add this estimated effort field to display in the report.

Quality Assurance Reports

Quality Assurance managers and testers seek to keep track of new features, incoming defects, tested defects, and trends.

The report types that the quality assurance teams find most useful are Listing reports, Distribution reports, and Trend reports.

- **Distribution** reports give a visual representation of the status of current items, allowing quality assurance managers to quickly ascertain how items are distributed among the QA team members or in how they appear in current states.
- **Trend** reports allow managers to see the rate at which items are being opened and closed, which helps them to ensure that scope of the project is not growing beyond the team's ability to reach their goal. A commonly used Trend report type is Open and Completed, which shows the rate at which items are coming in and being closed.
- **Listing** reports allow testers to search and display lists of items. This lets you see the particular items that are assigned to tester, in a particular state or related to a particular functional area.
- **Duration** reports show how long items have remained in a particular state, which allows managers to ensure that items are being addressed and tested in a timely manner after they are assigned to QA. A commonly used Duration report is the Elapsed Time report.

Chapter 3: Using Reports in Work Center

Reports enable you to define search, display, and sort criteria for a set of work items for specific applications, application groups, or auxiliary tables.

Depending on your privileges and the products you use, you can:

- Add reports to dashboard views.
- Search for available reports. For details, refer to [Searching for Reports \[page 21\]](#).
- Create and edit private reports or reports that can be shared with others. For details, refer to [Creating Reports \[page 23\]](#).
- Run built-in reports.
- Run system reports (on-premise customers only).
- Schedule reports to run a specific time and send results by e-mail. For details, refer to [Scheduling Reports \[page 25\]](#).
- Create, edit, and delete report filters. For details, refer to [Using Report Filters \[page 27\]](#).
- Run Service Level Agreement (SLA) reports. For details, refer to [Using SLA Reports in Work Center \[page 28\]](#).

Managing Reports

Click **Reports** in the SBM side menu to search for, create, and manage reports in SBM.

Use the legend below to learn more about managing reports in SBM.

1. Select a category. The categories appear in a drop-down list or in a row depending on the current browser size. Choose to view reports from these categories:

- **Recent Reports**

See the most recently run reports. Results are limited to 200 reports.

- **My Reports**

See reports that you created.

- **All Reports**

See all reports that you can access. Reports are listed alphabetically.

- **Built In Reports**

See all built-in reports for the selected application or application group. SBM provides a set of built-in reports that you can run for every application that you can access. The default set of built-in reports available to you depends on your product-access level.

- **System Reports (On-premise only)**

See reports that provide information about administrative aspects, such as fields, user privileges, group membership, user activity, and more. Typically, System reports are only available to administrators. They cannot be deleted or customized, nor can new System reports be created. .

- **Scheduled Reports**

Lists reports that are scheduled to run at a particular time. Results are sent to your e-mail address. For details, refer to [Scheduling Reports \[page 25\]](#).






- **Report Filters**

Lists available report filters that can be used in a report's **Search Filter** to limit report results. For details, refer to [Using Report Filters \[page 27\]](#).

-
2. Click to create new custom reports. For details, refer to [Creating Reports \[page 23\]](#).
 3. Search for reports within the selected category.
 4. Filter the list of reports by favorites, application, project, auxiliary table, report type, access level, or author.



Note: If too many items are returned in any category, you can search the results lists. For example, if more than 10 applications are returned, you can search for a specific application in the result list.

5. Click a report row to run the report.
6. Click on the icons in a row to:
 -  : Schedule the report to run at a specific time and send results to you by e-mail. Refer to [Scheduling Reports \[page 25\]](#).
 -  : Edit the report. Refer to [Editing Reports \[page 23\]](#).
 -  : Delete the report. Refer to [Deleting Reports \[page 24\]](#).
 -  : Favorite a report. This pins a report to the side menu (indicated by a yellow star). You can also drag and drop a report to the side menu to make it a favorite.
 -  : Using the drop-down list, you can:
 - Add the report to your quick links or folders.
 - Copy the report URL to the clipboard.

Searching for Reports

You can use two methods to find reports:

- **Quick Search**

Use to find and run reports in all applications or the selected application context. Refer to [Using Quick Report Search \[page 22\]](#).


- **Reports Search**

Use to find reports that you can run, edit, delete, and schedule. For details, refer to [Using the Reports Search \[page 22\]](#).

Both search options enable you to search for information in the report title, comment, footer, and reference name.

Using Quick Report Search

To use the quick report search:

1. Select the application or application group that contains the reports that you want to find, or select **All** to search in the global context.
2. Click the **Search** () icon on the main toolbar.
3. Click **Reports**.
4. Type your search criteria in the **Search** box.
5. Click a report row to run the report.

A list of reports matching your criteria is returned. Use the filters on the left to limit the list of results until you find the report you need.

Using the Reports Search

To use the Reports search:

1. In the Work Center side menu, click **Reports**.
2. Select a report category to search. For example, select **My Reports** to search for reports you created or select **All Reports** to search all reports you can access.
3. Search for the report you want to run, then filter the results list by one of the following:
 - Favorite
 - Application
 - Project
 - Type
 - Access
 - Author



Note: If too many items are returned in any category, you can search the results lists. For example, if more than 10 applications are returned, you can search for a specific application in the result list.

4. Reports are listed in the right pane and are sorted by the last run time. Click a report row to run the report.

Creating Reports

Depending on your privileges, you can create reports that are associated with a specific application or solution. This enable you to quickly and easily access the report as you work with an application.

To create a report:

1. In the side menu, click **Reports**.
2. Click the **Create Report** button located in the upper right corner.
3. Select a report category such as List, Distribution, or Duration.
4. Review the available report types for that category.

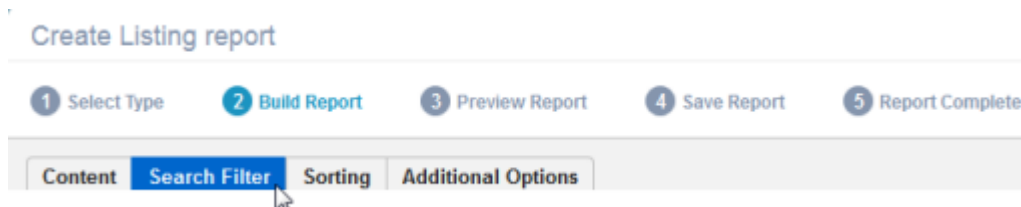


Tip: Under each tab, click on a report type to view a sample image of the report. For certain types of reports, you can then hover your mouse over the styles that appear above the sample image to use the style that appears.

For example, under **Trend**, click the **Backlog** report, and then hover over the **Horizontal Bar** template to change the preview image.

For details about each report type, refer to [Report Reference \[page 49\]](#).

5. Click the report type name, icon, or the sample image to begin creating a report using the selected template.
6. Click the tabs at the top of the page to set content, search, sorting, and other options.

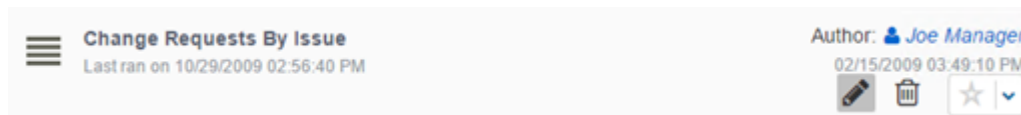


7. Once report criteria is set, click **Preview** to review results. You can then either save your results or click **Back** to refine report criteria.

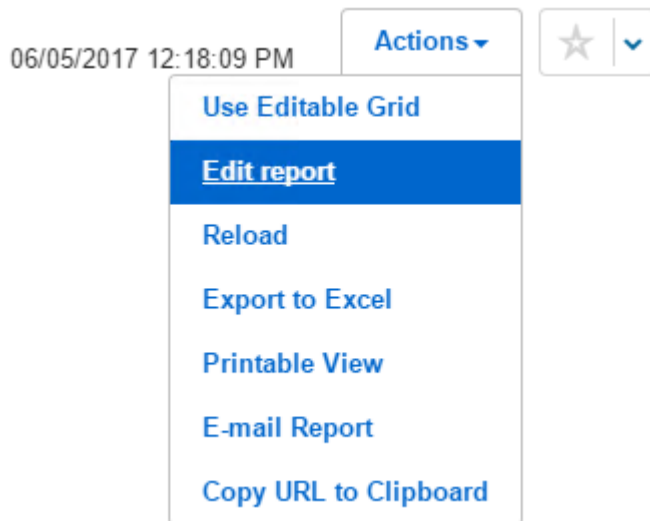
Editing Reports

Use one of these methods to edit a report:

1. From a report list, click the **Edit** icon.



2. After you run a report, select **Edit report** from the **Actions** menu.



Deleting Reports

To delete a report, click the **Delete** icon.

Viewing and Canceling Reports (On-Premise Customers Only)

Follow this procedure when you want to view or cancel a currently running report. This procedure is useful if the system slows down for some reason (for example, if a mass update is being performed), and you want to check the status of the report before attempting to run the report again. Otherwise, if you start multiple instances of the same report, it could lead to over-consumption of server threads and eventual server hangs.

You can perform this procedure on the following report types: Listing, Change History, Distribution, Advanced Distribution, Trend, Summary, State Change, Calendar, Multi-Table, and Backlog.

1. Click **Reports** in the side menu.
2. Select **System Reports** from the row or the drop-down list.
3. Click **Requests Monitor** to run the report.

From the Requests Monitor report page, you can do the following:

- View details about reports that are currently running
- Cancel any reports you executed
- If you have the appropriate privileges, cancel reports executed by other users



Note: You cannot cancel a report while the database query is being completed, usually during the initial stage of the report execution. Once the query is complete, the **Cancel** link appears.

Scheduling Reports

You can schedule most reports to run at a particular day and time and have the results sent to the e-mail address specified in your user account and to other users, depending on your privileges. You can also schedule reports to run on a recurring basis.


The e-mail message includes a link to a report a PDF attachment that contains the report results. For the following report types, users can choose to send report data in a PDF or an Excel document:

- Listing
- Reports with join conditions
- Change History
- Deleted Items
- State Change
- Version Control Actions
- Multi-Table

Only the first 10 columns are included in PDF reports that return a list of items, such as those above. PDF results for list-type reports are limited to 200 items by default. Your administrator can change this setting, however.

Tabular reports are limited to 20 columns by default. If more than 20 columns are returned, the PDF displays a message that there are too many columns to display in the report. You can reduce the number of columns in your report or ask your administrator to increase the allowed number of columns.

To schedule a report:

1. In the side menu, click **Reports**.
2. Find the report you want to schedule. For guidance, refer to [Searching for Reports \[page 21\]](#).
3. Click the **Schedule Report** () icon.
4. On the **Schedule a Report** dialog box, select **Daily**, **Weekly**, or **Monthly** to schedule recurring report generation, or select **On Date** to send the report once on a specific date.
5. Specify the time the report should be generated, based on the time zone set in your user profile.
6. Depending on the type of report, you may be able to choose to send a PDF or an Excel file.
7. Depending on your privileges, you can enter all or part of a user name or group in the **CC** field to send the report to other users.
8. Click **Show Advanced Options** to use the following options:
 - **E-mail template**

Select an e-mail template to use for the scheduled report. The available templates are managed by your administrator. Administrators can create and edit scheduled report e-mail templates (including the `sr_scheduled_reports.htm/.txt` templates) in SBM Application Administrator.

- **Preview**

Preview the scheduled report notification message. The preview contains text for successful reports and failed reports.

- **Deliver as**

Depending on the type of report, use this option to send the results in either an Excel file or a PDF.

- **Suppress e-mail if there are no report results**

Select this check box to suppress the scheduled report e-mail if the report does not contain any results. Only applies to listing reports.

9. Save your changes.

Note the following additional information:

- You cannot schedule Drill Through, Details, Calendar, and Application reports.
- For Multi-View reports, a separate PDF or zip file is attached for each report.

Viewing Scheduled Reports

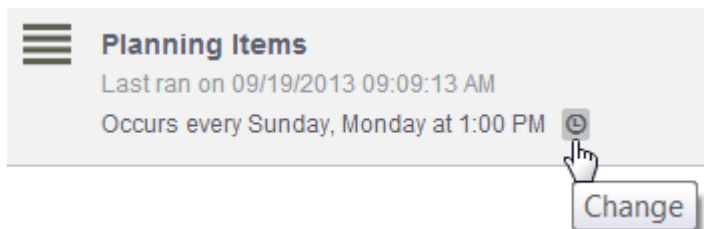
To view reports you have scheduled:

1. In the side menu, click **Reports**.
2. Click **Scheduled Reports**. Your scheduled reports are listed in the right pane.

Removing Scheduled Reports

To remove scheduling information from a report:

1. In the side menu, click **Reports**.
2. Click **Scheduled Reports**. Your scheduled reports are listed in the right pane.
3. Find the report, and then click the **Change** (⊙) icon located under the report title.



4. On the **Schedule a Report** dialog box, click **Remove**.

Using Report Filters

On the **Report Filters** page, you can view, edit, and create report filters, which you can use to limit report results according to a set of pre-defined conditions in one or more reports (and feeds). With report filters, you can define search criteria once, and then reuse the same criteria across several different reports and feeds. This means when you create or edit reports, you can select an existing report filter on the **Search Filter** tab instead of having to define the same report conditions multiple times in multiple reports. This also applies to the field specification when you create a feed in Work Center.

Report filters also simplify report maintenance. For example, if a user leaves the company, you can remove the user's name from a single report filter instead of editing each report that uses a similar **Search Filter** with the user's name and removing the name multiple times.

Business rules that designers create in SBM Composer can be reused as report filters throughout your reports in SBM. Report filters that are tied to rules defined in SBM Composer do not have an **Author**, and cannot be edited or deleted like other report filters in Work Center.

Each report filter is assigned an **Access** level that determines who can view, edit, and delete the report filter. Note the following about each access level:

- You can view, edit, and delete **Public** and **Private** report filters that you create.
- Only a user who has Remote Administration privilege can edit and delete **Public** report filters for which he or she is not the author.
- Report filters that are tied to rules defined in SBM Composer have a **System** access level, and cannot be deleted from Work Center.

Creating a Report Filter

To create a new report filter:

1. In the side menu, click **Reports**.
2. Click **Report Filters**.
3. Click **Create Filter**. The **New filter** dialog box appears.
4. In the **Filter name** field, enter a name for the new filter that clearly identifies the filter that you are creating. For example, if you intend to use the filter to limit report results to active items that are assigned to the development team, you might call the report filter **Active Items with Development**.
5. In the **Filter description** field, enter a description that summarizes or explains the filter's conditions.
6. In the **Access** drop-down list, set the access level for the report filter. **Public** filters are available to all users; **Private** filters are only available to the current user.
7. In the **Filter Conditions** group box, define the conditions that the filter will use to limit report results. For guidance on working with basic search conditions, refer to [Creating Search Filters Using Basic Conditions \[page 183\]](#)

8. Click **Save filter**. The new filter appears and it is now available to use when you select (**Filters**) from the **Fields** drop-down list in the **Field Specification** portion of a report's search filter or a feed's search criteria.

Editing Report Filters

To edit an a report filter:

1. In the side menu, click **Reports**.
2. Click **Report Filters**. A list of available report filters appears in the right pane.
3. Use the **Search** field to find a report filter by name. Use the **Author**, **Application**, and **Access** facets to refine the list of report filters that are displayed.
4. Click anywhere on a report filter row to open a read-only view. Click the pencil icon to edit the report filter. The **Edit filter** dialog box appears.
5. Make any necessary changes to the report filter. When you change an existing report filter, lists of reports and feeds that currently use the filter are displayed at the bottom of the dialog box. These provide an immediate view into the impact of changing the filter. Click a report name to launch an impacted report.
6. Click **Save filter** to save your changes. The filter is updated and any report or feed that uses the filter will now use the new search criteria.

Removing Report Filters

To remove a report filter:

1. In the side menu, click **Reports**.
2. Click **Report Filters**. Your report filters are listed in the right pane.
3. Use the **Search** field to find a report filter by name. Use the **Author**, **Application**, and **Access** facets to refine the list of report filters that are displayed.
4. Click anywhere on a report filter row to open a read-only view. Click the trash icon to delete the report filter. The **Delete filter** dialog box appears.
5. Lists of reports and feeds that currently use the filter are displayed at the bottom of the dialog box. These provides an immediate view into the impact of changing the filter. Click a report name to launch an impacted report. Otherwise, if you are sure you want to delete the filter, click **Delete filter**. The filter is deleted. Associated reports and feeds will no longer use the filter as part of their search criteria.

Using SLA Reports in Work Center

Service Level Agreements (SLAs) define the level of service that an organization commits to its customers. Projects can be associated with a specific SLA, allowing you to track SLA compliance for items submitted in that project.

SLA reports enable you to review and monitor how you and your organization respond to items in comparison to customer commitments. SLA rules and metrics are defined by an administrator.



Important: SLA reports show data only if projects have SLAs defined for them. Additionally, for Service Support Manager installations, a service request must have been associated with each of those projects in Service Request Center.

SLA Report Types

The following information applies to using SLA in both SBM and SSM. Note that SBM SLA reports are based on projects, while SSM SLA reports are based on service requests.

Past Performance Reports

Past Performance reports provide historical information. By default, data for all projects or service requests from the last six months is displayed, with a performance threshold of 80%. This means that over the last six months, an overall SLA "passing" performance level of 80% or greater (with an overall "violation" performance percentage of less than 20%) is considered acceptable for normal operation. You can change this filter, as described in [Running Predefined SLA Reports \[page 30\]](#).

The following Past Performance reports are available:

- **Aggregate Performance**—Measures the aggregate performance level of all projects or service requests included in the report. This is the percentage of items that are within the acceptable range of the performance threshold, which is specified in the Report Filter (see above). The red part of the gauge represents the percentage that is under the performance threshold; the green part represents the percentage that meets or exceeds the performance threshold. The goal is for the needle to point in the green area.
- **Performance Breakdown**—Shows each project or service request name, the SLAs associated with each project or service request, the SLA threshold specified by an administrator during the definition of the SLA, and the actual SLA performance. The SLA performance value is displayed in red if it falls into the unacceptable range.
- **Violations by project/service request**—Shows the project or service request names and the number of items for each project or service request that are in violation of the SLAs defined for it. You can click a bar in the chart to drill down to the next chart.
- **Violations by SLA for project/service request: "*project/service request name*"**—Shows the number of items that are in violation of each SLA defined for the project or service request. By default, the report format is a chart; click a bar in the chart to drill down to the next report. Click the **Listing report** button to change the report format.
- **Violations for SLA: "*SLA name*"**—Lists each item that is in violation of the SLA. Click the link in the **Item Id** column to open the item. To close the item and return to the report, click the **X** at the top right corner of the item.

Current Risk Reports

Current Risk reports are calculated using the time and risk values defined for each SLA. By default, data for all projects or service requests is displayed in the reports. You can select specific projects or service requests to monitor and specify that only data for items

you own is displayed. You can change this filter, as described in [Running Predefined SLA Reports \[page 30\]](#).

The following Current Risk reports are available:

- **Risk Projection**—Shows the number of items from all projects or service requests included in the report that are in violation of or are at risk of violating the SLAs associated with them. Violations and risk categories are stacked horizontally in the bar in different colors; click one to view the corresponding chart on the right.
- **Violation/Risk Category items by project/service request**—Shows the projects or service requests and the number of items for each project or service request that are in violation of or at risk of being in violation of the SLAs defined for it. The name of the chart changes depending on what is clicked in the Risk Projection report. You can click a bar in the chart to drill down to the next chart.
- **Violation/Risk Category items by SLA for project/service request: "project or service request name"**—Shows the number of items that are in violation of or at risk of being in violation of each SLA defined for the project or service request. By default, the report format is a chart; click a bar in the chart to drill down to the next chart. Click the **Listing** report button to change the report's format.
- **Violation/Risk Category items for SLA: "SLA name"**—Lists each item that is in violation of or at risk of being in violation of the SLA. Click the link in the Item Id column to open the item. To close the item and return to the report, click the **X** at the top right corner of the item.

Running Predefined SLA Reports

To run a predefined SLA report:

1. Select the application from the toolbar, and then expand **Reports** in the side menu.
2. Do one of the following:
 - For SBM, select **Project SLA Past Performance** or **Project SLA Current Risk**.
 - For SSM, select **SLA Past Performance** or **SLA Current Risk**.

The report page also contains a report filter that lets you change the criteria for the reports. You can either apply the criteria to the current report or save the criteria to be used in the next report.

To open the report filter, click the **Define Filter** link on the report page.

- To specify which projects or service requests to include in the report:
 1. Click **Select Service Requests**.
 2. In the dialog box that opens, select a project or service request. Move it to the right to select it or to the left to remove it. To move it, click the plus or minus icon or double-click it. You can also drag a project or service request to the right to select it. To add or remove all projects or service requests, click **Add all** or **Remove all**.
 3. Click **Select** to close the dialog box.

-
- *Past Performance reports only:* To change the date range, click in the date box. From the menu that opens, select a specific date range or click **Date Range** and then select a start date and end date from the calendars. Alternatively, you can type over the date in the **Date Range** box, or click the **Prev** or **Next** arrows to bring the date range backward or forward by six months.
 - *Past Performance reports only:* To change the threshold, type over the number in the **Performance Threshold** box. For example, **75** means that 75% or more of items meeting the SLAs is acceptable, and less than 75% is unacceptable. To raise the expectation, change the number to something higher.
 - *Current Risk reports only:* Select the **Items I Own** check box if you only want to see data that is relevant to items for which you are the primary or secondary owner.
 - Click **Apply** to apply the settings to the current SLA report and close the dialog box. Click **Save Settings** to save the settings to the database so they are applied to the next SLA report you run.

Creating Custom SLA Reports

If you have the appropriate privileges, you can create and run custom SLA reports based on Listing, Distribution, Advanced Distribution, and Summary reports. When SLA fields are enabled, they appear in these reports as selections in columns to display lists, sort by lists, and search filters. The fields are prefixed by "(SLA)".



Note: On-premise customers can translate SLA fields in the *String IDs* system auxiliary table.

To create a custom SLA report:

1. Select the application from the toolbar, and then select **Reports** in the side menu.
2. Click **Create Report**.
3. Select the Listing, Distribution, Advanced Distribution, or Summary report type.
4. On the **Additional Options** page, select the **Show SLA Fields** option. SLA fields now appear as selections where applicable.



Note: Be sure to select this option first before defining your report. Otherwise, any report definition in progress will be cleared and you will need to create the report again.

Chapter 4: Using Custom Reports

The following sections provide guidance for using custom reports. Information about report settings and options is also provided.

- [Creating and Editing Custom Reports \[page 33\]](#)
- [Report Reference \[page 49\]](#)

Creating and Editing Custom Reports

- [Choosing a Custom Report Type \[page 33\]](#)
- [Creating Custom Reports \[page 34\]](#)
- [Previewing Reports \[page 40\]](#)
- [Saving Reports \[page 40\]](#)
- [Including Data from Related Items \[page 43\]](#)
- [Using Calculations in Reports \[page 45\]](#)
- [Sending Links to Reports Through E-mail \[page 47\]](#)
- [Getting JSON Output from Reports \[page 48\]](#)
- [Tracking Report Changes and Deletion \[page 48\]](#)

Choosing a Custom Report Type

SBM provides a range of report types to choose from when creating a custom report. The following questions will help you decide which type of custom report to choose.

What data do you want your report to show?

- **Items assigned to me or someone else.**

Listing reports are most commonly used for this purpose. Refer to [Listing report \[page 49\]](#). Another type of report which is used less frequently is the **Details report**. This report displays all of the item details for an item, instead of limited number of fields that display with the listing reports. See [Details Reports \[page 171\]](#) for more information.

- **How many items are in each state or assigned to each person.**

Distribution reports are used to see how items are distributed across different criteria, such as users or states. See [Distribution Reports \[page 75\]](#) for the different distribution reports that are available.

- **How long items spend in each state.**

Duration reports allow you to see how long items spend in a particular state. For example, you would use a duration report to determine the average time that items stay in a **New** state before they are assigned to a developer for work. For more information, see [Time In State Reports \[page 113\]](#). Another report type, which is less frequently used, is the **State Change Report**. This report calculates the exact time that each item spent in a particular state. See [State Change Reports \[page 174\]](#) for details.

- **The rate at which items are being submitted or closed.**

Trend reports provide historical totals or submittal rates of items over a specified time period. For example, you could use a trend report to look at the size of the backlog of items that have not been closed. This report would allow you to tell over time if you are closing more items than are being submitted. For more information, see [Trend Reports \[page 117\]](#).

- **Data from multiple tables**

Most reports are run across only one primary table; however, both **Multi-Table** reports and **Listing** reports with **Join** conditions enable you to collect data across multiple tables. For more information, see [Multi-Table Reports \[page 66\]](#) and [Including Data from Related Items \[page 43\]](#).

- **Show particular changes made to an item such as changes to particular field**

Change History reports give details as to who performed changes to an item and what changes were performed. For example, you would use a Change History report to find all of the changes made by a particular user. You would set the **User Making Change** to the user name in the Search Filter options. For details, see [Change History Reports \[page 58\]](#).

- **Show items that have been deleted**

Deleted Items reports enable you to see which items have been deleted. These items no longer appear in other types of reports since they are neither active nor inactive. For details, see [Deleted Items Reports \[page 62\]](#).

- **Source control information with a connector such as SourceBridge**

Use the Version Control Actions Report to create reports on data stored in the VCACTIONS table by your version control plug-in. For details, see [Version Control Actions Reports \[page 177\]](#).

Creating Custom Reports

Use the **Create Report** page to create custom reports, such as Listing and Trend reports.



Restriction: The **Create Report** page is available only if you have privileges to create reports.

To create a custom report:

1. Select a report category such as List, Distribution, or Duration depending on your needs.

2. Review the available report types for that category.



Tip: Hover your mouse over the report type name or icon to view a sample image of the report. You can also view alternate versions of the report output by selecting one of the available template types that appear above the sample image.

For example, under **Trend**, hover over the **Backlog** report and click the **Horizontal Bar** template to change the preview image.

The following tables describe the available report types per category, depending on your privileges:

- **List** – Available report types include:

Option	Description
Listing	Return textual lists of items based on the search, display, and sorting options you select. This is the most commonly used report type. For details, refer to Custom Listing Reports [page 49] .
Change History	Search for changes to fields and items, or changes made by specific users, and provide a list of changes made to items. For details, refer to Change History Reports [page 58] .
Deleted Items	Search change history and display when primary items were deleted, and which user deleted the items. For details, refer to Deleted Items Reports [page 62] .
Multi-Table	Query system fields to list items from multiple primary and auxiliary tables. For details, refer to Multi-Table Reports [page 66] .
Transition	Return textual lists of items based on the transition, search, display, and sorting options you select. For details, refer to Transition Reports [page 71] .

- **Distribution** – Available report types include:

Option	Description
Distribution	Summarize two categories of items and display them in tabular or graphical format. For details, refer to Distribution Reports [page 75] .
Advanced	See the numbers of primary items per project, grouped by selected fields. The output can be tabular or graphical. For details, refer to Advanced Distribution Reports [page 83] .
Summary	Perform average, sum, maximum and minimum calculations of certain SBM fields. Summary reports allow more categories than Distribution reports, but results are only textual. For details, refer to Summary Reports [page 89] .

- **Duration** – Available report types include:

Option	Description
Advanced Time in State	Show the amount of time primary items have spent in a collection of states over time using a calendar to measure time. The output can be tabular or graphical. For details, refer to Advanced Time in State Reports [page 95] .
Average Time to State	Show the amount of time primary items take to reach a selected state. The output can be tabular or graphical. For details, refer to Average Time to State Reports [page 101] .
Elapsed Time	Show the amount of time primary items have spent in a collection of states over time using a calendar to measure time. The output can be tabular or graphical. For details, refer to Elapsed Time Reports [page 107] .
Time in State	Show the amount of time primary items have spent in each state. The output can be tabular or graphical. For details, refer to Time In State Reports [page 113] .

- **Trend** – Available report types include:

Option	Description
Estimated Backlog	Provide a comparison of activities completed against activities planned over days, weeks, months, and quarters. The output is a line chart. For details, refer to Estimated Backlog Trend Reports [page 127] .
Trend	Provide historical totals or submittal rates of primary items over days, weeks, months, and quarters. Report results can be displayed in tabular or graphical format. For details, refer to Trend Reports [page 117] .
Backlog	Provide trends of open primary items within a selected time interval. The output can be tabular or graphical. For details, refer to Backlog Trend Reports [page 133] .
Entering a State	Provide trends of primary items entering a selected state within a selected time interval. The output can be tabular or graphical. For details, refer to Entering a State Trend Reports [page 138] .
Open and Completed	Provide open/completed rates of primary items over days, weeks, months, and quarters. The output can be tabular or graphical. For details, refer to Open and Completed Trend Reports [page 143] .

Option	Description
State Activity	Provide trends of primary items entering and leaving a selected state over a selected period of time. The output can be tabular or graphical. For details, refer to State Activity Reports [page 149] .

- **Dashboard** – Available report types include:

Option	Description
Calendar	View date-sensitive items in a calendar format, which enables you to view the timing of items and how they fit into your upcoming schedule. For details, refer to Calendar Reports [page 157] .
Multi-Calendar	View multiple Calendar reports in a single view. For example, you can view all changes, releases, and demand items for the upcoming quarter. For details, refer to Multi-Calendar Reports [page 162] .
Drill Through	Create multi-view reports that allow you to use one main distribution report to drive the other reports. For details, refer to Drill Through Reports [page 166] .
Multi-View	Run an multiple reports at once. For details, refer to Multi-View Reports [page 169] .

- **Other** – Available report types include:

Option	Description
Details	See selected field sections for items, providing a more comprehensive view than Listing reports. For details, refer to Details Reports [page 171] .
External	Specify any URL and store it as a report, applying SBM privileges. For example, you can specify a URL for a report created in an external reporting tool, such as Crystal Reports®. For details, refer to External Reports [page 174] .
State Change	See state changes for primary items. You can use this report to calculate the time items spend within a state. For details, refer to State Change Reports [page 174] .
Version Control Actions	(on-premise customers only) Search and view version control history records and file associations for primary items. You must have specific privileges to use this report type. For details, refer to Version Control Actions Reports [page 177] .



Tip: Enter the name or description of one or more report types in the **Search report type** field to return a list reports that match your search string. To return all report types, enter an empty search string. The results are returned in the **Search Results** tab.

3. Click the report name, icon, or the sample image to begin creating a report using the selected template.
4. After providing content, sorting, and additional options for your report, you can:
 - **Preview the report**
View your results before saving the report. After previewing your results, click **Back** to modify the report, or click **Save** to save the report. For details, refer to [Previewing Reports \[page 40\]](#).
 - **Save the report**
For details, refer to [Saving Reports \[page 40\]](#).
 - **Cancel**
Close the report form without saving any changes.

Selecting a Report Item Type

The report item type indicates the primary table (also referred to as an application) or auxiliary table that contains data that will be returned by the report. Each report can have only one table selection.

Once you select the primary or auxiliary table for a report, the options on the report form may change to accommodate your selection.

Selecting a Report Project

The project you select when creating a report determines which items are returned in your report, where the project is saved, and which users can access your report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For most report types, you can override project settings in the **Search Filter** area for reports using basic conditions. You can override which project is queried for information by selecting the *Project* field in the **Field Specification** area and choosing specific projects to query. The information returned by the report is based on the projects selected in the **Field Specification** area, but the location and privilege checking for the report is based on the project selected on the report form.

The **Report Project** list can contain:

- A full list of projects that you have privileges to create a report against. In this case, the projects appear in hierarchical order.
- A list of preferred projects, if you specified them in your user profile.
- If you are viewing a full project list, the Base Project for your system is at the top of the project list. If you do not have privileges to create reports at the Base Project level, the Base Project is listed in parentheses.

To select a project for your report:

1. From the **Report Project** list, select the project to create your report against.
2. If the project you are looking for is not in the list, you may be viewing your preferred project list. Click **Show All Projects** to view the full list of projects you can view. When the full project list is displayed, click **Show My Projects** to view your preferred projects.
3. Select the **Include Items from Sub-projects** check box located in the Search Filter area to include sub-projects of the selected project in the query. If one of your preferred projects is a parent project but its sub-projects are not in your preferred projects list, sub-projects of the parent are searched if this check box is selected.



Note: If you select this option, the **Update All Checked** button appears in the report results, regardless of which report project you select. If you do not select the **Include Items from Sub-projects** option, then the **Update All Checked** button only appears if you have privilege to mass transition items in the selected report project. The **Update All Checked** button is not available for users with External or Occasional User product access in either scenario.

Selecting Fields to Display as Columns in the Report

You can select fields to appear as columns in your report results. The fields you choose to display are different than those you use to query data in the system, but they provide information about the items returned by the report.

For example, you can create a search specification that uses the *Owner* field to limit the set of items to a particular set of users. You can then choose the *Owner* field as a display column so you can easily see which user owns each particular item returned in the report.

In the **Select Columns to Display** box, the left pane contains all fields available to display in your report. The right pane contains the default selections determined by your administrator.

By default, the width of field columns is set automatically based on the size of your browser window and the number of fields displayed on the report. You can force the column for a selected field to be larger or smaller by specifying an absolute width in pixels.

To select fields to appear in your report:

1. Select one or more fields in the left pane of the **Select Columns to Display** box, and then click the right arrow button to move the fields to the right pane.
2. Arrange the order in which fields display by using the **Up** and **Down** arrows.
3. To change the display width of a field, select a field in the left pane, and then click the **Set Custom Field Widths** link to specify a display width in pixels for the field. You can then move the field to the right pane.

Previewing Reports

After you complete a report form, you can preview report results and modify the report criteria as needed.

To preview a report:

1. After providing content, sorting, and additional options for your report, click **Preview**.
2. To modify the report options, click **Back** to return to the report form.
3. Modify report options, and then click **Preview** again.
4. When you are satisfied with your report results, click **Save** to open the **Save As** form.



Note: If you are modifying an existing report, the **Save As** button may be available. Click this button to save the report as a new report. You must provide a unique title for the new report.

Saving Reports

By default, the primary table for the application you are using is selected in the **Report Item Type** drop-down list when you save the report. Projects in that application are listed in the **Report Project** list. Select a project where the report will be stored.

For reports that can be created against auxiliary tables, those auxiliary tables you have privileges to create reports against are also listed.

Field	Description
Report Item Type/ Saving Report in Table	<p>For reports created against auxiliary tables, the table selected from the Report Item Type drop-down list on the report form is shown. To change the report table, click Back, and then select a new table from the Report Item Type drop-down list.</p> <p>For and For Multi-Table, Multi-View, External, and Drill Through reports, specify the Report Item Type, which determines a project or auxiliary table to use for storing the report.</p>
Report Project/ Saving Report in Project	<p>For reports created against primary tables, this shows the project selected on the report form. To change the report project for most report types, click Back, and then select a new project from the Report Project list.</p> <p>For Multi-Table, Multi-View, External, and Drill Through reports, select the project that determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.</p>
Title	<p>Type a name for the report. This field is required to save a report. The report title displays at the top of the Item List pane when you run the report. If you save a Search as a Listing report or a Global Search as a Multi-Table report, the title is prepended with "Search Results." You can keep this wording as part of your title, modify it, or remove it.</p>
Privilege Category	<p>Depending on your privileges, up to four categories may be available. Privileges also determine which report levels are available when you create reports and which users can access the different levels of reports. Private and guest are examples of privilege categories. Select a privilege category from the list.</p>
Add Link to Folder	<p>This option enables you to add a link to your report in the selected folder. Depending on your privileges, favorite, public, and Knowledge Base folders are available in the drop-down list. If you specify a favorites folder, the folder location is a personal setting and does not apply to all users who run the report. If you specify a public or knowledge base folder, users who have privileges to view items in that folder and appropriate report privileges can view the report link.</p>
Comment	<p>Text added here does not display on report results, but is available when you view the Save As page for a report. This enables you to provide details about why the report was created or other information.</p>

Field	Description
Reference Name	<p>The Reference Name is required when you are planning to refer to this report from another application. After entering a name and completing the form, click Reference Link on the following dialog to access the URL which includes the reference name. You paste this URL into the external application that you are editing in SBM Composer.</p> <p>For detailed information on referencing a report from another application, see <i>Referencing a Report</i> in the <i>SBM Composer Guide</i>.</p> <p>This field is disabled for Private reports, since these would not be referred to by external applications. The field is only available to administrators with full access to the system or to managed administrators with privileges to deploy or promote applications to this host or export applications from this host.</p>
Back	Click this button to return to the report form and modify report options.
Finish	Click this button to save your report. After successfully saving your report, you can run or edit your report.

The following options are also available on the **Save As** report form when you edit an existing report:

Field	Description
Author	Displays name of the user who created the report.
Created	Displays the date the report was created.

The Saved Report Page

After you save your report, a page opens and confirms that your report has been successfully saved. On this page, the following information and actions are available:

Field	Description
Report Name	Displays the name of the report.
Project in which this report is saved	For reports created against primary tables, displays the name of the project in which the report is saved.
Saving report in Table	For reports created against auxiliary tables, displays the name of the table in which the report is saved.

Field	Description
Reference Link	<p>Click to display the URL which you can copy into SBM Composer to reference the report from another application or embed the report in another application.</p> <p>For detailed information the procedure for referencing a report from another application, see <i>Referencing a Report</i> in the <i>SBM Composer Guide</i>.</p>
Run Report	Click this button to run the report. Report results appear in the content pane.

Including Data from Related Items

You can create a report that pulls data from related items in another application or auxiliary table. This type of report requires that the primary application has a relational field that points to the other application or auxiliary table. The results display data from secondary items that the primary item references through relational fields.

For Listing reports, the relational fields can be either single or multi-relational fields, and they reference an item in another applications or auxiliary data. Only *Single Relational* fields are available for joins in Distribution reports. An example of a *Single Relational* field is the *Company* field in an application, which allows you to select from available companies that are entered in the Company auxiliary table. The company entry includes additional information about the company such as contact info and contract information.

The spanning across the different tables based on relational fields is created using a join condition. Join conditions define the data to display and the data to use as filters for the report.

The join conditions help address many business use cases. For example, you can create a report that displays all issues for companies with a specific support agreement, such as a Platinum service plan. In an IT setting, you may have problems that are spawned from issues. You can use a join condition to show all high priority issues which have problems that have not been assigned.

There are two ways that you can use the data from the related items. First, you can include the data in your report. Second, you can filter the report results based on the data. The following two bullets explain how you could create reports to include data or filter results.

- **Including Data**

You can create a Listing report that displays contact information of the *Company* that is associated with all requests marked as High Priority. To do this, you would choose to relate the *Company* field in the Listing report. When you create a report, click **Add** to add a join condition. In the **Add/Modify Join Condition** dialog box, select the *Company* field and click **Save**. In the **Select Columns to Display** section, select the Company table, and then select which contact information fields you want to display from the Company record.

You could also display incident types that have related issues, distributed by developer. To do this, you would create a distribution report against the Incidents

table, and relate the *Escalated Issue* relational field, which points to the Issues table. You could then select *Incident Type* for the row and *Developer* for the column.

- **Filtering Report Results**

You can run a Listing report that displays all items submitted by companies that are considered `Platinum`. To do this, you would choose to relate the Company field when creating the Listing Report by adding a join condition. You would choose the *Company* field and select **This related item filters the report**. You would set the condition **Level = Platinum**. The results of the report would display only items that are connected with Companies that are set to *Platinum*.

In the distribution report example, you could select **This related item filters the report** and specify that only issues where **severity = high** are counted.

Currently, **Including Data from Related Items** only works with Listing and Distribution reports.



Tip: For SQL experts, the related data functionality is similar to using a SQL Join condition for a Search Filter.

Adding Join Conditions

The **Add/Modify Join Condition** dialog box enable you to select relational fields that connect to other applications or auxiliary tables. You can pull in the additional data from these sources into your report. In addition, you can choose to filter the report results based on the values in these related items.

The **Add/Modify Join Condition** dialog box displays after clicking **Add** on the Create or Modify report screen.

To set join conditions:

1. Select a relational field from the drop-down list. The relational fields that are available are provided by the application the report is based on.
2. You can optionally change the display name of the join condition. For Listing reports, using unique display names helps to distinguish multiple join conditions from the same application or auxiliary table.



Note: The display name appears in the **Solution table** drop-down list below the join condition.

3. To limit report results to only items that include data in this relational field, select **This related item filters the report results**.

-
- To limit report results based on data in the related item, select **This related item filters the report results**, and then define a filter. The filter behaves similar to the **Search Filter** you define when you create a report.



Note: You must have privileges to create/modify a report in the referenced table to add or modify a search filter. If you attempt to edit a pre-existing report which contains a join to a table which you do not have privileges to, you are limited as follows:

- You cannot modify the existing join. You can either delete the join or leave it alone.
- For Listing reports, you cannot choose to display additional columns for the table. The Alias name is disabled in the drop-down. You can only change the display of existing columns.

Using Calculations in Reports

SBM allows you to perform calculations and functions on particular field types in **Listing**, **Multi-Table**, **Version Control Actions**, and **Summary** reports. These calculations appear in the report but are not stored in the database.

The following types of calculations and functions are available:

- Two-operand calculations
- SQL aggregate functions that involve one field

Use the following SBM field types for calculations and functions:

- Numeric* fields
- Date/Time* fields
- Binary/Trinary* fields
- Summation* fields

Two-Operand Calculations

Perform two-operand calculations in **Listing** and **Multi-Table** reports. You can also perform calculations on the Closing Date/Time and Initiating Date/Time in **Version Control Actions** reports.



Note: The DBMS (database management system) performs the calculations, so SBM cannot determine whether your data is suitable for the calculation. The DBMS cannot handle division by zero and reports that this calculation will fail. Also, *Date/Time* calculations that result in a negative number may not appear in the report. Any calculation that results in an underflow or overflow causes an error and be reported by the DBMS. Unfortunately, if the error is a result of the data being used for the calculation, it is unlikely that a DBMS will pinpoint the offending record or data.

Calculations in Listing and Multi-Table Reports

In **Listing** and **Multi-Table** reports, calculations are specified in the **Add Columns of Calculations** section of the report form. Perform the following calculations:

- Add the values of two fields, a single field and a *Date/Time* keyword, such as *now* or *startof_thisweek*, or two *Date/Time* keywords.
- Subtract the value of one field from another, a single field and a *Date/Time* keyword, or two *Date/Time* keywords.
- Divide the value of one field by the value of another, a single field and a *Date/Time* keyword, or two *Date/Time* keywords.
- Multiply the values of two fields, a single field and a *Date/Time* keyword, or two *Date/Time* keywords.

To determine how long particular items have been active in the system, specify the following parameters in the **Calculated Fields to Display** section:

Time Open = Close Date/Time - Submit Date/Time

When you run the report, the time representing how long items have been active appears in the Time Open column **d hh:mm:ss** format. This column is empty for items that have not been closed.

To determine how long items have been in the current state, specify the following parameters in the **Calculated Fields to Display** section:

Time in Current State = Now - Last State Change Date

When you run the report, the time representing how long items have been in the current state appears in the Time Open column **d hh:mm:ss** format.



Note: For any calculation you create that begins with a *Date/Time* keyword (like *now* or *startof_thisweek*), you must ensure that the keyword is the first token in the expression. For example, the following expression:

Submit Date = (now Minus 30)

Should be specified as (without the parentheses):

Submit Date = now Minus 30

Single-Field Functions

Perform single-field functions (SQL aggregate functions) in **Summary** reports. Calculations are specified in the **Add Columns of Calculations** section of the report form.

Perform the following functions:

- **AVG (Average)** – Average all values in a field.
- **MAX (Maximum)** – Return the maximum value in a field.
- **MIN (Minimum)** – Return the minimum values in a field.
- **SUM (Sum)** – Return the sum of all values in a field.

For example, to determine the last time an item was submitted into a particular project, specify the following parameters in the **Calculated Fields to Display** section of the report form: *Last Item Submitted = MAX of Submit Date/Time*. When you run the report, the date and time the last item was submitted into the queried project appears in the Last Item Submitted column.



Note: The DBMS (database management system), which performs the calculations, ignores NULL data in the calculation. This characteristic can affect averages if data is absent since only fields with values are included in the calculation, but all records are counted in the report for use in the denominator.

Microsoft SQL Server users might experience difficulties performing averages on date fields. To avoid errors, only perform date averages on a small number of records.

Sending Links to Reports Through E-mail

If you are viewing a report that was saved and is not a private-level report, you can use e-mail to send a link to the report. You can also access your external e-mail client to send a report link. Only SBM users who have privileges can run the report, however.

For **Multi-View** reports, you can send an e-mail for single reports in the **Multi-View** report.



Note: This feature is not available to users with External User or Occasional User access, or for **External** reports.

To send a report link through e-mail:

1. Run a saved report that is a non-private level report.
2. Click the **E-mail Report** link. Depending on the form you are using, this link may be in the **Actions** drop-down list or may be an e-mail icon on the form. The **Send E-mail** dialog box opens with the **From** field automatically populated with your user name.
3. In the **To**, **Add CC**, or **Add BC** fields, type e-mail addresses or all or part of a user or group name to search for potential e-mail recipients, and then select it from the results list.
4. Select a priority for your e-mail message from the **Priority** drop-down list. Depending on the recipient e-mail client and the type of e-mail server used by your SBM system, the priority appears in the e-mail message sent from SBM. The display of the selected priority depends on the receiving e-mail client; for example, in Microsoft Outlook, Highest and High priority selections appear as an exclamation point and; in Mozilla, the selected priority appears as text. Available priority selections are Lowest, Low, Normal, High, and Highest. The default priority selection is Normal.
5. In the **Subject** box, a default subject is provided, but you can provide your own subject.
6. In the **Message** box, type a message to accompany the report link.
7. Click **Reset** to clear all information you provided in the **Send E-mail** dialog box.

8. Click **Send E-mail** to send the message or click **Cancel/Close** to close the **Send E-mail** dialog box.
9. The **Close This Window** button appears after you click the **Send E-mail** button. Click this button to close the **Send E-mail** dialog box.

Getting JSON Output from Reports

You can output SBM report data to JSON format. This enables you to create custom visualizations for reports, such as graph widgets or tables.

JSON output is available for all report types, except Drill Through, Multi-View and External.

Using Custom Report URLs

Use this method to obtain an URL that you can include in your custom visualization.

1. Run a report.
2. Copy the report URL from the **Actions** list, then paste it into an editor.
3. Replace the following parameters:

```
&template=reports/template
```

With:

```
&template=reports/jsonoutput
```

URL example:

Before:

```
http://servername/workcenter/  
tmtrack.dll?shell=swc&ReportPage&Template=reports/list&reportid=120
```

After:

```
http://servername/workcenter/  
tmtrack.dll?shell=swc&ReportPage&Template=reports/jsonoutput&reportid=120
```

Using the JSON Output Template

Use this method to create a report that returns JSON each time it is run.

1. Create or edit a listing report.
2. Select the **Additional Options** page.
3. From the Optional HTML Template list, select the jsonoutput.htm template.
4. Save your changes.

Tracking Report Changes and Deletion

Users with Global Administration privilege can use the **Deleted Items** and **Change History** reports to view a list of deleted reports and report changes that were made by users in a given time period.

-
- The **Change History** report is useful when you want to track the history of report design changes including who made the changes, what was changed, and when the changes were made. You can use the search filter to narrow the results by one or more users.
 - The **Deleted Items** report is useful when you want to track who deleted a report and when it was deleted. There are no search specification options, but each deleted report within the specified date range appears in the report results.

When you prepare the report definition, instead of selecting a primary or auxiliary table in the **Report Item Type** drop-down list, select **Reports**. You can then customize the columns that appear and set the desired date range.

Report Reference

The following sections contain information about report settings and options for all custom report types.

- [List Reports \[page 49\]](#)
- [Distribution Reports \[page 75\]](#)
- [Duration Reports \[page 95\]](#)
- [Trend Reports \[page 117\]](#)
- [Dashboard Reports \[page 157\]](#)
- [Other Reports \[page 171\]](#)

List Reports

List reports return textual lists of items based on the search, display, and sorting options that you select. By default, the list of items returned by the report opens in the **Item List** pane. You can then click an item link to view detailed information in the **Item Details** pane.

- [Custom Listing Reports \[page 49\]](#)
- [Change History Reports \[page 58\]](#)
- [Deleted Items Reports \[page 62\]](#)
- [Multi-Table Reports \[page 66\]](#)
- [Transition Reports \[page 71\]](#)

Custom Listing Reports

Listing reports provide a list of primary or auxiliary items that meet your report criteria. You can define the columns you want to view in the Item List, and if dynamic column sorting is enabled by your administrator, sort the information in these columns by clicking the column headers.

Key Benefits

- List format offers easy navigation and drill-down capabilities.

- Enables you to repeat searches, returning a listing of all items based on the filter that you define.
- Listing reports let you search data found in related items using Join conditions.

SLA Fields

If you have the appropriate privileges, you can select SLA fields in the following areas as you define the report:

- **Content:** Select Columns to Display
- **Search Filter:** Use Basic Conditions
- **Sorting:** Sort by, Then by

To enable SLA fields in the report, see [Additional Listing Report Options \[page 52\]](#).

Content Options for Listing Reports

The following options are available in the Content area for **Listing** reports:

- **Report Item Type**

Contains the primary table for the selected application and any auxiliary tables for which you have privileges. Select the table that contains the information for the report.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Joins**

Refer to: [Adding Join Conditions \[page 44\]](#).



Note:

- For information on why you would use the join condition, see [Including Data from Related Items \[page 43\]](#).
- Join conditions are not supported with some custom templates, such as `editablegrid.htm`. Selecting a non-supported template will disable join conditions.
- The **Add** button may be disabled due to the following conditions:
 - The application has no relational field.
 - All of the relational fields point to restricted tables which you do not have privileges to view tables or created reports.
- Existing Join conditions can be modified or deleted by selecting them and clicking **Delete** or **Change**.

- **Select Columns to Display**

Refer to [Selecting Fields to Display as Columns in the Report \[page 39\]](#).


Search Filters for Listing Reports

Search filters enable you to narrow your search for items. Depending on your privileges, you can define basic conditions or Advanced SQL Conditions.



Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <i>severity in Critical</i>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Use Basic Conditions	Enables you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .

Option	Description
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .


Sorting Options for Listing Reports

Sort options enable you to sort search results based on values in selected fields. For example, you can sort items by the state they are in or by their active/inactive status. You can also choose to sort results by project hierarchy and enable dynamic column sorting.



Tip: The fields you select for sorting are independent of the fields you select to display. For best results, you may want to display the fields you choose for sorting. For details, refer to [Selecting Fields to Display as Columns in the Report \[page 39\]](#).

The following sorting options are available:

Option	Description
Sort by/ Then by	From the drop-down lists, select the fields for which you want to sort report results based on field values. To specify the sort order for each field, select Ascending or Descending from the drop-down list next to the field.
Always Perform a Primary Sort by Project	If you include multiple projects in the report search filter, select this check box to sort items by project hierarchy. If you clear the Always Perform a Primary Sort by Project check box and do not provide other sorting criteria, items are listed randomly.
Enable Dynamic Column Sorting	Select this check box to display column headers as links. Click to sort the data in ascending or descending order. Your administrator determines if this option is available.  Tip: To sort projects alphabetically rather than hierarchically, add the <i>Project</i> field to the Select Columns to Display box on the Content area of the form, clear the Always Perform a Primary Sort by Project check box, and then select the Enable Dynamic Column Sorting check box. After running the report, click the Project column to sort the items alphabetically by project.

Additional Listing Report Options

The following options are available in the Additional Options area of the **Listing** report form. These options can be considered "advanced" report options.

- **Add Column of Linked Data**

The check boxes in this section enable you to view links to files, URLs, notes, and item links attached to items returned in the report. An Associated Attachments column appears in the report when at least one of the following check boxes is selected:

- **Include Linked Files From Attachments** – Select this check box to display links to any files attached to items. Links only display if you have privileges to view attachments.
- **Include Linked URLs From Attachments** – Select this check box to display any URLs attached to items. Links only display if you have privileges to view attachments.
- **Include Linked Notes** – Select this check box to display any notes attached to items. Links only display if you have privileges to view notes.
- **Include Linked Items** – Select this check box to display any links to other items associated with the item being viewed. Click the item link to view the item in the **Item Details** pane. Links only display if you have privileges to view the linked item.

- **Add Columns of Calculations**

You can include calculations on *Numeric*, *Binary/Trinary*, and *Date/Time* fields in your report results. The calculations available are addition, subtraction, multiplication and division. For details, refer to [Calculations in Listing and Multi-Table Reports \[page 45\]](#).

To add a calculation to a report:

1. In the **Column** box, type the name that will appear as the Column Header in the report.
2. In the first calculation box, select a field that will serve as the first operator from the drop-down list.
3. Select an operand from the next list.



Note: Date fields can only be subtracted. Multiplying, dividing, and adding date fields will yield an error.



Note: For any calculation you create that begins with a *Date/Time* keyword (like *now* or *startof_thisweek*), you must ensure that the keyword is the first token in the expression. For example, the following expression:

Submit Date = (now Minus 30)

Should be specified as (without the parentheses):

Submit Date = now Minus 30

4. In the second calculation box, select a field that will serve as the second operator from the drop-down list.
5. Click **Add New Calculation** to add another calculation, if desired.



Tip: For *Date/Time* fields, click the **Date/Time Keywords** link to select a *Date/Time* keyword, such as *Now* or *Startof_NextWeek*, for your calculation.



Important: Certain calculations are not possible, such as multiplying, dividing or adding dates or *Date/Time* Keywords. Invalid calculations will result in an error when you run the report. The errors may prevent the report from running at all, resulting in the following message:

```
An error occurred while processing the last request.
```

```
The error was:
```

```
Database exception in ....
```

- **Display Options**

You can choose to hide project titles, remove line breaks from certain Text fields, add a footer, and more. The following display options are available:

- **Hide Project Titles**

Select this check box to prevent the project hierarchy headers from displaying on the report. You must select this check box if you select the **Always Perform a Primary Sort by Project** check box.

- **Remove line breaks from memo/text fields**

Select this check box to remove line breaks from *Text* and *Memo* fields in the report. This option is useful if you plan to export the report data to another application, such as Microsoft Excel.

- **Show SLA Fields**

If you have the appropriate privileges, select this check box to enable SLA fields to appear as selections in columns to display lists, sort by lists, and search filters. The fields are prefixed by "(SLA)".



Note: When you select this option, any report definition in progress will be cleared and you will need to create the report again.

- **Footer**

Text added here appears as a footer on the report results page. If you save a **Basic Search** or **Advanced Search** as a report, your search criteria is added to the **Footer** box on the report form by default. The footer is limited to 255 characters (bytes).



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence: `<Some Text>`.

- **Font Size**

Select a font size from the drop-down list to override the default font size.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting Export to Microsoft Excel), and `masselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.



Tip: Select the `editablegrid.htm` template to display results in a grid view. This enables you to update multiple items at once from the results page.



Note: Join conditions are not supported with all templates. Selecting a non-supported template will disable the join condition.

Listing Report Results



Listing reports return a list of items based on your report criteria.

By default, the list of items returned by the report opens in the **Item List** pane. You can then click an item link to view detailed information in the **Item Details** pane.

Images added to *Text* fields are shown in each row. You can collapse each row to hide images.

Result Options

The following information and options appear in the **Item List** pane for the default **Listing** report view.


Field	Description
Sorted by	Indicates the sort order specified on the report form or by clicking the column headers that appear as links if dynamic column sorting is enabled. The arrows indicate if the data is sorted in ascending or descending order. If you did not specify sort order when you create a report for primary items, the report by default is sorted by project hierarchy first, and by item ID in ascending order. A default sort order is not provided for reports created for auxiliary items, but the sort criteria appears as specified on the report form or by clicking the column headers that appear as links.
Project Hierarchy (For Primary Item Reports)	The project hierarchy is included as column headers if you did not select the Hide Project Titles check box on the report form. The project hierarchy is provided for each project in the item list, and primary items that match the report search parameters are listed in the project in which they reside. Projects in the hierarchy that do not have items that match the criteria do not display.
Dynamically Sortable Columns	<p>Enable Dynamic Column Sorting check box on the Listing report form. Click a column label to sort the field data in ascending or descending order. If items from multiple projects are listed, the sorting applies to all projects.</p> <p> Note: Your administrator can disable dynamic column sorting.</p>
Items	The fields that display for each item depend on the selections made in the Select Columns to Display area on the Listing report form. The first field always appears as a link, which you can click to view detailed information about the item in the Item Details pane. To create a link to the item in a folder, select the check box to the left of the item and click the Create Link In button at the bottom of the page.
Details	<p>Click this button to view detailed information about all of the items listed in the pane. To return to the Item List pane, click the Listing button.</p> <p> Tip: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.</p>

Using the Editable Grid

You can create a Listing report with the Editable Grid report template, which will open the report results in a grid format and enable you to update multiple items at once. If you use a different Listing report template, you can still click the **Use Editable Grid** link to open your report in the Editable Grid. Once you have made your updates, click the **Back to Listing** link to return the **Item List** pane.

The **Use Editable Grid** link may be located in the **Actions** menu or on the report results page.



Note: The **Use Editable Grid** link is not available for Listing reports included in Multi-View reports. Click the zoom-in icon () on an individual Listing report to expand the report to the full pane and enable the Editable Grid.

Filtering Gridlist Results


If you created a Listing report with the Gridlist report template, you can use column filtering to narrow your report results. Depending on the type of field, you can:

- Perform a simple keyword search for *Text* fields
- Choose a value for selection-type fields such as *Single Selection*, *Binary/Trinary*, and *User*
- Specify a range for *Numeric* and *Date/Time* fields

You can apply multiple filters to your results.

Join Condition Results

If the report includes a join condition, the display of the results has some differences from a normal listing report.

An additional column appears which allows you to choose which item to display. Display a related item by clicking  and choosing the related table where the item is located.

The report results may contain multiple entries for a particular item. This is due to the item containing multiple values in the relational field that is selected for the join condition. The report treats each selection in a multi-relational field as a positive result for the filter.

For example, if you have included linked Change Requests in your join condition and the DEF000001 has a multi-relational field with change requests CHG000002, CHG000003, and CHG000004 selected, your results will include three entries for DEF000001. Each entry corresponds to a different change request. If you select to display the related item, the item corresponding to the entry will display.

Item ID (Defects)	Item ID (Change Requests)
DEF000001	CHG000002
DEF000001	CHG000003
DEF000001	CHG000004

Data that you do not have privilege to view will appear as *****. This is due to you not having privileges to view the data in the related table. If you attempt to modify the

report, you will not be able to modify or add join conditions to a table which you do not have privileges to.

For more information on join conditions, see [Including Data from Related Items \[page 43\]](#).

Change History Reports

Change History reports display changes made to primary items as they move through the workflow and to auxiliary items as they are updated and deleted. **Change History** reports allow you to search for changes to items based on the type of action performed on the items, the fields that changed, the user who changed the items, and when the items were changed.

Change History reports can only be created against one project at a time.

Users with Global Administration privilege can use the **Change History** report to view a list of report changes that were made in a given time period. To view change history for reports, select **Reports** as the **Report Item Type** instead of a table name in the report definition.

Content Options for Change History Reports

The following options are available in the Content area for **Change History** reports.

- **Report Item Type**

Contains the primary table for the selected application and any auxiliary tables for which you have privileges. Select the table that contains the information for the report.

To view change history for reports that users have executed, select **Reports** instead of a table name in the report definition. Note that the **Reports** option only appears in the **Report Item Type** drop-down list if you have Global Administration privilege.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Select Columns to Display**

Select fields to display in your report results. The available fields are *Action Type*, *Changed Value*, *Item Changed*, *New Value*, *Prior Value*, *Timestamp of Change*, and *User Making Change*. You can also rearrange the order in which these fields appear in the report.

- **Set Custom Field Widths**

By default, the width of field columns is set automatically based on the size of your browser window and the number of fields displayed on the report. You can force the column for a selected field to be larger or smaller by specifying an absolute width in pixels.

To change the display width of a field, select a field in the left pane, and then click the **Set Custom Field Widths** link to specify a display width in pixels for the field. You can then move the field to the right pane.

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as `Minus 5` or `Plus 5` (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as `Minus 5` or `Plus 5` (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

Only items or reports that experienced a change between the start date and the end date are returned in the report.


Search Filters for Change History Reports

Search filters enable you to narrow your search for items. Depending on your privileges, you can define basic conditions or Advanced SQL Conditions.



Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <i>Severity in Critical</i>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Use Basic Conditions	Enables you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .

Sorting Options for Change History Reports

Sort options enable you to sort search results based on values in selected fields. For example, you can sort items by the user who made changes to items.



Tip: The fields you select for sorting are independent of the fields you select to display. For best results, you may want to display the fields you choose for sorting. For details, refer to [Content Options for Change History Reports \[page 58\]](#).

The following sorting options are available:

-
- **Sort by/Then by** – From the drop-down lists, select the fields for which you want to sort report results based on field values. Fields available for sorting are *Action Type (Grouping only)*, *Changed Value*, *Item Changed*, *Timestamp of Change*, and *User Making Change*.
 - **Ascending / Descending** – Select one of these options for each field to specify its sort order.

Additional Options for Change History Reports

The following options are available in the **Additional Options** area of the **Change History** report form. These options can be considered "advanced" report options.

- **Remove line breaks from memo/text fields**

Select this check box to remove line breaks from fields such as Prior Value and Change Value. This option is useful if you plan to export the report data another application, such as Microsoft Excel.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting Export to Microsoft Excel), and `masselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.


Change History Report Results

Change History reports return a line for each change made based on the report criteria. Each primary, auxiliary item, or report that changed may contain multiple entries in the report depending on the changes made and the report criteria.

The list of item history changes displays the fields you selected when you create or modify a **Change History** report. If you did not select specific fields, the *User Making Change*, *Prior Value*, and *Action Type* fields display. If you are creating a report for report change history, *User Making Change*, *Prior Value*, and *Changed Value* fields display.

When you run the report, the first field selected to appear in the report form shows as a link. For example, if the *User Making Change* field is selected first, then the user name appears as a link. Click the link to display detailed information about the item or report.

The following fields may appear in the **Change History** report:

Field	Description
Action Type	Displays the last action performed.
Changed Value	Displays each changed field as a separate item in the report.
Item Changed	For changed items, this column displays the Item ID and title of the changed primary or auxiliary item. The appearance of this column may vary depending on settings made by your administrator.
Prior Value	Displays the value of the field before it was changed.
New Value	Displays the new value for the field.
User Making Change	Displays the name of the user who made the change.
Timestamp of Change	Displays the time that the change was made.  Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.

Deleted Items Reports

Deleted Items reports allow you to create a list of items that were deleted from any primary table. All items that were deleted from the primary table within the specified date range are returned in the report. After running a **Deleted Items** report, you can view change history for items listed in the report.



Restriction: You must have privileges to access Manager-level reports to use this report type.

Users with Global Administration privilege can use the **Deleted Items** report to view a list of report changes that were made in a given time period. To view change history for reports, select **Reports** as the **Report Item Type** instead of a table name in the report definition.

Content Options for Deleted Items Reports

The following options are available in the Content area for **Deleted Items** reports.

- **Report Item Type**

Contains the primary table for the selected application and any auxiliary tables for which you have privileges. Select the table that contains the information for the report.

To view reports that users have deleted, select **Reports** instead of a table name in the report definition. Note that the **Reports** option only appears in the **Report Item Type** drop-down list if you have Global Administration privilege.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Select Columns to Display**

Select fields to display in your report results. The available fields are *Action Type*, *Prior Owner*, *Prior State*, *Timestamp of Change*, and *User Making Change*. You can also rearrange the order in which these fields appear in the report.

- **Set Custom Field Widths**

By default, the width of field columns is set automatically based on the size of your browser window and the number of fields displayed on the report. You can force the column for a selected field to be larger or smaller by specifying an absolute width in pixels.

To change the display width of a field, select a field in the left pane, and then click the **Set Custom Field Widths** link to specify a display width in pixels for the field. You can then move the field to the right pane.

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as `AS MINUS 5` OR `PLUS 5` (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as **Minus 5** or **Plus 5** (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

Only items that were deleted between the start date and the end date are returned in the report.

Sorting Options for Deleted Items Reports

Sort options enable you to sort search results based on values in selected fields. For example, you can sort items user who deleted items. To sort by this criteria, select User Making Change from one of the drop-down lists.



Tip: The fields you select for sorting are independent of the fields you select to display. For best results, you may want to display the fields you choose for sorting. For details, refer to [Content Options for Deleted Items Reports \[page 62\]](#).

The following sorting options are available:

- **Sort by/Then by** – From the drop-down lists, select the fields for which you want to sort report results based on field values. Fields available for sorting are *Action Type*, *Prior Owner*, *Prior State*, *Timestamp of Change*, and *User Making Change*.
- **Ascending / Descending** – Select one of these options for each field to specify its sort order.

Additional Options for Deleted Items Reports

The following options are available in the Additional Options area of the **Deleted Items** report form. These options can be considered "advanced" report options.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting Export to Microsoft Excel), and `massselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.

Deleted Items Report Results

Deleted Items report results appear in two panes: the list of items within the specified date range are listed in the **Item List** pane; detailed information about each deleted item is listed in the **Item Details** pane.

Deleted Items Report List Display

The list of deleted items displays the fields you selected on the report form. If you did not select specific fields, the *User Making Change*, *Action Type*, and *Timestamp of Change* fields appear in the report. If you are creating a report for deleted reports, *User Making Change*, *Action Type*, and *Timestamp of Change* fields display.

When you run the report for deleted items, the first field selected to appear in the report form shows as a link. For example, if the *User Making Change* field is selected first, then the user name appears as a link. Click the link to display detailed information about the item.

The following fields are available for display in the **Deleted Items** report:

Field	Description
Action Type	The last action for items in a Deleted Items report is always "Deleted."
Prior Owner	Displays the owner of the item when it was deleted.
Prior State	Displays the state the item resided in when it was deleted.
Timestamp of Change	Displays the time the item or report was deleted.
User Making Change	Displays the name of the user who deleted the item or report.

The **Item Details** pane for a **Deleted Items** report displays change history information for the deleted item selected in the **Item List** pane.

Multi-Table Reports

Multi-Table System Fields reports enable you to query system fields to list items from multiple primary and auxiliary tables. For example, you can create a report that shows all items in the *Issues* and *Incidents* tables that were submitted after a particular date. The system fields in each table vary depending on the type of table you create the report against and the system fields added to each table by your administrator.



Tip: A second method of searching across tables is to add a Join condition to your report. This allows you to report on items that are related to a main item through relational fields. For details, see [Including Data from Related Items \[page 43\]](#).

- [Content Options for Multi-Table Reports \[page 66\]](#)
- [Search Filters for Multi-Table Reports \[page 66\]](#)
- [Sorting Options for Multi-Table Reports \[page 67\]](#)
- [Additional Options for Multi-Table Reports \[page 68\]](#)
- [Multi-Table Report Results \[page 70\]](#)

Content Options for Multi-Table Reports

The following sections describe options available in the Content area for **Multi-Table** reports.

- **Tables to Search**

Select multiple primary and auxiliary tables to search against. You must select at least one table before you can run the report.

If you save a Global Search as a report, the tables specified on the **Search** page are added automatically to the **Tables to Search** box.

- **Multi-Table System Fields**

Select system fields to display as columns in your report. The **Fields** list contains all system fields that are available in all primary and auxiliary tables in your system, except for the *State* field.

- **Optional Width**

By default, the width of field columns is set automatically based on the size of your browser window and the number of fields displayed on the report. To change the field, select a field, and then specify an absolute width in pixels to force the column for the field to be larger or smaller. Repeat for each field as needed.

Search Filters for Multi-Table Reports

Select the following options for creating a search filter for your report:



Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

-
- **Show Search Filter In Results** – Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
 - **Limit selections using field dependencies and project selections** – Select this check box to filter field values based on field-type dependencies and the project selected for the report. When you add an independent field to the search filter, the value you select determines the available values for any dependent fields that you add to the search filter.



Note: Changing this setting does not affect values that have already been selected.

- **Use Basic Conditions** – Allow you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to [Using Basic Conditions in SBM Reports \[page 183\]](#).

The following information applies to using Basic Conditions with **Multi-Table** reports:

- The **Query at Runtime** option is not available for **Multi-Table** reports.
 - The **Fields** list contains all system fields that are available in all tables in your system. Search criteria that is not applicable to a table is ignored. For example, if your report criteria includes the *Companies* table and search criteria for the *Owner* field, which is not available in the *Companies* table, your search criteria is ignored for that table.
 - The name provided by SBM identifies system fields available for **Multi-Table** reports; these names may be different than those provided by your administrator. For assistance in using system fields in **Multi-Table** reports, contact your administrator.
 - If you saved a **Global Search** as a report, your search criteria is added to the **Search Filter** area. Keep the criteria, modify it, or remove it before running the report.
- **Use Advanced SQL Conditions** (on-premise customers only) – SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to [Using Advanced SQL Conditions in SBM Reports \[page 192\]](#).



Note: The **Multi-Table** report only supports the pass-through method @ modifier when you use an Advanced SQL condition. Privileges granted by your administrator determine if you can create a **Multi-Table** report using Advanced SQL conditions.

Sorting Options for Multi-Table Reports

Sort options enable you to sort search results based on values in selected fields. For example, you can sort items by the last modified date.



Tip: The fields you select for sorting are independent of the fields you select to display. For best results, you may want to display the fields you choose for sorting. For details, refer to [Content Options for Multi-Table Reports \[page 66\]](#).

The following sorting options are available:

Option	Description
Sort by / Then by	From the drop-down lists, select the system fields for which you want to sort report results based on field values. The list contains all system fields that may be available in all tables in your system. Sorting criteria that is not applicable to a table is ignored. For example, if you choose to sort by <i>Last State Change Date</i> for a primary table and two auxiliary tables, which do not contain this field, the primary table items are sorted by <i>Last State Change Date</i> , but the auxiliary tables are not.
Ascending / Descending	Select one of these options for each field to specify its sort order.
Always Perform a Primary Sort by Project Hierarchy	Select this check box to sort primary items in the report by project hierarchy. If you clear the check box and do not provide other sorting criteria, items are listed randomly. This option only applies to primary tables.

Additional Options for Multi-Table Reports

The following options are available in the Additional Options area of the **Multi-Table** report form. These options can be considered "advanced" report options.

- **Add Columns of Calculations**

You can include calculations on *Numeric*, *Binary/Trinary*, and *Date/Time* fields in your report results. The calculations available are addition, subtraction, multiplication and division. For details, refer to [Calculations in Listing and Multi-Table Reports \[page 45\]](#).

To add a calculation to a report:

1. In the **Column** box, type the name that will appear as the Column Header in the report.
2. In the first calculation box, select a field that will serve as the first operator from the drop-down list.
3. Select an operand from the next list.



Note: Date fields can only be subtracted. Multiplying, dividing, and adding date fields will yield an error.



Note: For any calculation you create that begins with a *Date/Time* keyword (like *now* or *startof_thisweek*), you must ensure that the keyword is the first token in the expression. For example, the following expression:

Submit Date = (now Minus 30)

Should be specified as (without the parentheses):

Submit Date = now Minus 30

-
- In the second calculation box, select a field that will serve as the second operator from the drop-down list.
 - Click **Add New Calculation** to add another calculation, if desired.



Tip: For *Date/Time* fields, click the **Date/Time Keywords** link to select a *Date/Time* keyword, such as *Now* or *Startof_NextWeek*, for your calculation.



Important: Certain calculations are not possible, such as multiplying, dividing or adding dates or *Date/Time* Keywords. Invalid calculations will result in an error when you run the report. The errors may prevent the report from running at all, resulting in the following message:

```
An error occurred while processing the last request.
```

```
The error was:
```

```
Database exception in ....
```

- **Hide Project Titles**

Select this check box to prevent the project hierarchy headers from appearing in the report. You must select this check box if you select the **Always Perform Primary Sort by Project** check box.

- **Remove line breaks from memo/text fields**

Select this check box to remove line breaks from the system *Description* field, if used in the report. This option is useful if you plan to export the report data another application, such as Microsoft Excel.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting Export to Microsoft Excel), and `massselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.


If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.

Multi-Table Report Results

Multi-Table reports return a list of items based on your report criteria. You can click item links within the results to view detailed information about each item.

The manner in which **Multi-Table** reports display depends on the display settings in your user profile.

The following information and options appear in the **Item List** pane for a **Multi-Table** report.

Field	Description
Sorted by	Indicates the sort criteria specified on the report form. The arrows indicate if the data is sorted in ascending or descending order. If you did not specify sort criteria when you created the report, for primary items, it is sorted by default, by project hierarchy first and then by item ID in ascending order. A default sort order is not provided for reports created for auxiliary items, but the sort criteria appears as specified on the report form.
Project Hierarchy (For Reports That Contain Primary Tables)	Project hierarchy is included as column headers if you did not select the Hide Project Titles check box. The project hierarchy displays for each project in the item list and primary items that match the report search parameters are listed in the project in which they reside. Projects in the hierarchy that do not have items that match the criteria do not display.
Headings	Project hierarchy is the heading for primary items if you chose to display the hierarchy in the report. If you did not choose to display the project hierarchy, the heading for primary items is the primary table name. The heading for auxiliary items is always the table name.
Items	The fields that display for each item depend on the selections made in the System Fields to Display drop-down lists on the Multi-Table Report form. The first field always appears as a link, which you can click to view detailed information about the item. A check box is provided to the left of the item; select this check box to create a link to the item in a folder.
Requery	Click this link to requery the database and add the latest information to Item List pane.  Tip: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.

Transition Reports

Transition reports enable you to search for items based on the transitions performed on the items, the users who transitioned the items, and when the items were transitioned. For example, you can create a report that shows all items that you assigned or rejected in the past week.

Content Options for Transition Reports

The following options are available in the Content area for **Transition** reports.

- **Report Item Type**

Contains the primary table for the selected application. Select the table that contains the information for the report.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Select Columns to Display**

Select the fields to display as columns in your report results. The available fields are *Timestamp of Change*, *Transition*, and *User Making Change*, as well as the fields from the primary table.

Refer to [Selecting Fields to Display as Columns in the Report \[page 39\]](#).

- **Set Custom Field Widths**

By default, the width of field columns is set automatically based on the size of your browser window and the number of fields displayed on the report. You can force the column for a selected field to be larger or smaller by specifying an absolute width in pixels.

To change the display width of a field, select a field in the left pane, and then click the **Set Custom Field Widths** link to specify a display width in pixels for the field. You can then move the field to the right pane.

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can

also type custom values, such as `minus 5` or `plus 5` (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as `minus 5` or `plus 5` (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

- **Select Transitions**

Select one or more transitions to use for the report.



Note: Duplicate transitions may appear in the list if they originate from different start states. In this case, the start and end states appear after the transition in parenthesis.

- **Select User Making Changes**

Optionally, limit the report to one or more users who performed the selected transition(s).

Search Filters for Transition Reports


Search filters enable you to narrow your search for items. Depending on your privileges, you can define basic conditions or Advanced SQL Conditions.



Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.

Option	Description
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <i>severity in Critical</i>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Use Basic Conditions	Enables you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .

Sorting Options for Transition Reports


Sort options enable you to sort search results based on values in selected fields. For example, you can sort items by the user who transitioned the items.



Tip: The fields you select for sorting are independent of the fields you select to display. For best results, you should display the fields you choose for sorting. For details, refer to [Content Options for Transition Reports \[page 71\]](#).

The following sorting options are available:

Option	Description
Sort by/ Then by	From the drop-down lists, select the fields for which you want to sort report results based on field values. To specify the sort order for each field, select Ascending or Descending from the drop-down list next to the field.

Option	Description
Always Perform a Primary Sort by Project	If you include multiple projects in the report search filter, select this check box to sort items by project hierarchy. If you clear the Always Perform a Primary Sort by Project check box and do not provide other sorting criteria, items are listed randomly.
Enable Dynamic Column Sorting	<p>Select this check box to display column headers as links. Click to sort the data in ascending or descending order. Your administrator determines if this option is available.</p> <p> Tip: To sort projects alphabetically rather than hierarchically, add the <i>Project</i> field to the Select Columns to Display box on the Content area of the form, clear the Always Perform a Primary Sort by Project check box, and then select the Enable Dynamic Column Sorting check box. After running the report, click the Project column to sort the items alphabetically by project.</p>

Additional Options for Transition Reports

The following options are available in the **Additional Options** area of the **Transition** report form. These options can be considered "advanced" report options.

- **Hide Project Titles**

Select this check box to prevent the project hierarchy headers from displaying on the report. You must select this check box if you select the **Always Perform a Primary Sort by Project** check box.

- **Remove line breaks from memo/text fields**

Select this check box to remove line breaks from *Text* and *Memo* fields in the report. This option is useful if you plan to export the report data to another application, such as Microsoft Excel.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

Transition Report Results

The list of transitioned items displays the fields selected on the report form. If specific fields were not selected, the *Item ID*, *Title*, *Timestamp of Change*, *Transition*, and *User Making Change* fields appear.

When you run the report, the first field selected to appear in the report form appears as a link. For example, if the *User Making Change* field is selected first, then the user name appears as a link. Click the link to display detailed information about the item.

The following fields may appear in the **Transition** report:

Field	Description
Timestamp of Change	Displays the time that the transition was made.
Transition	Displays the transition that was performed.
User Making Change	Displays the name of the user who performed the transition.



Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.

Distribution Reports

Distribution reports summarize categories of items. For example, you can create a report totaling the type of primary items in a project and show subtotals against the states of the primary items. This report is useful for managers who need totals, counts, or summarized information in an easy-to-read format. **Distribution** reports appear as tabular or graphical reports.

The following types of distribution reports are available:

- [Custom Distribution Reports \[page 75\]](#)
- [Advanced Distribution Reports \[page 83\]](#)
- [Summary Reports \[page 89\]](#)

Custom Distribution Reports

Distribution reports summarize categories of items. For example, you can create a report totaling the type of primary items in a project and show subtotals against the states of the primary items. This report is useful for managers who need totals, counts, or summarized information in an easy-to-read format. **Distribution** reports appear as tabular or graphical reports.

SLA Fields

If you have the appropriate privileges, you can select SLA fields in the following areas as you define the report:

- **Content:** Row, Column, Sum Totals by
- **Search Filter:** Use Basic Conditions
- **Sorting:** Show Only Row Field Values, Show Only Column Field Values
- **Drill-Down Display Options:** Select Columns to Display, Sort by, Then by

To enable SLA fields in the report, see [Additional Options for Custom Distribution Reports \[page 80\]](#).

Content Options for Custom Distribution Reports

The following options are available in the Content area for **Custom Distribution** reports:

- **Report Item Type**

Contains the primary table for the selected application and any auxiliary tables for which you have privileges. Select the table that contains the information for the report.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Join**

Refer to: [Adding Join Conditions \[page 44\]](#).



Note:

- For information on why you would use the join condition, see [Including Data from Related Items \[page 43\]](#).
- The table that is selected in the **Report Item Type** drop-down list determines which *Single Relational* fields are available for the **Row**. The table that is referenced in the join determines which fields are available for the **Column**.
- Only *Single Relational* fields that point to a different table are available for the **Row** definition.
- Because a distribution report uses only two fields, only one join can be added. This also means that if you add a join, sub-relational fields are not available for either the row or column definition because only one reference to another table is allowed.
- The **Add** button may be disabled due to the following conditions:
 - The application has no *Single Relational* fields.
 - All of the relational fields point to restricted tables which you do not have privileges to view tables or created reports.
- An existing join condition can be modified or deleted by selecting it and clicking **Delete** or **Change**.

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Row and Column**

Select fields that appear in the report. Rows appear horizontally and columns display vertically. You can choose selection fields, such as *User*, *Single Selection*, *Single Relational*, *Sub-Relational*, *Binary/Trinary*, *Multi-Group*, *Multi-User*, and *Multi-Selection* fields. Avatars are displayed above the user name when you specify a *User* field as a row.

Available *Sub-Relational* fields include those that point to *Single Relational*, *Single Selection*, and *User* fields. You can specify *Sub-Relational* fields that point to auxiliary table fields, other primary table fields, or *Sub-Relational* fields in the current primary table for both the row and column definition. However, *Sub-Relational* fields cannot be used with join conditions.

- **Sum Totals By**

Enables you to see the sum of certain field values rather than count each item returned by the report as one. The following table lists the applicable field types and examples.

Field Type	Notes	Example
Date/Time	Applies to Elapsed Time fields only.	Use to track the amount of work spent on a set of items, such as a team's work for a sprint.
Numeric		Use to track the amount of money spent on a set of items or the number of sprint points allocated for a set of items.

Field Type	Notes	Example
Single Selection	<p>Applies only to weights assigned to <i>Single Selection</i> field values. If weights are not applied, each item is counted as a single item.</p> <p>Contact your administrator to learn about the weights assigned to <i>Single Selection</i> fields in your system.</p>	<p>A <i>Priority</i> field may have these values and assigned weights: of High - 100, Medium - 50, and Low - 10. Each item returned by the report is counted using the weight from its <i>Priority</i> field selection.</p>

- **Output**

View the report results in terms of number of items or use percentages. If you select **Percentage** as the output, select the number of decimal digits to use.

- **Order Rows By**

Order rows in report results according to one of the following:

- **Name** – Orders rows alphanumerically
- **Total Value** – Orders rows by the total count for each row
- **Max Value** – Orders rows by the largest value in each row

Use the **Order Type** drop-down list to sort in ascending or descending order.



Note: The **Secondary Owner** field is not available for use as a row in this report.

To suppress values for the field you select, use the options available in the Sorting section. For details, refer to [Sorting in Custom Distribution Reports \[page 79\]](#).


Search Filters for Custom Distribution Reports

Search filters enable you to narrow your search for items. Depending on your privileges, you can define basic conditions or Advanced SQL Conditions.



Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <i>Severity in Critical</i>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Use Basic Conditions	Enables you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .

Sorting in Custom Distribution Reports

By default, all values for fields selected for the report's row and column appear in the report. However, you can suppress and reorder **Row** and **Column** field values. For example, if you select the *Submitter* field for the row, you can choose to display the number of issues submitted by specific users rather than by all users who submitted issues.

To suppress Row and Column field values:

1. In the Sorting section of the **Distribution** report form, click the **Modify** button in the **Show Only Row Field Values** area.

2. The field values for the field selected in the **Row** list appear in the left pane. Select the values you want to appear in the report, and then click the right arrow to move the values to the right pane.



Tip: If there are more field selections than can be returned based on administrative settings, use the Value Find feature to search for values.

3. Use the up and down arrows to reorder the values as needed.
4. Click **OK**.
5. Click the **Modify** button in the **Show Only Column Field Values** area.
6. The field values for the field selected in the **Column** list appear in the left pane. Use the Value Find as needed. Select the values you want to appear in the report, and then click the right arrow to move the values to the right pane.
7. Use the up and down arrows to reorder the values as needed.
8. Click **OK**.

Additional Options for Custom Distribution Reports

The following options are available in the Additional Options area of the **Custom Distribution** report form. These options can be considered "advanced" report options.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show Whole Rows and Columns of Zero (0)**

By default, **Distribution** reports do not show rows that have only zeros as values. Select this check box to show the rows that only have zeros as values.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Show Chart Anchors**

Select this check box to easily show or hide the data points for tape, line, and area charts. This option is always enabled for scatter charts. You can use this option in

combination with **Show Chart Values** to view data points and values simultaneously.

- **Show SLA Fields**

If you have the appropriate privileges, select this check box to enable SLA fields to appear as selections in columns to display lists, sort by lists, and search filters. The fields are prefixed by "(SLA)".



Note: When you select this option, any report definition in progress will be cleared and you will need to create the report again.

- **Thresholds**

Thresholds allow you to apply visual indicators to your report that inform you when data rises above or falls below numbers you specify. Apply a color to each threshold that appears in the background of the report.

You can set a high threshold, a low threshold, or both. Thresholds cannot be used with percentile stacked bar charts, pie charts, doughnut charts, heatmap charts, or radar charts. The following threshold options are available:

- **Set High Threshold Greater Than** – Type a number that indicates a high threshold when the report data is greater than that number. For a report that tracks the number of items submitted by particular users, you may want to set a high threshold that indicates when over 75 items have been submitted.
- **Set Low Threshold Less Than** – Type a number that indicates a low threshold when the report data is lower than that number. For a report that tracks the number of items submitted by particular users, you may want to set a low threshold that indicates when fewer than 10 items have been submitted.
- **Using Color** – Click the **Color** link for each threshold to open the **Select Color** dialog box and select a color for each threshold. You must select a color if you set a high or low threshold. The color for each threshold appears in the background of the report.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Choose Colors for Values**

Choose custom colors for values shown in graphical reports. Values are based on the row and column fields you selected on the **Content** tab. Depending on the report style, color may be applied to row values, column values, or both. If you do not select colors, random colors are used.

Drill-Down Display Options for Distribution Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.


The following table describes each of the fields that you use to specify drill-down display options:




Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Custom Distribution Report Results

Custom Distribution reports return a tabular or graphical representation of items based on your report criteria.

The following information and options appear with **Custom Distribution** report results.

Field	Description
Show TSV	<p>Click this button to open a window that displays the report in a tab-delimited format. This enables you to copy the report information and paste it into a spread sheet application, such as Microsoft Excel.</p> <p> Note: This option is not available for graphical reports. Alternatively, you can choose the Excel option to export report results.</p>

Field	Description
Graph or Table	Depending on the style you selected when you created this report, a table or graph showing the data that meets the report parameters displays.
Drill-Down	<p>Distribution reports can be clicked to display detailed information about the report results. For example, if your report contains a count of items submitted by a specific set of users, each count of items submitted by a user appears as a link (tabular display) or clickable slice (graphical display). Click the count number to display a Listing report of those items. Zero counts do not appear as links. To return to the original report after viewing the Listing report, click the Back to Results link.</p> <p> Tip: If links are not available on the drill-down report, simplify the report specifications on your originating report.</p> <p> Note: For Rich Graphical Reports, you must disable slicing before you can click to drill-down.</p>
Thresholds	<p>If you configured thresholds on the report form, the color you indicated for each threshold displays on the report background.</p> <p> Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.</p>

Advanced Distribution Reports

Distribution reports summarize categories of items. For example, you can create a report totaling the type of primary items in a project and show subtotals against the states of the primary items. This report is useful for managers who need totals, counts, or summarized information in an easy-to-read format. **Distribution** reports appear as tabular or graphical reports.

SLA Fields

If you have the appropriate privileges, you can select SLA fields in the following areas as you define the report:

- **Content:** Group Rows By, Group Columns By, Divide Columns By, Sum Totals By
- **Search Filter:** Use Basic Conditions
- **Sorting:** Show Only Row Field Values, Show Only Column Field Values
- **Drill-Down Display Options:** Select Columns to Display, Sort by, Then by

To enable SLA fields in the report, see [Additional Options for Advanced Distribution Reports \[page 86\]](#).

Content Options for Advanced Distribution Reports

The following options are available in the Content area for **Advanced Distribution** reports.

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Trend Criteria**

Use these options to specify **Advanced Distribution** criteria.

- **Group Rows By**

Select any selection field by which to group the rows in the report. You can choose fields such as *Binary/Trinary, Single Selection, Multi-Selection, Single Relational, Multi-Relational, User,* and *Multi-User* fields.

- **Group Columns By**

Select any selection field and the values to be used for the major columns in the report. You can combine multiple values for use in a single major column and you can choose a label for the column. You can choose fields such as *Binary/Trinary, Single Selection, Single Relational,* and *User* fields.

CAUTION:



Do not specify the same value for more than one column; otherwise, some of the report data will be incorrect.

- **Divide Columns By**

Optionally, select any selection field by which to subdivide the major columns into subcolumns. Then pick a maximum of three values from the **Limit Field Values** option. These values determine the subcolumns. The remaining values are combined in a column named **Other**.

- **Sum Totals By**

Enables you to see the sum of certain field values rather than count each item returned by the report as one. The following table lists the applicable field types and examples.

Field Type	Notes	Example
Date/Time	Applies to Elapsed Time fields only.	Use to track the amount of work spent on a set of items, such as a team's work for a sprint.
Numeric		Use to track the amount of money spent on a set of items or the number of sprint points allocated for a set of items.
Single Selection	Applies only to weights assigned to <i>Single Selection</i> field values. If weights are not applied, each item is counted as a single item. Contact your administrator to learn about the weights assigned to <i>Single Selection</i> fields in your system.	A <i>Priority</i> field may have these values and assigned weights: of High - 100, Medium - 50, and Low - 10. Each item returned by the report is counted using the weight from its <i>Priority</i> field selection.

Grouping Field Values

When you select the **Combine Field Values** option underneath **Group Columns By** option, the **Group Field Values** option box displays.

Enter a label for your group of field values (for example, *Completed Items*), and then choose the field values that you want to compose the group.

To add a field value to the group, move the value from the list box on the left to the list box on the right. To remove a field value from the group, move the value out of the box on the right. Use the arrow buttons to move field values back and forth until the list box on the right contains exactly what you want.




Note: The list of available values is determined by the project that you have selected and whether you have selected the sub-projects option in the **Search Filter** area.

To save your changes, click **Change**; to cancel the operation, click **Cancel**.

Search Filters for Advanced Distribution Reports

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <i>Severity in Critical</i>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Use Basic Conditions	Enables you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .

Additional Options for Advanced Distribution Reports

The following options are available in the **Additional Options** area of the **Advanced Distribution** report form.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show Whole Rows and Columns of Zero (0)**

By default, **Distribution** reports do not show rows that have only zeros as values. Select this check box to show the rows that only have zeros as values.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to

read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Show Chart Anchors**

Select this check box to easily show or hide the data points for tape, line, and area charts. This option is always enabled for scatter charts. You can use this option in combination with **Show Chart Values** to view data points and values simultaneously.

- **Show SLA Fields**

If you have the appropriate privileges, select this check box to enable SLA fields to appear as selections in columns to display lists, sort by lists, and search filters. The fields are prefixed by "(SLA)".



Note: When you select this option, any report definition in progress will be cleared and you will need to create the report again.

- **Thresholds**

Thresholds allow you to apply visual indicators to your report that inform you when data rises above or falls below numbers you specify. Apply a color to each threshold that appears in the background of the report.

You can set a high threshold, a low threshold, or both. Thresholds cannot be used with percentile stacked bar charts, pie charts, doughnut charts, heatmap charts, or radar charts. The following threshold options are available:

- **Set High Threshold Greater Than** – Type a number that indicates a high threshold when the report data is greater than that number. For a report that tracks the number of items submitted by particular users, you may want to set a high threshold that indicates when over 75 items have been submitted.
- **Set Low Threshold Less Than** – Type a number that indicates a low threshold when the report data is lower than that number. For a report that tracks the number of items submitted by particular users, you may want to set a low threshold that indicates when fewer than 10 items have been submitted.
- **Using Color** – Click the **Color** link for each threshold to open the **Select Color** dialog box and select a color for each threshold. You must select a color if you set a high or low threshold. The color for each threshold appears in the background of the report.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Choose Colors for Values**

Choose custom colors for values shown in graphical reports. Values are based on the row and column fields you selected on the **Content** tab. Depending on the report style, color may be applied to row values, column values, or both. If you do not select colors, random colors are used.

Drill-Down Display Options for Advanced Distribution Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.





The following table describes each of the fields that you use to specify drill-down display options:

Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Advanced Distribution Report Results

Advanced Distribution reports return a tabular representation of items based on your report criteria, including totals.

The following information and options appear with **Advanced Distribution** report results.

Field	Description
Show TSV	<p>Click this button to open a window that displays the report in a tab-delimited format. This enables you to copy the report information and paste it into a spread sheet application, such as Microsoft Excel.</p> <p> Note: This option is not available for Rich Graphical Reports. Alternatively, you can choose the Excel option to export report results.</p>
Drill-Down Links	<p>Distribution reports can be clicked to display detailed information about the report results. For example, if your report contains a count of items submitted by a specific set of users, each count of items submitted by a user appears as a link (tabular display) or clickable slice (graphical display). Click the count number to display a Listing report of those items. Zero counts do not appear as links. To return to the original report after viewing the Listing report, click the Back to Results link.</p> <p> Tip: If links are not available on the drill-down report, simplify the report specifications on your originating report.</p> <p> Note: For Rich Graphical Reports, you must disable slicing before you can click to drill-down.</p>
Thresholds	<p>If you configured thresholds on the report form, the color you indicated for each threshold displays on the report background.</p> <p> Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.</p>

Summary Reports

Summary reports group results based on similar data in selected fields. For example, you can create a **Summary** report that returns the number of items for each developer divided up based the state and project of the item.

The groupings of results depend on the order of the fields in the report. Using the previous example with the developer, state, and project fields, you have six possible ways to group the results. You could group all items based on different states (new, assigned, completed), then subdivide each grouping based on the projects, and then subdivide that subgroup based on developer. Or, you could start by grouping the items by developer, and then subdividing the subgroup by project and then subdivide again by state.

You can add columns to calculate averages, sums, and maximum and minimum values of *Numeric*, *Date/Time*, *Binary / Trinary*, and *Summation* fields.

You can also calculate the averages, totals, maximum and minimum values for Time Capture entries.

You view a listing report of the specific items within a summation row by clicking the **Number of Items** value or by clicking the Listing icon.

You can collapse and expand the different groups, as well as adjust the view by selecting from the available options such as **Show Repeating Values** and **Show Rollup Levels**. See [Summary Report Results \[page 94\]](#) for details.

SLA Fields

If you have the appropriate privileges, you can select SLA fields in the following areas as you define the report:

- **Content:** Select Columns to Display
- **Search Filter:** Use Basic Conditions
- **Additional Options:** Add Columns of Calculations
- **Drill-Down Display Options:** Select Columns to Display, Sort by, Then by

To enable SLA fields in the report, see [Additional Summary Report Options \[page 92\]](#).

Content Options for Summary Reports

The following options are available in the Content area for **Summary** reports.

- **Report Item Type**

Contains the primary table for the selected application and any auxiliary tables for which you have privileges. Select the table that contains the information for the report.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Select Columns to Display (Groups by Unique Values)**

Select and order the fields that determine how your results will be grouped. For example, you can select the *Active/Inactive* field, and you will get two groups returned, one with the number of active items and one with the number of inactive items.

When you select multiple fields, groupings are created based on the combinations of fields. For example, if you selected the *Active/Inactive* field and the *State* field (which has four available states), you would have eight groupings.

Only unique values appear on the report. Sorting for your report is based on fields selected in the **Data Grouping** box. Sorting is done only on the first four columns. All of the returned groupings are first sorted according to the first column, and then subdivided based on the second column, and so on. If you selected the *Active/*

Inactive field for the first column, you will have all active groupings listed first, and then the inactive groupings. Note that the order which the values display, active then inactive, are set by your administrator.

Most field types are available for data grouping; however, with these exceptions:

- For *Text* fields, only those that are set as fixed-length fields are available.
- *Folder* fields are not available.
- Depending on the type of database your system is using, *Multi-Group*, *Multi-User*, and *Multi-Selection* fields may not be available.

- **Set Custom Field Widths**

By default, the width of field columns is set automatically based on the size of your browser window and the number of fields displayed on the report. You can force the column for a selected field to be larger or smaller by specifying an absolute width in pixels.

To change the display width of a field, select a field in the left pane, and then click the **Set Custom Field Widths** link to specify a display width in pixels for the field. You can then move the field to the right pane.

Search Filters for Summary Reports


Search filters enable you to narrow your search for items. Depending on your privileges, you can define basic conditions or Advanced SQL Conditions.



Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.

Option	Description
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <i>Severity in Critical</i>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Use Basic Conditions	Enables you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .

Additional Summary Report Options

The following options are available in the Additional Options area of the **Summary** report form. These options can be considered "advanced" report options.

- **Add Columns of Calculations**

You can include single-field functions (SQL aggregate functions) in **Summary** reports. The SQL aggregate functions available are average, maximum, minimum, and sum. For details, refer to [Single-Field Functions \[page 46\]](#). You can perform the following functions:

- **AVG (Average)** – Average all values in a field.
- **MAX (Maximum)** – Return the maximum value in a field.
- **MIN (Minimum)** – Return the minimum values in a field.
- **SUM (Sum)** – Return the sum of all values in a field.

For example, to determine the last time an item was submitted into a particular project, specify the following parameters in the **Calculated Fields to Display** section of the report form: *Last Item Submitted = MAX of Submit Date/Time*.

When you run the report, the date and time the last item was submitted into the queried project appears in the Last Item Submitted column.

To add a single-field function to a report:

1. In the **Column** box, type the name that will appear as the Column Header in the report.
2. In the first calculation box, select a field that will serve as the first operator from the drop-down list.
3. Select an operand from the next list.
4. In the second calculation box, select a field that will serve as the second operator from the drop-down list.

- **Include Items**

Select this option to show the individual items for each grouping.

- **Show SLA Fields**

If you have the appropriate privileges, select this check box to enable SLA fields to appear as selections in columns to display lists, sort by lists, and search filters. The fields are prefixed by "(SLA)".



Note: When you select this option, any report definition in progress will be cleared and you will need to create the report again.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting Export to Microsoft Excel), and `masselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.

Drill-Down Display Options for Summary Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:

Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Summary Report Results

The **Summary** report displays groups of items that share the same values in the fields that you selected to display. The groups can also be collapsed at the different rollup levels following the order of the fields. The field order depends on how they were selected, with any calculated fields showing up to the far right.

The **Number of Items** column provides a link that opens a **Listing** report of the items in that grouping. This list shows the number of items that fit the criteria across the selected fields. If you selected to display the items from a rollup level, it will include all of the items that meet the selection criteria for that rollup level.

For example, if your report contains a count of items in each project submitted by a specific set of users, each count of items owned by a user appears as a link. Click the **Number of Items** value to display a **Listing** report of those items. Also, you click the value on the project level to show all items in that project submitted by the set of users. To return to the original report after viewing the **Listing** report, click the **Back to Results** link.

You can expand and collapse the rollup level groupings by selecting the icons on the left. The following table describes the options available in the Summary results view:

Option	Description
Show rows with at least	Move the slider to filter the results for groups having equal or more items.
Show rollup levels	Move the slider to hide or display rollup levels. As you move to the right, each new layer of rollup levels is displayed. Moving the slider completely to the right displays all roll up levels. The rollup levels displayed appear above the slider.
Show repeating values	Select this option to display duplicate values at the rollup levels and at the low levels. If not selected, only the first occurrence of a value will appear.
Show items	Select this option to display the individual items in the report. This option is only available if Include Items is enabled under Additional options in the report definition.



Tip: If links are not available on the drill-down report, simplify the report specifications on your originating report.



Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.

Duration Reports

Duration reports provide historical trends of primary items over a specified duration. **Duration** reports appear as tabular or graphical reports.

- [Advanced Time in State Reports \[page 95\]](#)
- [Average Time to State Reports \[page 101\]](#)
- [Elapsed Time Reports \[page 107\]](#)
- [Time In State Reports \[page 113\]](#)

Advanced Time in State Reports

Advanced Time in State Duration reports show the amount of time primary items remain in a state or collection of states, and are similar to the **Elapsed Time** and **Time in State** reports. The main differences are that this report:

- Does not require you to configure time interval groups
- Enables you to report only on the item's current state or include all past states

- Outputs all actual "Time in State" value for items instead of truncating the results by the start and end dates

Content Options for Advanced Time in State Duration Reports

The following options are available in the Content area for **Advanced Time in State Duration** reports:

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as `AS MINUS 5 OR PLUS 5` (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as **Minus 5** or **Plus 5** (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

- **Select States**

Select one or more states to include in the report.

- **Only for item's current state:** If selected, calculate data only for the item's current state, otherwise calculate data for the item's current state and all past states.
- **Calculate summary "Time in State" value for all states:** If selected, calculate the "Time in State" value as a summary for all selected states, otherwise calculate separate values for each state.

- **Select Multi-Calendar**

Select a calendar to use for determining durations. The calendar that you select determines how time is calculated. For example, if your calendar has 8 hours per standard working day Monday through Friday, and your item has been in the state from Saturday to Tuesday at noon, then the item will have been in the state for 12 hours or 1.5 days.



Note: Calendars are created in SBM Application Administrator.

- **Total By**

Choose to increment results in hours, days, or weeks.



- **Rounding Mode**

Choose how to treat an incomplete day or hour (specified by **Total By**). **Round to Closest** rounds to the closest value, while **Truncate Fractions** counts only the amount of complete hours or days. For example, with **Total By** set to **Days** and a value of 20 elapsed hours in a state, the **Round to Closest** option rounds the hours to 1 day, while **Truncate Fractions** truncates the hours to 0 days.

Search Filter for Advanced Time in State Reports

Search filters enable you to narrow your search for items.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <i>Severity in Critical</i>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .

Additional Options for Advanced Time in State Reports

The following additional options are available for Advanced Time in State reports: These options can be considered "advanced" report options.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Labels and Calculate Time Intervals according to User's Time Zone**

Select this check box if you want column labels to display times and calculate time intervals in the time zone selected in the user profile for the user running the report. Clear the check box if you want labels to show times in Universal Coordinated Time (UTC).

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Show Chart Anchors**

Select this check box to easily show or hide the data points for tape, line, and area charts. This option is always enabled for scatter charts. You can use this option in combination with **Show Chart Values** to view data points and values simultaneously.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Choose Colors for Values**

Choose custom colors for values for the **Group By** field you selected on the **Content** tab. If you do not select colors, random colors are used.

Drill-Down Display Options for Advanced Time in State Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

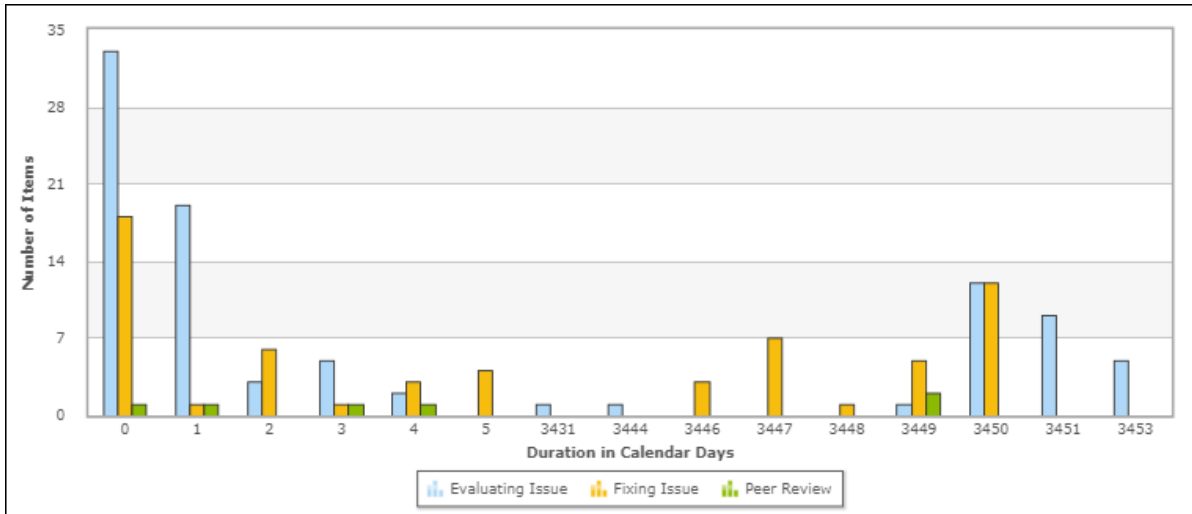
- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:

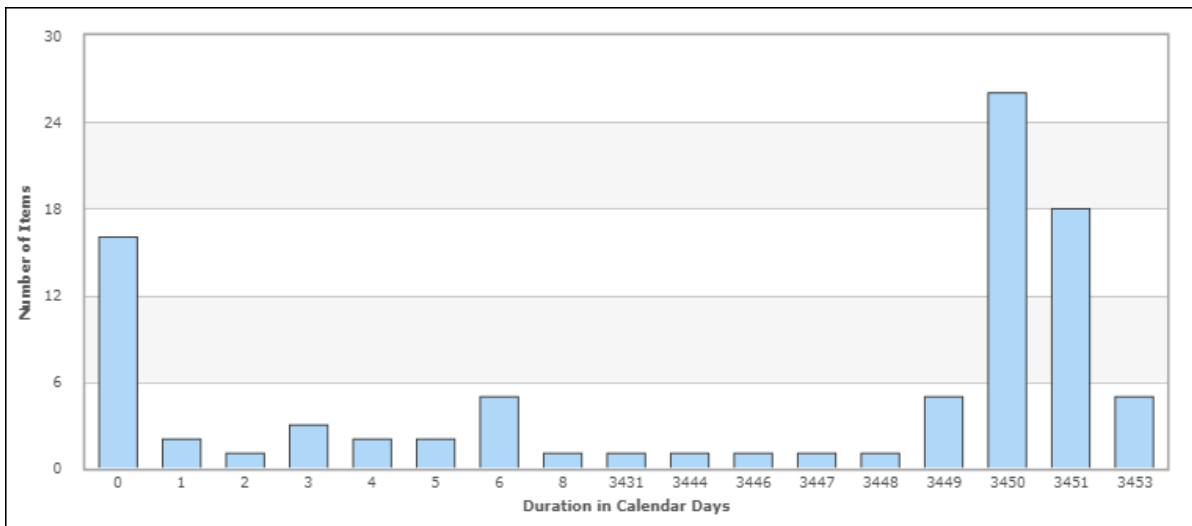
Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Advanced Time in State Results

Advanced Time in State results group items based on the selected time interval, hours, days, or weeks. For example, in the following screenshot, the items have been grouped by the number of days spent in three selected states: Evaluating Issue, Fixing Issue, and Peer Review. Because the **Calculate summary "Time in State" value for all states** option is not enabled, the report displays multiple bars representing the actual values for each state.



If the **Calculate summary "Time in State" value for all states** option is selected, the report shows one bar per time interval, representing the total value calculated for the three selected states:



Tip: Hover your cursor over a specific column to display the value that the column represents. You can also configure the report to display the column values by selecting the **Show Chart Values** option on the Additional Options area.

Average Time to State Reports

Average Time to State Duration reports show the amount of time primary items take to reach a selected state.



Note: If an item is transitioned more than once, but remains in the same state, the **Average Time to State** results for the item appear to be skewed because the time period between each transition is added to the total time, even though the item has not progressed through the workflow.

Content Options for Average Time to State Duration Reports

The following options are available in the Content area for **Average Time to State Duration** reports:

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Total By**

Choose to increment results in days, weeks, months, or quarters. The date and time selected as a start date determines the beginning of the increment period. For example, if you specify Feb. 15 as a start date and select **Quarters** from the **Increment** drop-down list, report results are organized by quarter beginning with Feb. 15. For monthly increments, if you select a start date that does not apply to all months, such as Jan. 31, that date is only used when it applies. In addition, the specified end date is increased when needed to reflect an entire time period. If your last column starts at 3/30/2013 at 5 a.m. and you selected a monthly increment, the end date for the last column is 4/30/2013 at 5 a.m. For details on selecting start and end times for Trend reports, refer to [Search Filter for Custom Trend Reports \[page 121\]](#).

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**
 - **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as `Minus 5` or `Plus 5` (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as `Minus 5` or `Plus 5` (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

- **From State**

This field is optional. If you select a state, the report shows how long it takes items to move from this state to the state specified for the **To State** field.

- **To State**

Select the state that you want base the report on. If both **From State** and **To State** are specified, the report shows how long it takes items to move between the selected states; otherwise, the report shows how long it takes items to reach the **To State** from the Submit state.

- **Select Multi-Calendar**

Select a calendar to use for determining durations measured in days. Other than the standard twenty-four-hour calendar, only calendars that are configured by an administrator to save state change durations appear in the list. Calendars that are no longer collecting data or those that might have gaps in the data appear with an asterisk (*).



Note: Changing calendars sometimes changes the start and end dates used for the report. The start date defaults to the date when time-in-state data collection began. The end date defaults to the date when data collection is scheduled to stop, if there is such a date.



- **Group By**

This field is optional. If you select a field by which to group items, one bar appears for each value for that field that occurs within the results for each time period. For example, if you select the **Severity** field, and that field has Sev 1, Sev 2, and Sev 3 as possible values, three color-coded bars appear within each time period grouping, one for each severity level.

Search Filter for Average Time to State Reports

Search filters enable you to narrow your search for items.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <code>Severity in Critical</code>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>

Additional Options for Average Time to State Reports

The following additional options are available Average Time to State reports: These options can be considered "advanced" report options.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Labels and Calculate Time Intervals according to User's Time Zone**

Select this check box if you want column labels to display times and calculate time intervals in the time zone selected in the user profile for the user running the report. Clear the check box if you want labels to show times in Universal Coordinated Time (UTC).

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Choose Colors for Values**

Choose custom colors for values for the **Group By** field you selected on the **Content** tab. If you do not select colors, random colors are used in the group.

Drill-Down Display Options for Average Time to State Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.


The following table describes each of the fields that you use to specify drill-down display options:


Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Average Time to State Results

Duration reports provide historical trends of primary items over a specified duration.

The following information and options display with **Duration** report results.

Field	Description
Show TSV	<p>Click this button to open a window that displays the report in a tab-delimited format. This enables you to copy the report information and paste it into a spread sheet application, such as Microsoft Excel.</p> <p> Note: This option is not available for graphical reports. Alternatively, you can choose the Excel option to export report results.</p>

Field	Description
Data Set Labels	Data set labels display above the report graphic. These labels use a color that corresponds to a category or column in the report.
Date/Time Labels	Labels for the date/time columns on the report depend on the time increment you reported on and whether you elected to display dates and times in local time or Coordinated Universal Time (UTC). If you selected the Show Labels in Local Time check box on the report form, the time zone specified in your user profile determines the column display. The heading for date/time labels indicate whether the report is using local time or UTC time.
Thresholds	<p>If you configured thresholds on the report form, the color you indicated for each threshold displays on the report background.</p> <p> Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.</p>

Elapsed Time Reports

Elapsed Time Duration reports show the amount of time primary items remain in a state or collection of states. You can use this report to display items that have remained in a state beyond the desired time. The report helps you to find bottlenecks in your processes by breaking down how long items spend in particular states.

For example, assume that you are the manager of a loan processing division that has a service level criteria which seeks to have all new loans reviewed and approved in 5 days. However, when more information is required from the customer, items move into a state that should not be counted in the total 5 days that this process should take. To manage this process, you could create an Elapsed Time with three buckets: *less than 2 days*, *5 days*, and *greater than 5 days*. You select only the states that items are in while they count toward the 5 day requirement.

The results inform you about your process and possible problems while ignoring delays that are initiated by slow customer response. The *less than 2 days* bucket gives you a general sense of the incoming rate of new loans. The *5 days bucket* (items opened 2 to 5 days) lets you monitor the loans to make sure that they are addressed in less than 5 days. If the loans have not been addressed in the desired 5 days, they will appear in the *greater than 5 days bucket*, which you can analyze to improve your overall process for future loan processing.



Important: Elapsed Time reports may not return data if your administrator has disabled Flash components or in browsers that do not support HTML5.

Content Options for Elapsed Time Duration Reports

The following options are available in the Content area for **Elapsed Time Duration** reports:

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as `MINUS 5` OR `PLUS 5` (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as `MINUS 5` OR `PLUS 5` (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

- **Select States**

Select one or more states to display how long items have remained in that state. If you select multiple states, the results will be the sum of time that each item has remained in the collection of states. For each time interval group (see the entry for **Time Interval Groups** below), the report displays the number of items that have been in those states for that length of time (for example, the number of items that have been in the New and Assigned states for less than 10 days). You can choose to divide the results by a particular field (see entry for **Group By**) which would result in multiple columns for each **Time Interval Group**.

- **Select Multi-Calendar**

Select a calendar to use for determining durations. The calendar that you select determines how time is calculated. For example, if your calendar has 8 hours per standard working day Monday through Friday, and your item has been in the state from Saturday to Tuesday at noon, then the item will have been in the state for 12 hours or 1.5 days.



Note: Calendars are created in SBM Application Administrator.

- **Total By**

Choose to increment results in days, weeks, months, or quarters. The date and time selected as a start date determines the beginning of the increment period. For example, if you specify Feb. 15 as a start date and select **Quarters** from the **Increment** drop-down list, report results are organized by quarter beginning with Feb. 15. For monthly increments, if you select a start date that does not apply to all months, such as Jan. 31, that date is only used when it applies. In addition, the specified end date is increased when needed to reflect an entire time period. If your last column starts at 3/30/2013 at 5 a.m. and you selected a monthly increment, the end date for the last column is 4/30/2013 at 5 a.m. For details on selecting start and end times for Trend reports, refer to [Search Filter for Custom Trend Reports \[page 121\]](#).

- **Time Interval Groups**

Select one to four time intervals. For example, if you entered 2 days, 5 days, and 10 days, the report shows duration groupings of:

- Less than two days
- Two days to less than five days
- Five days to less than ten days
- Greater than or equal to ten days

- **Group By**



This field is optional. If you select a field by which to group items, one bar appears for each value for that field that occurs within the results for each time period. For example, if you select the **Severity** field, and that field has Sev 1, Sev 2, and Sev 3

as possible values, three color-coded bars appear within each time period grouping, one for each severity level.

Search Filter for Elapsed Time Reports

Search filters enable you to narrow your search for items.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of Severity in Critical. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>

Additional Options for Elapsed Time Reports

The following additional options are available Elapsed Time reports: These options can be considered "advanced" report options.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show Whole Rows and Columns of Zero (0)**

By default, **Distribution** reports do not show rows that have only zeros as values. Select this check box to show the rows that only have zeros as values.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Choose Colors for Values**

Choose custom colors for values for the **Group By** field you selected on the **Content** tab. If you do not select colors, random colors are used.

Drill-Down Display Options for Elapsed Time Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:

Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

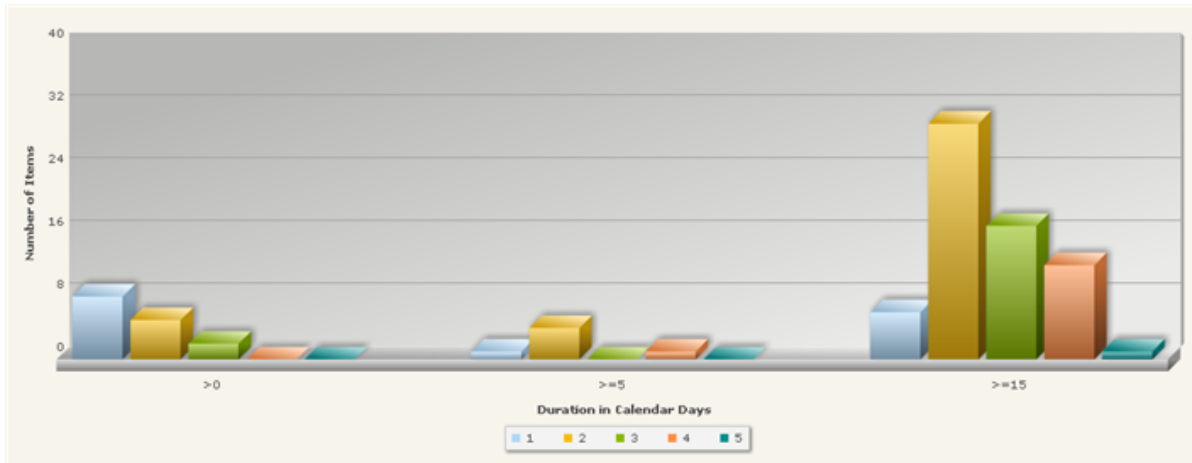
Elapsed Time Results

Elapsed Time results appear in a bar chart, with items grouped based on the selected time interval. If you have selected to group items by a particular field, you will see multiple bars per time interval.

For example, in the following screenshot, the items have been grouped by Severity. This results in the 5 bars within each Time Interval.



Tip: With the multiple columns, hover your cursor over a specific column to display the value which the column represents.



Users can select any bar to drill-down and display a listing report of the items. Note that when you drill-down on a bar, the total items displayed may differ from the results shown in the Elapsed Time report. This is due to the fact that the elapsed time report shows all items while the drill-down results show only items that you have privileges to view. For example, the Elapsed Time report may show a result of 10 items, but when you drill-down, you will only see 8 items because you do not have permission to view the other 2 items.



Note: The Elapsed Time report only shows items which have remained in a state for a time greater than 0.

Time In State Reports

Time in State Duration reports show the amount of time primary items have remained in a current state. You select the states, and the report returns a bar chart of the number of items in each state. The items are grouped based on how long those items have been in their current state.



Note: Even if you select multiple states, the time reported is not cumulative. It only shows how long the item has remained in its current state.

You decide how the items are grouped. For example you could choose to show how many items remained in a selected state for more than 45 days or less than 45 days.

Content Options for Time in State Duration Reports

The following options are available in the Content area for **Time in State Duration** reports.

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Select Multi-Calendar**

Select a calendar to use for determining durations. The calendar that you select determines how time is calculated. For example, if your calendar has 8 hours per standard working day Monday through Friday, and your item has been in the state from Saturday to Tuesday at noon, then the item will have been in the state for 12 hours or 1.5 days.



Note: Calendars are created in SBM Application Administrator.

- **Select States**

Select one or more states. For each age (see the entry for **Time Interval Groups** below), the report displays a colored bar for each specified state showing the number of items that have been in that state for that length of time (for example, the number of items that have been in the Assigned state for less than 10 days).

- **Time Interval Groups**



Select one to four time intervals. For example, if you entered 2 days, 5 days, and 10 days, the report shows duration groupings of:

- Less than two days
- Two days to less than five days
- Five days to less than ten days
- Greater than or equal to ten days

Search Filter for Duration Reports

Search filters enable you to narrow your search for items.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <i>Severity in Critical</i>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>

Additional Options for Time In State Reports

The following additional options are available for Time In State reports: These options can be considered "advanced" report options.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range

of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

Drill-Down Display Options for Time in State Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:



Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.

Field	Description
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Time in State Report Results

Duration reports provide historical trends of primary items over a specified duration.

The following information and options display with **Duration** report results.

Field	Description
Show TSV	Click this button to open a window that displays the report in a tab-delimited format. This enables you to copy the report information and paste it into a spread sheet application, such as Microsoft Excel.  Note: This option is not available for graphical reports. Alternatively, you can choose the Excel option to export report results.
Data Set Labels	Data set labels display above the report graphic. These labels use a color that corresponds to a category or column in the report.
Date/Time Labels	Labels for the date/time columns on the report depend on the time increment you reported on and whether you elected to display dates and times in local time or Coordinated Universal Time (UTC). If you selected the Show Labels in Local Time check box on the report form, the time zone specified in your user profile determines the column display. The heading for date/time labels indicate whether the report is using local time or UTC time.
Thresholds	If you configured thresholds on the report form, the color you indicated for each threshold displays on the report background.  Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.

Trend Reports

Trend reports provide historical totals or submittal rates of items over days, weeks, months, and quarters. **Trend** reports that track historical totals use the system's change history for generating report data, allowing you to track totals for specific fields over a period of time. **Trend** reports that track submittal counts allow you to generate a report that shows current value totals of items submitted during the specified time period. **Trend** reports appear as tabular or graphical reports.

The following trend reports are available:

- [Custom Trend Reports \[page 118\]](#)

- [Estimated Backlog Trend Reports \[page 127\]](#)
- [Backlog Trend Reports \[page 133\]](#)
- [Entering a State Trend Reports \[page 138\]](#)
- [Open and Completed Trend Reports \[page 143\]](#)
- [State Activity Reports \[page 149\]](#)
- [Additional Options for Duration and Trend Reports \[page 154\]](#)

Custom Trend Reports

Trend reports provide historical totals or submittal rates of items over days, weeks, months, and quarters. **Trend** reports that track historical totals use the system's change history for generating report data, allowing you to track totals for specific fields over a period of time. **Trend** reports that track submittal counts allow you to generate a report that shows current value totals of items submitted during the specified time period. **Trend** reports appear as tabular or graphical reports.

Content Options for Custom Trend Reports

The following options are available in the Content area for **Custom Trend** reports:

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.



Note: For graphical reports, labels may be truncated for fields that contain long selection values.

Trend Criteria

In the **Trend On** area, select one of the following options:

- **Historical Value Counts**

Select this option to generate a report that shows historical value totals of all items during the specified time period. For example, you can create a report that shows which types of items are active in the system at one-week intervals. To create this report, select the *Issue Type* field from the **1st Field** list, the *Active/Inactive* field from the **2nd Field** list, and then select **Weeks** from the **Total By** list.

- **Submittal Counts**

Select this option to generate a report that shows current value totals of items submitted during the specified time period. For example, you can create a report that shows the types of items that were submitted each quarter. To create this report, select the *Issue Type* field from the **1st Fields** list, and then select **Quarters** from the **Total By** list.

- **1st Field and 2nd Field**

From the drop-down lists, select the fields that you want the report to trend on. The list contains *Binary/Trinary*, *Single Relational*, *Sub-Relational*, *Single Selection*, and *User* fields. If you do not select fields from the drop-down lists to trend on, the report trends on the total number of items or submitted items found in the selected projects during the specified period of time. Available *Sub-Relational* fields include those that point to *Single Relational*, *Single Selection*, and *User* fields.



Note: To suppress values for the field you select, use the options available in the **Sorting** section. For details, refer to [Sorting in Custom Trend Reports \[page 122\]](#).

- **Total By**

Choose to increment results in days, weeks, months, or quarters. The date and time selected as a start date determines the beginning of the increment period. For example, if you specify Feb. 15 as a start date and select **Quarters** from the **Increment** drop-down list, report results are organized by quarter beginning with Feb. 15. For monthly increments, if you select a start date that does not apply to all months, such as Jan. 31, that date is only used when it applies. In addition, the specified end date is increased when needed to reflect an entire time period. If your last column starts at 3/30/2013 at 5 a.m. and you selected a monthly increment, the end date for the last column is 4/30/2013 at 5 a.m. For details on selecting start and end times for Trend reports, refer to [Search Filter for Custom Trend Reports \[page 121\]](#).

- **Sum Totals By**

Enables you to see the sum of certain field values rather than count each item returned by the report as one. The following table lists the applicable field types and examples.

Field Type	Notes	Example
Date/Time	Applies to Elapsed Time fields only.	Use to track the amount of work spent on a set of items, such as a team's work for a sprint.
Numeric		Use to track the amount of money spent on a set of items or the number of sprint points allocated for a set of items.

Field Type	Notes	Example
Single Selection	<p>Applies only to weights assigned to <i>Single Selection</i> field values. If weights are not applied, each item is counted as a single item.</p> <p>Contact your administrator to learn about the weights assigned to <i>Single Selection</i> fields in your system.</p>	<p>A <i>Priority</i> field may have these values and assigned weights: of High - 100, Medium - 50, and Low - 10. Each item returned by the report is counted using the weight from its <i>Priority</i> field selection.</p>

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as `AS Minus 5 OR Plus 5` (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as `Minus 5 OR Plus 5` (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

- **Show Labels and Calculate Time Intervals according to User's Time Zone**

Select this check box if you want column labels to display times and calculate time intervals in the time zone selected in the user profile for the user running the report. Clear the check box if you want labels to show times in Universal Coordinated Time (UTC).


Search Filter for Custom Trend Reports

Search filters enable you to narrow your search for items. Depending on your privileges, you can define basic conditions or Advanced SQL Conditions.



Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <code>severity in Critical</code>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Use Basic Conditions	Enables you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .

Option	Description
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .

About Current Values

When using search filters, remember that trend reports are based on the *current values* of the item. For example, if your report filters on *Active* items, and the report shows the following row for High Severity:

	Week 1	Week 2	Week 3	Current Week
High Severity	3	4	4	5

If you close a currently active item that was submitted in Week 1, then the report will change as follows:

	Week 1	Week 2	Week 3	Current Week
High Severity	2	3	3	4

Sorting in Custom Trend Reports

By default, all values for fields selected from the **1st Field** and **2nd Field** lists appear in the report. You can suppress and reorder these field values. However, for example, if you select the *Submitter* field for the row, you can choose to display the number of issues submitted by specific users instead of all users who submitted issues.

To suppress 1st Field and 2nd Field values:

1. In the Sorting section of the **Trend** report form for a custom Trend report, click the **Modify** button in the **Show Only 1st Field Values** area.
2. The field values for the field selected in the **1st Field** list appear in the left pane. Select the values that you want to appear in the report, and then click the right arrow to move the values to the right pane.



Tip: If there are more field selections than can be returned based on administrative settings, use the Value Find feature to search for values.

3. Use the up and down arrows to reorder the values as needed.
4. Click **OK**.
5. Click the **Modify** button in the **Show Only 2nd Field Values** area.

-
6. The field values for the field selected in the **2nd Field** list appear in the left pane. Use the **Value Find** as needed. Select the values that you want to appear in the report, and then click the right arrow to move the values to the right pane.
 7. Use the up and down arrows to reorder the values as needed.
 8. Click **OK**.

Additional Options for Custom Trend Reports

The following options are available in the Additional Options area of the **Custom Trend** report form. These options can be considered "advanced" report options.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Add Trend Lines (Graphs only)**

Select this check box to overlay report data with a linear regression that enables you to determine whether the numbers are increasing or decreasing. This option is best used with line charts and scatter charts, and is not available for tabular charts, horizontal bar charts, and percentile stacked bar charts.

- **Show Whole Rows and Columns of Zero (0)**

By default, **Distribution** reports do not show rows that have only zeros as values. Select this check box to show the rows that only have zeros as values.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Thresholds**

Thresholds allow you to apply visual indicators to your report that inform you when data rises above or falls below numbers you specify. Apply a color to each threshold that appears in the background of the report.

You can set a high threshold, a low threshold, or both. Thresholds cannot be used with percentile stacked bar charts, pie charts, doughnut charts, heatmap charts, or radar charts. The following threshold options are available:

- **Set High Threshold Greater Than** – Type a number that indicates a high threshold when the report data is greater than that number. For a report that

tracks the number of items submitted by particular users, you may want to set a high threshold that indicates when over 75 items have been submitted.

- **Set Low Threshold Less Than** – Type a number that indicates a low threshold when the report data is lower than that number. For a report that tracks the number of items submitted by particular users, you may want to set a low threshold that indicates when fewer than 10 items have been submitted.
 - **Using Color** – Click the **Color** link for each threshold to open the **Select Color** dialog box and select a color for each threshold. You must select a color if you set a high or low threshold. The color for each threshold appears in the background of the report.
- **Footer**
Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Choose Colors for Values**

Choose custom colors for values for the **!st Field** you selected on the **Content** tab. If you do not select colors, random colors are used.

Drill-Down Display Options for Custom Trend Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:


Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.


Field	Description
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Custom Trend Report Results

Custom Trend reports return a tabular or graphical representation of items based on your report criteria.

The following information and options display with **Custom Trend** report results.

Field	Description
Show TSV	<p>Click this button to open a window that displays the report in a tab-delimited format. This enables you to copy the report information and paste it into a spread sheet application, such as Microsoft Excel.</p> <p> Note: This option is not available for graphical reports. Alternatively, you can choose the Excel option to export report results.</p>
Graph or Table	Depending on the style you selected when you created the report, a table or graph showing the data that meets the report parameters displays.
Data Set Labels	For graphical reports, data set labels display for the report graphic. These labels use a color that corresponds to a category or column in the report.
Date/Time Labels	Labels for the date/time columns on the report depend on the time increment you reported on and whether you elected to display dates and times in local time or Coordinated Universal Time (UTC). If you selected the Show Labels and Calculate Time Intervals according to User's Time Zone check box on the report form, the local time zone is shown for the time zone specified in the user profile for the user running the report. The heading for date/time labels indicates whether the report is using local time or UTC.
Trend Lines and Trend Line Labels	If you selected the Add Trend Lines check box on the report form for a graphical report, trend lines display on the report background. Trend line labels display next to the data set labels.

Field	Description
Thresholds	<p>If you configured thresholds on the report form, the color you indicated for each threshold displays on the report background.</p> <p> Note: Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.</p>

**Note:**

The **Backlog** trend report is similar to a **Custom** trend report where you trend on the **Active/Inactive** field; however, there may be a slight difference in the results. The reason is that the two reports define open and closed in different ways.


The **Active/Inactive** custom trend uses each item's **Change History** to see when the item changed from active to inactive and from inactive to active. This change often occurs automatically as items move from active to inactive states and from inactive states to active states. The **Active/Inactive** field can also be changed manually by a user if the field is set as editable.

The **Backlog** trend report determines an item is open or closed by looking at how it moved from state to state in the past. It uses the current **Active/Inactive** setting on the state definition to determine if an item that was in that state a year ago was active or inactive at that time. This can lead to misleading categorization because state could have changed from being active to being inactive, or vice versa, during the past year. Also, the **Backlog** report does not take into account the possibility of manually altering the Active/Inactive field on individual items.

Trend Report Results

Trend reports return a tabular representation of items based on your report criteria.

The following information and options display with **Trend** report results.

Field	Description
Show TSV	<p>Click this button to open a window that displays the report in a tab-delimited format. This enables you to copy the report information and paste it into a spread sheet application, such as Microsoft Excel.</p> <p> Note: This option is not available for graphical reports. Alternatively, you can choose the Excel option to export report results.</p>
Data Set Labels	<p>For graphical reports, data set labels display for the report graphic. These labels use a color that corresponds to a category or column in the report.</p>

Field	Description
Date/ Time Labels	Labels for the date/time columns on the report depend on the time increment you reported on and whether you elected to display dates and times in local time or Coordinated Universal Time (UTC). If you selected the Show Labels and Calculate Time Intervals according to User's Time Zone check box on the report form, the local time zone is shown for the time zone specified in the user profile for the user running the report. The heading for date/time labels indicates whether the report is using local time or UTC.



Note:

The **Backlog** trend report is similar to a **Custom** trend report where you trend on the **Active/Inactive** field; however, there may be a slight difference in the results. The reason is that the two reports define open and closed in different ways.

The **Active/Inactive** custom trend uses each item's **Change History** to see when the item changed from active to inactive and from inactive to active. This change often occurs automatically as items move from active to inactive states and from inactive states to active states. The **Active/Inactive** field can also be changed manually by a user if the field is set as editable.

The **Backlog** trend report determines an item is open or closed by looking at how it moved from state to state in the past. It uses the current **Active/Inactive** setting on the state definition to determine if an item that was in that state a year ago was active or inactive at that time. This can lead to misleading categorization because state could have changed from being active to being inactive, or vice versa, during the past year. Also, the **Backlog** report does not take into account the possibility of manually altering the Active/Inactive field on individual items.

Estimated Backlog Trend Reports

The **Estimated Backlog Trend** reports provide a comparison of activities completed against activities planned over days, weeks, months, and quarters. The output is a line chart.

Content Options for Estimated Backlog Trend Reports

The following options are available in the Content area for **Estimated Backlog Trend** reports:

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Total By**

Choose to increment results in days, weeks, months, or quarters. The date and time selected as a start date determines the beginning of the increment period. For example, if you specify Feb. 15 as a start date and select **Quarters** from the **Increment** drop-down list, report results are organized by quarter beginning with Feb. 15. For monthly increments, if you select a start date that does not apply to all months, such as Jan. 31, that date is only used when it applies. In addition, the specified end date is increased when needed to reflect an entire time period. If your last column starts at 3/30/2013 at 5 a.m. and you selected a monthly increment, the end date for the last column is 4/30/2013 at 5 a.m. For details on selecting start and end times for Trend reports, refer to [Search Filter for Custom Trend Reports \[page 121\]](#).

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or you can specify a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as **MINUS 5** OR **PLUS 5** (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as **MINUS 5** OR **PLUS 5** (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter the number of preceding days, weeks, or months to include in the report results.

- **Future**

Enter the number of upcoming days, weeks, or months to include in the report results.

- **Estimated Completion Date**

Select the *Date/Time* field to be used as the estimated completion date.

- **Limit Time Period by Estimated Completion Date**

Select this check box to reduce the future period for the report using the actual estimated completion dates. For example, if you specify a future period of two months, and the **Estimated Completion Date** value for current items is only two weeks, the report will be truncated to two weeks in the future instead of two months.

- **Velocity Calculation Period**

Enter the number of preceding days to use to calculate the velocity. The velocity is the amount of items closed in this time period.

- **Milestones**

Optional. Select the relational field that points to the auxiliary table containing milestones, and then select the *Date/Time* field from the referenced auxiliary table. One vertical line appears for each milestone within the results.

- **Group By**

Optional. If you select a field by which to group items, one trend line appears for each value for that field that occurs within the results. For example, if you select the **Submitter** field, one trend line appears for each submitter of items returned by the query.

Search Filter for Estimated Backlog Reports

Search filters enable you to narrow your search for items.



Important: When using search filters, remember that trend reports are based on the *current values* of the item. For example, if your report filters on *Active* items, and the report shows the following row for High Severity:



	Week 1	Week 2	Week 3	Current Week
High Severity	3	4	4	5

If you close a currently active item that was submitted in Week 1, then the report will change as follows:

	Week 1	Week 2	Week 3	Current Week
High Severity	2	3	3	4

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.

Option	Description
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of Severity in Critical. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>

Additional Options for Estimated Backlog Reports

The following options are available in the Additional Options area of the **Estimated Backlog Trend** report form.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Chart Anchors**

Select this check box to easily show or hide the data points for line charts. This option is always enabled for scatter charts. You can use this option in combination with **Show Chart Values** to view data points and values simultaneously.

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Thresholds**

Thresholds allow you to apply visual indicators to your report that inform you when data rises above or falls below numbers you specify. Apply a color to each threshold that appears in the background of the report.

You can set a high threshold, a low threshold, or both. Thresholds cannot be used with percentile stacked bar charts, pie charts, doughnut charts, heatmap charts, or radar charts. The following threshold options are available:

- **Set High Threshold Greater Than** – Type a number that indicates a high threshold when the report data is greater than that number. For a report that tracks the number of items submitted by particular users, you may want to set a high threshold that indicates when over 75 items have been submitted.
 - **Set Low Threshold Less Than** – Type a number that indicates a low threshold when the report data is lower than that number. For a report that tracks the number of items submitted by particular users, you may want to set a low threshold that indicates when fewer than 10 items have been submitted.
 - **Using Color** – Click the **Color** link for each threshold to open the **Select Color** dialog box and select a color for each threshold. You must select a color if you set a high or low threshold. The color for each threshold appears in the background of the report.
- **Choose Colors for "Group By" field**
Choose custom colors for values for the **Group By** field you selected on the **Content** tab. If you do not select colors, random colors are used.

- **Choose Colors for "Milestones" field**

Choose custom colors for values for the **Milestones** field you selected on the **Content** tab. If you do not select colors, random colors are used.

Drill-Down Display Options for Estimated Backlog Trend Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:


Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Estimated Backlog Trend Report Results

Estimated Backlog Trend reports return a line representation of your report criteria.

The following information and options display with **Estimated Backlog Trend** report results.

Field	Description
Date/Time Labels	Labels for the date/time columns on the report depend on the time increment you reported on. The local time zone is shown for the time zone specified in the user profile for the user running the report.

Field	Description
Thresholds	<p>If you configured thresholds on the report form, the color you indicated for each threshold displays on the report background.</p> <p> Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.</p>
Trend Lines	<p>A special trend line displays the current velocity of item completion based on the configured previous period and continues the line into the future. If the velocity is zero, no trend line appears.</p>
Vertical Lines	<p>If configured, vertical lines show the milestones overlaid on the report results.</p>

Backlog Trend Reports

The **Backlog Trend** reports provide trends of open primary items within a selected time interval. The output is a tabular or graphical report.

Content Options for Backlog Trend Reports

The following options are available in the Content area for **Backlog Trend** reports:

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Total By**

Choose to increment results in days, weeks, months, or quarters. The date and time selected as a start date determines the beginning of the increment period. For example, if you specify Feb. 15 as a start date and select **Quarters** from the **Increment** drop-down list, report results are organized by quarter beginning with Feb. 15. For monthly increments, if you select a start date that does not apply to all months, such as Jan. 31, that date is only used when it applies. In addition, the specified end date is increased when needed to reflect an entire time period. If your last column starts at 3/30/2013 at 5 a.m. and you selected a monthly increment, the end date for the last column is 4/30/2013 at 5 a.m. For details on selecting start and end times for Trend reports, refer to [Search Filter for Custom Trend Reports \[page 121\]](#).

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as **MINUS 5** OR **PLUS 5** (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as **MINUS 5** OR **PLUS 5** (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

- **Group By**

Optional. If you select a field by which to group items, one trend line appears for each value for that field that occurs within the results. For example, if you select the **Submitter** field, one trend line appears for each submitter of items returned by the query.

- **Show trend line for all items**

Select this check box to display a trend line for all items in the project. This check box is only available for applications that contain the *Submit Date* system field.

Search Filter for Backlog Reports

Search filters enable you to narrow your search for items.




Important: When using search filters, remember that trend reports are based on the *current values* of the item. For example, if your report filters on *Active* items, and the report shows the following row for High Severity:


	Week 1	Week 2	Week 3	Current Week
High Severity	3	4	4	5

If you close a currently active item that was submitted in Week 1, then the report will change as follows:

	Week 1	Week 2	Week 3	Current Week
High Severity	2	3	3	4

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of Severity in Critical. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>

Option	Description
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>

Additional Options for Backlog Reports

The following options are available in the Additional Options area of the **Backlog Trend** report form.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Labels and Calculate Time Intervals according to User's Time Zone**

Select this check box if you want column labels to display times and calculate time intervals in the time zone selected in the user profile for the user running the report. Clear the check box if you want labels to show times in Universal Coordinated Time (UTC).

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence: `<Some Text>`.

- **Choose Colors for Values**

Choose custom colors for values for the **Group By** field you selected on the **Content** tab. If you do not select colors, random colors are used.

Drill-Down Display Options for Backlog Trend Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:

Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Backlog Report Results

Trend reports return a graphical representation the Backlog Trend of your report criteria. The following information and options display with **Backlog Trend** report results.

Field	Description
Data Set Labels	For graphical reports, data set labels display for the report graphic. These labels use a color that corresponds to a category or column in the report.
Date/Time Labels	Labels for the date/time columns on the report depend on the time increment you reported on and whether you elected to display dates and times in local time or Coordinated Universal Time (UTC). If you selected the Show Labels and Calculate Time Intervals according to User's Time Zone check box on the report form, the local time zone is shown for the time zone specified in the user profile for the user running the report. The heading for date/time labels indicates whether the report is using local time or UTC.

**Note:**

The **Backlog** trend report is similar to a **Custom** trend report where you trend on the **Active/Inactive** field; however, there may be a slight difference in the results. The reason is that the two reports define open and closed in different ways.

The **Active/Inactive** custom trend uses each item's **Change History** to see when the item changed from active to inactive and from inactive to active. This change often occurs automatically as items move from active to inactive states and from inactive states to active states. The **Active/Inactive** field can also be changed manually by a user if the field is set as editable.

The **Backlog** trend report determines an item is open or closed by looking at how it moved from state to state in the past. It uses the current **Active/Inactive** setting on the state definition to determine if an item that was in that state a year ago was active or inactive at that time. This can lead to misleading categorization because state could have changed from being active to being inactive, or vice versa, during the past year. Also, the **Backlog** report does not take into account the possibility of manually altering the Active/Inactive field on individual items.

Entering a State Trend Reports

The **Entering a State Trend** reports provide trends of primary items entering a selected state within a selected time interval. The output is a tabular or graphical report.

Content Options for Entering a State Trend Reports

The following options are available in the Content area for **Entering a State Trend** reports.

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For

example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Total By**

Choose to increment results in days, weeks, months, or quarters. The date and time selected as a start date determines the beginning of the increment period. For example, if you specify Feb. 15 as a start date and select **Quarters** from the **Increment** drop-down list, report results are organized by quarter beginning with Feb. 15. For monthly increments, if you select a start date that does not apply to all months, such as Jan. 31, that date is only used when it applies. In addition, the specified end date is increased when needed to reflect an entire time period. If your last column starts at 3/30/2013 at 5 a.m. and you selected a monthly increment, the end date for the last column is 4/30/2013 at 5 a.m. For details on selecting start and end times for Trend reports, refer to [Search Filter for Custom Trend Reports \[page 121\]](#).

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as **MINUS 5** Or **PLUS 5** (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as **Minus 5** or **Plus 5** (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

- **From States**

Select one or more states from which items that you want to track transition. The resulting report includes a trend line for each combination of **From States** and **Group By** values.

- **To State**

Select the state to which items that you want to track transition. The resulting report is based on items entering this state.



Note: The list of available values is determined by the project that you have selected and whether you have selected the sub-projects option in the **Search Filter** area.

- **Group By**

Optional. If you select a field by which to group items, one trend line appears for each value for that field that occurs within the results. For example, if you select the **Submitter** field, one trend line appears for each submitter of items returned by the query.

Search Filter for Entering a State Reports

Search filters enable you to narrow your search for items.





Important: When using search filters, remember that trend reports are based on the *current values* of the item. For example, if your report filters on *Active* items, and the report shows the following row for High Severity:

	Week 1	Week 2	Week 3	Current Week
High Severity	3	4	4	5

If you close a currently active item that was submitted in Week 1, then the report will change as follows:

	Week 1	Week 2	Week 3	Current Week
High Severity	2	3	3	4

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <i>Severity in Critical</i>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>

Additional Options for Entering a State Reports

The following options are available in the Additional Options area of the **Entering a State Trend** report form.

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Labels and Calculate Time Intervals according to User's Time Zone**

Select this check box if you want column labels to display times and calculate time intervals in the time zone selected in the user profile for the user running the report. Clear the check box if you want labels to show times in Universal Coordinated Time (UTC).

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

Drill-Down Display Options for Entering a State Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:

Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Entering a State Results

Trend reports return a graphical representation for items that entered the state during the time that was specified in your report criteria.

The following information and options display with **Entering a State Trend** report results.

Field	Description
Data Set Labels	For graphical reports, data set labels display for the report graphic. These labels use a color that corresponds to a category or column in the report.
Date/Time Labels	Labels for the date/time columns on the report depend on the time increment you reported on and whether you elected to display dates and times in local time or Coordinated Universal Time (UTC). If you selected the Show Labels and Calculate Time Intervals according to User's Time Zone check box on the report form, the local time zone is shown for the time zone specified in the user profile for the user running the report. The heading for date/time labels indicates whether the report is using local time or UTC.

Open and Completed Trend Reports

The **Open and Completed Trend** reports provide open/completed rates of primary items over days, weeks, months, and quarters. The output is a tabular or graphical report.

Content Options for Open and Completed Trend Reports

The following are options available in the Content area for **Open and Completed Trend** reports.

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Total By**

Choose to increment results in days, weeks, months, or quarters. The date and time selected as a start date determines the beginning of the increment period. For example, if you specify Feb. 15 as a start date and select **Quarters** from the **Increment** drop-down list, report results are organized by quarter beginning with Feb. 15. For monthly increments, if you select a start date that does not apply to all months, such as Jan. 31, that date is only used when it applies. In addition, the specified end date is increased when needed to reflect an entire time period. If your last column starts at 3/30/2013 at 5 a.m. and you selected a monthly increment, the end date for the last column is 4/30/2013 at 5 a.m. For details on selecting start and end times for Trend reports, refer to [Search Filter for Custom Trend Reports \[page 121\]](#).

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**
 - **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as `Minus 5` or `Plus 5` (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as `Minus 5` or `Plus 5` (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

- **Group By**

Optional. If you select a field by which to group items, one trend line appears for each value for that field that occurs within the results. For example, if you select the **Submitter** field, one trend line appears for each submitter of items returned by the query.

- **Completed Field Definition**

This field determines your definition of "completed" for items. You can choose to categorize all inactive items as completed, or you can specify your own condition by selecting the second option and then clicking the **Add** button.

Working with "Completed" Definitions

Use the **Completed Definition** area to specify the field and the field values that qualify an item as "completed", or to add an additional field and corresponding values to a multiple-field "completed" definition.

After you select a field from the **Fields** drop-down list, the **Operator** drop-down list contains values appropriate for that field, and the list box underneath the list of fields contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.

Select an operator, and then select the value or values that constitute your definition of "completed".



Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your definition into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.

Click **OK** to save your definition.

Search Filter for Open and Completed Reports

Search filters enable you to narrow your search for items.




Important: When using search filters, remember that trend reports are based on the *current values* of the item. For example, if your report filters on *Active* items, and the report shows the following row for High Severity:


	Week 1	Week 2	Week 3	Current Week
High Severity	3	4	4	5

If you close a currently active item that was submitted in Week 1, then the report will change as follows:

	Week 1	Week 2	Week 3	Current Week
High Severity	2	3	3	4

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of Severity in Critical. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>

Option	Description
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>

Additional Options for Open and Completed Reports

Additional Options

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Labels and Calculate Time Intervals according to User's Time Zone**

Select this check box if you want column labels to display times and calculate time intervals in the time zone selected in the user profile for the user running the report. Clear the check box if you want labels to show times in Universal Coordinated Time (UTC).

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence: `<Some Text>`.

Drill-Down Display Options for Open and Completed Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:

Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

Open and Completed Results

Open and Completed reports return a graphical representation for items that were open and completed during the time that was specified in your report criteria.

The following information and options display with **Open and Completed Trend** report results.

Field	Description
Data Set Labels	For graphical reports, data set labels display for the report graphic. These labels use a color that corresponds to a category or column in the report.
Date/Time Labels	Labels for the date/time columns on the report depend on the time increment you reported on and whether you elected to display dates and times in local time or Coordinated Universal Time (UTC). If you selected the Show Labels and Calculate Time Intervals according to User's Time Zone check box on the report form, the local time zone is shown for the time zone specified in the user profile for the user running the report. The heading for date/time labels indicates whether the report is using local time or UTC.

State Activity Reports

The **State Activity Trend** reports provide trends of primary items entering and leaving a selected state over a selected period of time. The output is a tabular or graphical report.

Content Options for State Activity Trend Reports

The following options are available in the Content area for **State Activity Trend** reports.

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Report Style**

Choose how to display your report.

Consider the following information when you select a report style:

- For graphical reports, labels may be truncated for fields that contain long selection values.
- If you select a tape chart and your data set contains more than five items, the lines in the chart may appear as black.
- The tape chart, area chart, and line chart styles do not display any data if the X axis contains only a single data point. For example, if you create a Distribution report, select a project with no sub-projects, and then set *Project* as the **Row** entry, no data appears for these styles. If you select a project with sub-projects (and there are items in the sub-projects), data is shown.

- **Total By**

Choose to increment results in days, weeks, months, or quarters. The date and time selected as a start date determines the beginning of the increment period. For example, if you specify Feb. 15 as a start date and select **Quarters** from the **Increment** drop-down list, report results are organized by quarter beginning with Feb. 15. For monthly increments, if you select a start date that does not apply to all months, such as Jan. 31, that date is only used when it applies. In addition, the specified end date is increased when needed to reflect an entire time period. If your last column starts at 3/30/2013 at 5 a.m. and you selected a monthly increment, the end date for the last column is 4/30/2013 at 5 a.m. For details on selecting start and end times for Trend reports, refer to [Search Filter for Custom Trend Reports \[page 121\]](#).

- **Time Period**

Specify a time period for the report. You can either specify a fixed period using a date range or a time period based on a number of days, weeks, or months that have passed prior to running the report.

- **Fixed Period**

- **Start Date**

This field is required; however, the time of day is optional. Click the calendar icon to select a date, enter a date specification using the format indicated below the input field, or click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed. You can also type custom values, such as **MINUS 5** OR **PLUS 5** (with a different number, if desired) to use custom plus and minus values.

Select the **Query At Runtime** check box to require users to enter the **Start Date** when the report is executed.

- **End Date**

This field is optional. If you do not specify an end date, the report uses the current date. Click **Date/Time Keywords** to use date values that are recalculated instead of a fixed date when the report is executed.

Select the **Query At Runtime** check box to require users to enter the **End Date** when the report is executed. You can also type custom values, such as **MINUS 5** OR **PLUS 5** (with a different number, if desired) to use custom plus and minus values.

- **Relative Period**

- **Last**

Enter a number of preceding days, weeks, or months to limit report results.

- **Select State**

Select the state on which the report is based. The report displays one trend line representing items entering the selected state and another representing items leaving the state.



Note: The list of available values is determined by the project that you have selected and whether you have selected the sub-projects option in the **Search Filter** area.

- **Group By**

Optional. If you select a field by which to group items, one trend line appears for each value for that field that occurs within the results. For example, if you select the **Submitter** field, one trend line appears for each submitter of items returned by the query.

Search Filter for State Activity Reports

Search filters enable you to narrow your search for items.



Important: When using search filters, remember that trend reports are based on the *current values* of the item. For example, if your report filters on *Active* items, and the report shows the following row for High Severity:



	Week 1	Week 2	Week 3	Current Week
High Severity	3	4	4	5

If you close a currently active item that was submitted in Week 1, then the report will change as follows:

	Week 1	Week 2	Week 3	Current Week
High Severity	2	3	3	4

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.

Option	Description
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <code>Severity in Critical</code>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>

Additional Options for State Activity Reports

Additional Options

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Labels and Calculate Time Intervals according to User's Time Zone**

Select this check box if you want column labels to display times and calculate time intervals in the time zone selected in the user profile for the user running the report. Clear the check box if you want labels to show times in Universal Coordinated Time (UTC).

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

Drill-Down Display Options for State Activity Reports

The following options are available in the **Drill-Down Display Options** area of the report form. They enable you to specify which fields to include in the drill-down reports as well as column widths and sorting criteria.



Note:

- **Drill-Down Display Options** may not be available if your administrator has disabled Flash components or in browsers that do not support HTML5.
- You cannot drill down into a report when it is contained in a Drill Through report and used to drive another report. See [Drill Through Reports \[page 166\]](#) for more information.

The following table describes each of the fields that you use to specify drill-down display options:

Field	Description
Use Value Display Format	Select this check box to use the default columns for the drill-down report. Clear the check box to enable the Select Columns to Display feature.
Select Columns to Display	Select the fields that you want to appear as columns in the drill-down reports. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.
Set Custom Field Widths	Optionally, specify the width (in pixels) for the columns in the drill-down reports.

Field	Description
Sorting	Select the fields on which you want to sort the data in the drill-down reports.

State Activity Results

State Activity reports return a graphical representation for items that were active in the state during the time that was specified in your report criteria.

The following information and options display with **State Activity Trend** report results.

Field	Description
Data Set Labels	For graphical reports, data set labels display for the report graphic. These labels use a color that corresponds to a category or column in the report.
Date/Time Labels	Labels for the date/time columns on the report depend on the time increment you reported on and whether you elected to display dates and times in local time or Coordinated Universal Time (UTC). If you selected the Show Labels and Calculate Time Intervals according to User's Time Zone check box on the report form, the local time zone is shown for the time zone specified in the user profile for the user running the report. The heading for date/time labels indicates whether the report is using local time or UTC.

Additional Options for Duration and Trend Reports

Additional Options

- **Show Labels and Calculate Time Intervals according to User's Time Zone**

Select this check box if you want column labels to display times and calculate time intervals in the time zone selected in the user profile for the user running the report. Clear the check box if you want labels to show times in Universal Coordinated Time (UTC).

- **Use Logarithmic Scale (Graphs only)**

Select this check box to apply a logarithmic scale to your report. You may want to do this to reduce your report results to a manageable range if they cover a large range of values. This option only applies to certain report styles, such as line, scatter, and bar charts.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting Export to Microsoft Excel), and `massselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.

- **Choose Colors for Values**

Choose custom colors for values shown in graphical reports. Values are based on the row and column fields you selected on the **Content** tab. Depending on the report style, color may be applied to row values, column values, or both. If you do not select colors, random colors are used.

- **Choose Colors for Values**

Choose custom colors for values for the **Group By** field you selected on the **Content** tab. If you do not select colors, random colors are used.

- **Add Columns of Calculations**

You can include calculations on *Numeric*, *Binary/Trinary*, and *Date/Time* fields in your report results. The calculations available are addition, subtraction, multiplication and division. For details, refer to [Calculations in Listing and Multi-Table Reports \[page 45\]](#).

To add a calculation to a report:

1. In the **Column** box, type the name that will appear as the Column Header in the report.
2. In the first calculation box, select a field that will serve as the first operator from the drop-down list.
3. Select an operand from the next list.



Note: Date fields can only be subtracted. Multiplying, dividing, and adding date fields will yield an error.



Note: For any calculation you create that begins with a *Date/Time* keyword (like *now* or *startof_thisweek*), you must ensure that the keyword is the first token in the expression. For example, the following expression:

Submit Date = (now Minus 30)

Should be specified as (without the parentheses):

Submit Date = now Minus 30

4. In the second calculation box, select a field that will serve as the second operator from the drop-down list.
5. Click **Add New Calculation** to add another calculation, if desired.



Tip: For *Date/Time* fields, click the **Date/Time Keywords** link to select a *Date/Time* keyword, such as *Now* or *Startof_NextWeek*, for your calculation.



Important: Certain calculations are not possible, such as multiplying, dividing or adding dates or *Date/Time* Keywords. Invalid calculations will result in an error when you run the report. The errors may prevent the report from running at all, resulting in the following message:

```
An error occurred while processing the last request.
```

```
The error was:
```

```
Database exception in ....
```

- **Show Whole Rows and Columns of Zero (0)**

By default, **Distribution** reports do not show rows that have only zeros as values. Select this check box to show the rows that only have zeros as values.

- **Show All Labels**

Some display labels are skipped if a large number of values is returned on the horizontal axis. Select this check box to show all labels. If the labels are difficult to read, clear this check box to show fewer labels. This option does not apply to tabular reports.

- **Show Chart Values**

Select this check box to show the number of items returned for each row on the graphical report. If a large number of values are returned, they may be difficult to read. You can clear this check box to show fewer values. To see values, hover your mouse over a bar or pie segment to view the number of items returned. This option does not apply to tabular reports.

- **Show Chart Anchors**

Select this check box to easily show or hide the data points for tape, line, and area charts. This option is always enabled for scatter charts. You can use this option in combination with **Show Chart Values** to view data points and values simultaneously.

- **Thresholds**

Thresholds allow you to apply visual indicators to your report that inform you when data rises above or falls below numbers you specify. Apply a color to each threshold that appears in the background of the report.

You can set a high threshold, a low threshold, or both. Thresholds cannot be used with percentile stacked bar charts, pie charts, doughnut charts, heatmap charts, or radar charts. The following threshold options are available:

-
- **Set High Threshold Greater Than** – Type a number that indicates a high threshold when the report data is greater than that number. For a report that tracks the number of items submitted by particular users, you may want to set a high threshold that indicates when over 75 items have been submitted.
 - **Set Low Threshold Less Than** – Type a number that indicates a low threshold when the report data is lower than that number. For a report that tracks the number of items submitted by particular users, you may want to set a low threshold that indicates when fewer than 10 items have been submitted.
 - **Using Color** – Click the **Color** link for each threshold to open the **Select Color** dialog box and select a color for each threshold. You must select a color if you set a high or low threshold. The color for each threshold appears in the background of the report.
- **Show SLA Fields**

If you have the appropriate privileges, select this check box to enable SLA fields to appear as selections in columns to display lists, sort by lists, and search filters. The fields are prefixed by "(SLA)".



Note: When you select this option, any report definition in progress will be cleared and you will need to create the report again.

Dashboard Reports

Dashboard reports display a collection of reports that can either interact with each other or display information from multiple independent reports.

- [Calendar Reports \[page 157\]](#)
- [Multi-Calendar Reports \[page 162\]](#)
- [Drill Through Reports \[page 166\]](#)
- [Multi-View Reports \[page 169\]](#)

Calendar Reports

Calendar reports enable you to visualize temporal data in a calendar format. When date-sensitive items are shown in a calendar format, you can instantly see the timing of tasks and how they fit together in your schedule. Each item that is returned in the Calendar report can display a few relevant fields of important information.

Also, Calendar reports can be combined into a Multi-Calendar report, which provides a comprehensive view of the data. For more information on Multi-Calendar reports, see [Multi-Calendar Reports \[page 162\]](#).

Key Benefits

- Allows you to visualize date-centric data in a user-friendly calendar format.
- Allows you to quickly and easily answer questions such as "Who is on vacation this month?" and "What are the critical milestones for my department in the next two months?"

Content Options for Calendar Reports

The following options are available in the Content area for **Calendar** reports.

- **Report Item Type**

Contains the primary table for the selected application and any auxiliary tables for which you have privileges. Select the table that contains the information for the report.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Event Start Field**

Select a *Date/Time* field that represents the starting date and time for the event you want to view. If an item's start date is null, the item does not appear on the calendar.



Tip: Some months display days from the prior month and the following month. If an event time range spans any part of the visual date range, it appears on the calendar even if the event does not actually start or end within the selected month.

- **Event End Field**

Select a *Date/Time* field that represents the end date and time for the event you want to view.

Use the **Event End Field** field if you want to view a date span for the item. If you do not want to view a span, do not select an end field.

If an item's end date is empty, the item appears on only one day in the calendar. If an item's end date is less than the start date, the item will only span one day.

- **Use Value Display Format**

Or

Primary Display Field

and

Secondary Display Field

Select the **Use Value Display Format** check box to display item details on the calendar using the current value display format. Otherwise, clear the check box and select primary and secondary fields to display for each item instead.

- **Initial Date**

Enter an **Initial Date** to start tracking. Click the calendar icon to select a specific date or click the **Date/Time Keywords** link to select a *Date/Time* keyword, such as *Now* or *Startof_NextWeek*.

- **Initial Time Period**

Set the **Initial Time Period** for the calendar to display. This controls whether the calendar initially displays in **Days, Weeks, or Months**.

- **Default Event Color**

Select a default color to display for all items in the calendar for this event. Click the current color to open the color picker. In the color picker, you can select a different color or type a HEX value to use a color of your choice.

- **Field Event Color**

Optionally, in the **Field Event Color** drop-down list, select a field and assign a color value to each of the field values. For example, assign different colors for active and inactive items.

If you select **(Default)**, the **Default Event Color** is used.

- **Default Event Icon**

Select a default icon to display for all items in the calendar for this event. Click the current icon to open the icon picker.

- **Field Event Icon**

Optionally, in the **Field Event Icon** drop-down list, select a field and assign an icon to each of the field values. For example, assign different icons for different *Priority* field values.

Search Filters for Calendar Reports


Search filters enable you to narrow your search for items. Depending on your privileges, you can define basic conditions or Advanced SQL Conditions.



Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.

Option	Description
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of <code>Severity in Critical</code>. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Use Basic Conditions	Enables you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .

Additional Options for Calendar Reports

The following options are available in the Additional Options area of the **Calendar** report form.

- **Footer**
Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Optional HTML Template**
This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting Export to Microsoft Excel), and `masselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the

templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.

Calendar Report Results

Calendar reports appear in a single frame in the content pane. Calendar reports can be combined into a single Multi-Calendar report view.

Click on items that appear in the report to view the item's details and change them. The item appears in a new content pane. After viewing, updating, or transitioning the item, click the **X** button to return to the original report.

The screenshot shows a calendar report for January 2013. On the left, a sidebar (1) lists owners: (None), Joe Manager, Newton Engineer, and Rhadka Tester. It also has checkboxes for Active/Inactive items. The main calendar area (2) displays a grid with horizontal bars representing items. The bars are color-coded: blue for bugs (e.g., BUG000080: Setup is not installing examples) and red for enhancements (e.g., ENH000090: Viewing animations in separate window). Navigation and display options (3, 4, 5, 6, 7) are visible at the top of the calendar view.

Use the following navigation and display options in the Calendar report:

1. The sidebar summarizes the number of items that are displayed for each field value (and their associated color or icon). Select or clear the check boxes to toggle the current display of these items. For example, if you want to temporarily hide all items owned by Samir, clear the check box next to his name under the *Owner* field.

The field values that appear in the sidebar depend on the items that are displayed for the current time period (month, week, day). For example, if Samir does not own any of the items that are displayed in the current month, his name does not appear under the *Owner* field (even if you assigned a specific color or icon to his name). However, if he owns items that are displayed in the previous month, his name appears in the sidebar when you view that month.

The sidebar does not appear if there are no events configured in the Calendar report.

2. Click the left arrow to hide the sidebar. Click the right arrow that appears while it is hidden to view the sidebar again.
3. Use the left and right arrows to shift to the next month, week, or day (depending on which option is currently selected in the **Initial Time Period** setting that is designated in the Calendar report).
4. Click **Today** to view the current day on the calendar.
5. Click the down arrow next to the current month, week, or day to display a specific date using a calendar.
6. Click the reload button to refresh the calendar's display. This means if a new item meets the report criteria, it will appear in the report. The current display options are not changed.
7. Change the calendar view to display by **Month**, **Week**, or **Day** by clicking the corresponding option above the calendar.

In addition:

- Hover over a displayed item to view the item's details and the event date span of the item.
- In the **Month** view, a number indicator (like **+3 more**) appears at the top of days that have additional items that can be viewed. Click the number that appears to switch to the day view and display the entire list. Click **Month** to return to the month view.



Tip: The number of additional items that are displayed depends on the current size of your browser. For example, if five items are currently displayed and you resize the browser to smaller size, less items are displayed and the indicator for the number of additional items to view increases.

- In the **Month** view, select a cell for a specific day and click **Day** to view the list of items for that day.
- In the **Month** view, if days from the preceding or following month are displayed, click them to display either the prior month or next month.

Multi-Calendar Reports

Multi-Calendar reports are a collection of Calendar reports that display date-sensitive items in a calendar format.

For example, you are a software manager who manages product lines and you want to visualize how your release schedules align with your key code delivery dates. You can:

1. Create a Calendar report that displays your upcoming release schedule.
2. Create a Calendar report that displays your upcoming key code delivery dates.
3. Create a Multi-Calendar report that displays both of these reports.



Note: Calendar feeds created in SBM Work Center cannot be added to Multi-Calendar reports. Similarly, Calendar reports cannot be used in Calendar views in SBM Work Center.

Key Benefits

- Enables you to view multiple Calendar reports in a single calendar view.
- Provides a unified view of all changes and releases for the enterprise.

Content Options for Multi-Calendar Reports

The following sections describe the configuration options available in the Content area for **Multi-Calendar** reports:

Selecting Calendar Reports

You can add any Calendar report that you have privileges to run to a Multi-Calendar report.

To select Calendar reports:

1. Enter all or part of the name of an existing Calendar report and click the search icon. Matching results appear in the drop-down list.
2. Click **Add** to add the Calendar report to your Multi-Calendar report. Click **Remove** to remove the report.
3. Use the arrows to change the display order of each Calendar.

Selecting the Initial Date and Time Period

Determine the date on which the report should begin, and specify how the calendar should initially display.

To set the initial date and time period:

1. Provide an **Initial Date** to start tracking. Click the calendar icon to select a specific date or click the **Date/Time Keywords** link to select a *Date/Time* keyword, such as *Now* or *Startof_NextWeek*.
2. Set the **Initial Time Period** for the calendar to display. This controls whether the calendar initially displays in **Days**, **Weeks**, or **Months**.

Additional Options for Multi-Calendar Reports

The following options are available in the Additional Options area of the **Multi-Calendar** report form.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence: `<Some Text>`.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting Export to Microsoft Excel), and `masselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.

Multi-Calendar Report Results

Multi-Calendar reports appear in a single frame in the content pane. The Multi-Calendar report display depends on which Calendar reports were selected on the report form.

Click on items that appear in the report to view an item's details. The item appears in a new content pane. After viewing, updating, or transitioning the item, click the **X** button to return to the original report.

The screenshot shows a web interface for 'DEV1 TEAM TASKS'. On the left, there is a 'CALENDAR FEEDS' sidebar with a tree view. Under 'Animation Pro items', there are filters for 'Owner' (None, Hans Tester, Laura Engineer, Rhadika Tester) and 'Active/Inactive' (Inactive, Active). Below that is 'Image Builder items'. The main area is a calendar for 'JANUARY 2013'. The calendar grid shows tasks listed by date. Callouts 1-7 point to various UI elements: 1 (calendar navigation), 2 (today button), 3 (month/year dropdown), 4 (refresh), 5 (calendar view dropdown), 6 (calendar grid), and 7 (calendar feeds sidebar).

Use the following navigation and display options in the Multi-Calendar report:

-
1. Click the left arrow to hide the **Calendars** pane. Click the right arrow that appears while it is hidden to view the **Calendars** pane again.
 2. Use the left and right arrows to shift to the next month, week, or day (depending on which option is currently selected in the **Initial Time Period** setting that is designated in the Calendar report).
 3. Click **Today** to view the current day on the calendar.
 4. Click the down arrow next to the current month, week, or day to display a specific date using a calendar.
 5. Click the reload button to refresh the calendar's display. This means if a new item meets the report criteria, it will appear in the report. The current display options are not changed.
 6. Change the calendar view to display by **Month**, **Week**, or **Day** by clicking the corresponding option above the calendar.
 7. The list of Calendar reports appears on the left. Use the check box next to the report name to show or hide the report. For example, if you want to temporarily hide all change requests, clear the check box next to that report.

Click the report name to expand or collapse the report's details.
 8. Use the check box next to each event to toggle the display on or off. For example, if your Calendar report displays the *Owner* field as an event, you can clear the check boxes next to the user names that appear to temporarily hide items that are owned by those users.

In addition:

- Hover over a displayed item to view the item's details and the event date span of the item.
- In the **Month** view, a number indicator (like **+3 more**) appears at the top of days that have additional items that can be viewed. Click the number that appears to switch to the day view and display the entire list. Click **Month** to return to the month view.



Tip: The number of additional items that are displayed depends on the current size of your browser. For example, if five items are currently displayed and you resize the browser to smaller size, less items are displayed and the indicator for the number of additional items to view increases.

- In the **Month** view, select a cell for a specific day and click **Day** to view the list of items for that day.
- In the **Month** view, if days from the preceding or following month are displayed, click them to display either the prior month or next month.

In the **Actions** drop-down list, click **Export to ICS** to export the events on the calendar to an ICS file, which you can import into an external calendar application. By default, the following data is exported for each event:

- Event title – Each event uses either the **Value Display Format** or the **Primary Display Field** value as the title for the event, depending on the option that is selected in the calendar feed or report definition.
- Event description – Each event uses the **Secondary Display Field** value (if provided) as the description for the event, if **Value Display Format** is not selected in the calendar feed or report definition.
- Event start/end dates – Each event uses the **Event Start Field** value and the **Event End Field** value (if provided) from the calendar feed or report definition. If an **Event End Field** is not specified, the duration of each event defaults to one hour.
- Alarm – A default alarm (15 minutes prior to the start of the event) is set for each event.

In addition, all events from one year of the current date are exported; however, you can export a particular date range by temporarily modifying the start and end date field values in the field specification for the feed or in the **Search Filter** tab of the report definition.

Drill Through Reports

Drill Through reports are a collection of a driver report and sub-reports that are tied together based on defined rules. The sub-reports are populated based on selections made in the driving report.

The key to creating useful Drill Through reports is to understand which report is *driving* the changes and which reports are *driven* by the driving report.

For example, you are a software manager who manages multiple teams and you need to know how items are distributed among each team. To assess possible risks, you also need to see the distribution for each developer and the trend for the length of time items are opened and closed for each developer. In the scenario you would create this Drill Through report as follows:

1. Distribution of all Open Items by Team.
2. Distribution of items by Developer. (Driven by Team from Report 1)
3. Open and Close Trend. (Driven by Developer from Report 2)

Report 1 is the main driver. Clicking on a particular team in *Report 1* filters *Report 2* to display the items broken down by developer for that team. Clicking a particular developer in *Report 2* will drive *Report 3* by displaying the trend report for that developer's items.

Before creating your Drill Through report you must create the reports that will be displayed. The main driving report will be a distribution report that summarizes the overall data to display. You will then have one to three additional sub-reports that will be driven by either this driving report or a different sub-report. These sub-reports give users a different dimensional view of the summarized data. For example, if you have the issues summarized by **Products** in your Driving Report, then the sub-report may show how the issues are distributed across developers in that product line. In this example, the **Products** report drives the **Distribution Across Developers** report.



Note: **Drill Through** reports are different than **Drill Down** reports. Drill Down reports allow users to navigate from a summarized view to a listing of all the individual items. Drill Through reports allow users to see different dimensions of the same data in variable report formats.

In addition, Multi-View and Drill Through reports display multiple reports on one page. The main differences are that Multi-View reports can display any report type in any order on the page while Drill Through reports are designed for Distribution reports which pass information between the different reports.

Key Benefits

- Drill Through reports are interactive reports driven from a distribution report, that allows users to see different dimensions of the data from the same application.
- Drill Through reports create a full spectrum multi-view report with high-level visibility and the ability to drill through into more granular details.

Content Options for Drill Through Reports

The following sections describe the configuration options available in the Content area for **Drill Through** reports:

Selecting Reports and Data Bindings for Your Drill Through Report



You can add any report that you have privileges to run to a Drill Through report, except:

- Reports that contain query-at-runtime parameters
- **Deleted Item** reports
- **Multi-View** reports
- Other **Drill Through** reports



Note: All **Drill Through** reports should be based on the same application. You cannot pass data from a report in one application into a report from another application.

To select reports for a Drill Through report:

1. Select your driving report by searching for your report and choosing it from the results.
 - The Driving Report report is a Distribution report that contains the data that you want to "Drill Through" to.
 - To search for a report in the list, type a keyword or part of a keyword contained in the report title in the box next to the  button, and then click .

2. Select Report 2 using the same process. Note that Report 2 will be driven by the Driving Report.
3. Right-click on the arrow between the Driving Report and Report 2, and select the data that you want to pass from the Driving Report to Report 2.




Important: The arrow only becomes active after you select Report 2.

See [Drill Through Report Results \[page 168\]](#) for an example of how you could configure a Drill Through report.

4. Repeat Steps 2 and 3 to add additional reports such as Report 3 and Report 4.



Note: If you do pick a report with drill down functionality and if you have not set any drill through rules, then when the user clicks on the report, the drill down functionality will be active. If the drill down report is set with drill through rules, such as the Driving Report, then the drill down functionality will be deactivated.

To remove a report from the box, select it and click . This will cause all of the reports to move up one space. For example, if you delete Report 2, then Report 3 will move to Report 2's location. Note that you cannot delete the Driving Report; however, you can replace it by selecting a new one.

Selecting a Layout Design for Your Drill Through Report

You can choose from several layout designs to display your **Drill Through** report. By default, reports included in a **Drill Through** report are displayed in a grid format in the order specified in the **Select Layout** box. For best results, use this layout design for Listing-type reports.

You can also choose to display reports side by side or in a variety of other layout designs. Graphical and tabular reports are best suited for these layout designs.

To select a layout design:

1. Click the **Up** and **Down** arrows next to the **Select Layout** box to view the provided designs. The layout design selected when the report is saved is used to display the **Drill Through** report.

Drill Through Report Results

Drill Through reports allow you to click on data in one report and populate the linked reports with the selected data.

The following example explains how you would use a Drill Through report:

1. **Report 1** is a driving report. It is a Percentile Stacked Bar chart report that shows the distribution of items based on State and Severity. Click on a segment in one of the bars in Report 1, and then Reports 2 and 3 will be updated with the selected data. The Drill Through report is configured to pass both Severity and State (Column and Row) to the other reports, which means only the items referenced by the particular segment would be passed.
2. **Report 2** is a bar chart showing the distribution of items for each developer based on functional area. Selecting any of the columns will update Report 3 with the items that you have selected.



3. **Report 3** is an Open and Completed trend report. It shows the completion trend for the items that were selected in either Report 1 or Report 2.



Zoom Icons



Note: Drill down reports that are used to drive other reports, like Report 1 and Report 2 in the previous example, will not allow users to drill down.

Click the zoom-in icon  to expand a report to the full pane. Click the zoom-out icon  to return to the drill through view.

Multi-View Reports

Multi-View reports allow you to view multiple existing reports, including built-in and application reports, in a single report. You can add single reports created against different primary and auxiliary tables to a single **Multi-View** report, enabling you to view data from a variety of applications and auxiliary tables.

Use the Multi-View report to create a dashboard which displays information across projects and applications. For example, you can create a **Multi-View** report that contains a graphical **Distribution** report from one application, a **Listing** report from another application, and the "All Primary Items I Own" built-in report. SBM provides a variety of different layout designs for you to select for your **Multi-View** report. This feature is especially useful for displaying graphical and tabular reports.



Note: Both Multi-View and Drill Through reports display multiple reports on one page. The main differences are that Multi-View reports can display any report type in any order on the page while Drill Through reports are designed for Distribution reports which pass information between the different reports.

Content Options for Multi-View Reports

The following options are available in the Content area for **Multi-View** reports.

Selecting a Layout Design for Your Multi-View Report

You can choose from several layout designs to display your **Multi-View** report. By default, reports included in a **Multi-View** report are displayed one on top of another in the order specified in the **Select Layout** box. For best results, use this layout design for Listing-type reports.

You can also choose to display reports side by side or in a variety of other layout designs. Graphical and tabular reports are best suited for these layout designs.

To select a layout design, click the Up and Down arrows next to the Select Layout box to view the provided designs. The layout design selected when the report is saved is used to display the Multi-View report.

Selecting Reports for Your Multi-View Report

You can add any report you have privileges to run to a Multi-View reports, except:

- **Deleted Item** reports
- **Drill Through** reports
- Other **Multi-View** reports
- Reports that contain query-at-runtime parameters



Tip: If you experience poor performance when you run a **Multi-View** report, consider removing reports from the list.

To select reports for a Multi-View report:



1. From the **Reports** drop-down list, select a report, and then click **Add** to add it to the **Select Reports** box. To search for a report in the list, type a keyword or part of a keyword contained in the report title, and then click the search icon.
2. If you selected a built-in report that is not an "all tables" report, you must select primary table from the **Type (if Built-in)** list. Graphical and tabular reports in the list are preceded by an asterisk (*).
3. To rearrange the order in which reports display, select a report and move it using the **Up** and **Down** arrows.
4. To remove a report from the box, select it and click **Remove**.

Multi-View Report Results

Multi-View reports appear in a single frame in the content pane. The **Multi-View** report display depends on which reports and layout designs were selected on the report form and whether or not you are viewing folders. The **Create Link In** option is only available if a **Listing** report is included in the report and folders are displayed.

Links in single reports within **Multi-View** reports indicate that you can view an item within the report. Click the link to view an item in the content pane. After viewing, updating, or transitioning the item, click the **Back to Results** link to return to the original report.

Zoom Icons

Click the zoom-in icon () to expand a report to the full pane, or to enable edit mode for reports using the Editable Grid. Click the zoom-out icon () to return to the multi-report view.

Other Reports

The remaining reports are available under the **Other** reports category. These reports enable you to list more details about items, specify a URL as a report, list the state change history for items, and create reports on data stored in the VCACTIONS table by your version control plug-in.

- [Details Reports \[page 171\]](#)
- [External Reports \[page 174\]](#)
- [State Change Reports \[page 174\]](#)
- [Version Control Actions Reports \[page 177\]](#)

Details Reports

Details reports display the details of the items that meet the report criteria. Select field sections that appear in the report. When you print **Details Reports**, a page break is placed between each item so that each prints individually.

Content Options for Details Reports

The following options are available in the Content area for **Details** reports.

- **Report Item Type**

Contains the primary table for the selected application and any auxiliary tables for which you have privileges. Select the table that contains the information for the report.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Sections to Display**

You can select the field sections that contain the fields you want to display in the **Details** report. Fields in the *Standard* field section always appear in the report, but you can choose to display fields in the *User*, *Advanced*, *Manager*, *System*, and *Hidden* sections, and the Change History, Notes, and Version Control History sections. Your administrator can rename field sections, so field section labels can vary.

Your user profile also determines which field sections appear when you run a **Details** report. To show or hide field sections, go to the **Sections** tab of your user profile.



Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.


Search Filters for Details Reports

Search filters enable you to narrow your search for items. Depending on your privileges, you can define basic conditions or Advanced SQL Conditions.



Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list. This option is not available for reports created against auxiliary tables.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of Severity in Critical. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Use Basic Conditions	Enables you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .

Option	Description
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .

Sorting Options for Details Reports

The **Always Perform a Primary Sort by Project** option enables you to sort items returned in the report by project hierarchy. The check box is selected by default.

To disable sorting by project and display items randomly, clear the **Always Perform a Primary Sort by Project** check box.

Additional Options for Details Reports

The following options are available in the Additional Options area of the **Details** report form. These options can be considered "advanced" report options.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence: `<Some Text>`.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting Export to Microsoft Excel), and `massselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.

Details Report Results

Details report results and search results displayed in details view are returned in the **Item List** pane.

For reports created against primary items, the project hierarchy is provided for each project in the item list. By default, items are sorted by project hierarchy.

Because **Details** reports can display a large amount of data, your administrator can set the maximum number of items that display per page in a **Details** report. This number can be different than the **Items Per Page** setting in your user profile. Click the **Next**, **Last**, and **All** links at the bottom of the **Item List** pane to view **Details** reports items.

External Reports

External reports enable you to specify any URL and store it as a report. For example, you can specify a URL for a report created in an external reporting tool, such as Crystal Reports. This external report can then be combined with other Crystal Reports or SBM reports in a **Multi-View** report.

Viewing External Reports

External reports display the Web page for the URL specified on the External report form. Depending on the size of the Web page, you may need to scroll to view its entire contents.



Tip: If you use SBM Work Center, consider adding a widget that displays an external Web page to a dashboard rather than use External reports.

State Change Reports

The **State Change** report displays the state changes for primary items that meet the report criteria. The **State Change** report results show the item id, each state in which an item resided, and the amount of time an item resided in each state.

Content Options for State Change Reports

The following options are available in the Content area for **State Change** reports.

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Select States**

Limits the report output to the selected states.

- **Select Columns to Display**

Select fields from the primary table to appear as columns in your report results. To select or deselect a field, move it to or from the right-hand box using the arrow buttons.





Note: The field will display the value that the item had at the exact state (not the latest value), or it will be empty if no value was set when the item was submitted.

- **Set Custom Field Widths**

Optionally, specify the width (in pixels) for the columns in your report.

Search Filters for State Change Reports

Select the following options for creating a search filter for your report:

Option	Description
Include Items From Sub-projects	Select this check box to include items from sub-projects of the project selected from the Report Project list.
Show Search Filter In Results	Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.
Limit selections using field dependencies and project selections	Select this check box to filter field values based on field-type dependencies and the project selected for the report. When you add an independent field to the search filter, the value you select determines the available values for any dependent fields that you add to the search filter.  Note: Changing this setting does not affect values that have already been selected.
Use Basic Conditions	Allow you to define a search filter by making selections from the list of fields. For detailed information about using basic conditions, refer to Using Basic Conditions in SBM Reports [page 183] .
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .  Note: You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the Use Basic Conditions option, your Advanced SQL is not converted to a basic condition.

Sort Options for State Change Reports

Select the **Always Perform a Primary Sort by Project** check box to sort items by project hierarchy. This option is only applicable if you include multiple projects in your report.

If you clear the **Always Perform a Primary Sort by Project** check box, items are listed randomly.

Additional State Change Report Options

The following options are available in the Additional Options area of the **State Change** report form. These options can be considered "advanced" report options.

- **Calculate Days [days] hh:mm:ss**

Select this check box to display the amount of time each item has resided in a state in days, hours, minutes, and seconds. If the **Calculate Days** check box is not selected, elapsed time appears in hours, minutes, and seconds.

- **Repeat Item IDs**

Select this check box to show the item ID for each line of data. Use this if you plan to export the report to another application, such as Microsoft Excel.

- **Hide Project Titles**

Select this check box to hide project hierarchy headings in the report. Use this if you plan to export the report to another application, such as Microsoft Excel. You cannot clear the **Hide Project Titles** check box if the **Always Perform a Primary Sort by Project** check box is selected.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting `Export to Microsoft Excel`), and `massselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.




Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.

State Change Report Results

The following information and options appear in the **Item List** pane for a **State Change** report:

Field	Description
Project Hierarchy	The project hierarchy is included as column headers if you do not select Hide Project Titles check boxes on the report form. The project hierarchy is provided for each project in the item list, and primary items that match the report search parameters are listed in the project in which they reside. Projects in the hierarchy that do not have items that match the criteria do not display.
Primary Item	This column shows the Item ID and provides a link to detailed information about the item. If the Repeat Item IDs check box is selected on the report form, the Item ID for an item appears as a link, followed by repeated Item IDs in plain text.
New Value	This column shows different states in which the item has resided. States are listed.
Timestamp of Change	This column shows when the item was transitioned to the state listed in the New Field Value column.
Elapsed Time	<p>This column shows the elapsed time an item resided in a specific state, the total elapsed time for each item, and the amount of time elapsed between the time an item was submitted and the current date/time. Elapsed time appears in days, hours, minutes, and seconds if the Calculate Days check box was selected when you created the report. If the Calculate Days check box was not selected, elapsed time appears in hours, minutes, and seconds. Note that if the <i>Submit Date</i> and <i>Close Date</i> fields are not available in your application, elapsed time for submit to close date is omitted from report results.</p> <p> Note: If you do not have privileges to view data from specific fields, the information appears as asterisks in the report.</p>

Version Control Actions Reports



Note: These reports are available only to on-premise customers.

Version Control Actions reports allow SourceBridge and most version control integration users to access information pertaining to source code files associated with SBM primary items. You can generate reports based on items associated with files checked in or checked out, date ranges, and process app users performing version control actions through SourceBridge or another version control integration tool. File association records can also be accessed using **Version Control Actions** reports.

Because version control actions and file associations are associated only with primary items, you can only generate **Version Control Actions** reports for primary tables.



Note: Perform version control actions cannot be retrieved by **Version Control Actions** reports.

Content Options for Version Control Actions Reports

The following options are available in the Content area for **Version Control Actions** reports.

- **Report Item Type**

Indicates the application the report is based on.

- **Report Project**

For reports based on primary tables, the project you select when creating a report determines which items are returned in your report. The project selection also determines where the report is stored and which users can access the report. For example, if you select Project A, only users who have privileges to run reports in Project A can run the report.

For details, refer to [Selecting a Report Project \[page 39\]](#).

- **Select Columns to Display**

You can select fields to display in your report results. You can also rearrange the order in which these fields appear in the report. The following fields are available for Version Control Actions reports:

Field	Description
Associated Item Table	Displays the name of the primary table in which items containing version control records or file associations are stored.
Associated Business Process Apps Item	Displays the title of the primary item associated with the actions or associations.
Closing Action	Displays the closing action or association against a file.
Closing Date/Time	Displays the time of the closing action or association against a file.
Closing Revision	Displays the version ID of the file at the closing action or association.
Closing User	Displays the name of the process app user who performed the closing action or association.
File Name	Displays the name of the file.

Field	Description
Initiating Action	Displays the initiating action or association against a file.
Initiating Date/Time	Displays the time of the initiating action or association against a file.
Initiating Revision	Displays the version ID of the file at the initiating action or association.
Initiating User	Displays the name of the process app user who performed the initiating action or association.
Log Message	Displays the log message or comment appended to the file.
URL	Displays a link to the version control tool's Web interface, if applicable. The URL is associated with the closing version ID; however, the link properties may differ depending on the version control integration you are using.
VC Integration	Displays the name of the integration tool associated with version control actions. SourceBridge (generic) appears as the integration tool for all associations made from SourceBridge and from file associations.

- **Set Custom Field Widths**

By default, the width of field columns is set automatically based on the size of your browser window and the number of fields displayed on the report. You can force the column for a selected field to be larger or smaller by specifying an absolute width in pixels.

To change the display width of a field, select a field in the left pane, and then click the **Set Custom Field Widths** link to specify a display width in pixels for the field. You can then move the field to the right pane.

Calculations in Version Control Actions Reports

In **Version Control Actions** reports, perform calculations on the *Closing Date/Time* and *Initiating Date/Time* fields. Use *Date/Time* keywords, such as *Now* and *Startof_LastWeek*, in these calculations.

To calculate how long a source file associated with a primary item was checked out, specify the following parameters in the **Calculated Fields to Display** section of the report form:

Entire Time Checked Out = *Closing Date/Time* - *Initiating Date/Time*



To calculate the amount of time a file has been checked out, specify the following parameters in the **Calculated Fields to Display** section of the report form:

Elapsed Time Checked Out = *Now* - *Initiating Date/Time*

Search Filters for Version Control Actions Reports

Search filters enable you to narrow your search for items.

Select the following options for creating a search filter for your report:

Option	Description
Show Search Filter In Results	<p>Select this option to display your Search Filter settings in the output of the report. This option allows report viewers to see which filters are used in the report. It is also helpful when you select to print a report, since it displays which Query At Runtime parameters were selected.</p>
Limit selections using field dependencies and project selections	<p>Select this check box to use the project's field dependency rules.</p> <p>For example, in Project A, the Priority field has a dependency with the Severity field. The dependency states that when the Severity field is Critical, then the Priority field must be 1 or 2.</p> <p>You create a report on Project A and add a Search Specification of Severity in Critical. Then, you add a Search Specification for the Priority field. The available Field Values for the Priority field will be limited to 1 and 2.</p> <p>Changing this setting does not affect values that have already been selected.</p> <p> Restriction: Dependencies are only honored for fields that have the Allow searching option selected in the field definition.</p>
Basic Conditions	<p>When you select a field from the Fields drop-down list, the Operator drop-down list contains values appropriate for that field, and the list box underneath the list of field values contains the possible values for that field. In some cases, you see a search icon, which you can use to filter the list of values.</p> <p>Select an operator, and then select the value or values that constitute your search criterion.</p> <p> Note: If there are arrow buttons and a second list box to hold field values, you can either use the arrow buttons to move values that you want in your criterion into the right-hand box, or you can multi-select the values in the left-hand box; however, do not use both mechanisms at once.</p> <p>Click OK to save your criterion.</p>

Option	Description
Use Advanced SQL Conditions (on-premise customers only)	SQL (Structured Query Language) is an industry-standard language for selecting records from a database. For detailed information about using Advanced SQL conditions in SBM reports, refer to Using Advanced SQL Conditions in SBM Reports [page 192] .

NOTES:

- The **Version Control Actions** report only supports the pass-through method @ modifier when you use an Advanced SQL condition. Privileges granted by your administrator determine if you can create a **Version Control Actions** report using Advanced SQL conditions.
- You can change the type of condition the report uses, but your search criteria is not converted. For example, if you specify an Advanced SQL condition, and then select the **Use Basic Conditions** option, your Advanced SQL is not converted to a basic condition.

Sorting Options for Version Control Actions Report

Sort options enable you to sort search results based on values in selected fields. For example, you can sort items by the user who performed initiating actions or associations.



Tip: The fields you select for sorting are independent of the fields you select to display. For best results, you may want to display the fields you choose for sorting. For details, refer to [Content Options for Version Control Actions Reports \[page 178\]](#).

The following sorting options are available:

Option	Description
Sort by / Then by	From the drop-down lists, select the fields for which you want to sort report results based on field values. Fields available for sorting are <i>Closing Action (Grouping only)</i> , <i>Closing Date/Time</i> , <i>Closing Revision</i> , <i>Closing User</i> , <i>Initiating Action (Grouping only)</i> , <i>Initiating Date/Time</i> , <i>Initiating Revision</i> , <i>Initiating User</i> , and <i>VC Integration (Grouping Only)</i> .
Ascending / Descending	Select one of these options for each field to specify its sort order.

Additional Options for Version Control Actions Reports

The following options are available in the Additional Options area of the **Version Control Actions** report form. These options can be considered "advanced" report options.

- **Add Columns of Calculations**

You can include a calculation of *Closing Date/Time - Initiating Date/Time*. Click the **Date/Time Keywords** link to select a *Date/Time* keyword, such as *Now* or *Startof_NextWeek*, for your calculation. Calculated fields display last in the report. For details, refer to [Calculations in Version Control Actions Reports \[page 179\]](#).

To add a calculation to a report:

1. In the **Column** box, type the name that will appear as the Column Header in the report.
2. In the first calculation box, select **Closing Date/Time**.
3. Select the subtraction (-) operator from the next list.
4. In the second calculation box, select *Initiating Date/Time* from the drop-down list.



Note: The Database Management System (DBMS) performs the calculations, so SBM cannot catch errors, like division by zero, before it causes the report to fail. Also, date calculations that result in a negative number may not appear in the report.

- **Footer**

Optionally, supply a footer for your report.



Note: The footer renders some common HTML tags such as `<i>`, ``, and ``. However, this means that character entity references such as `>`, `<`, `"`, and `&` are not encoded in the footer. Therefore, in order to display `<Some Text>` in the footer, you must send the following encoded sequence:
`<Some Text>`.

- **Optional HTML Template**

This drop-down list contains HTML templates for customizing the look of your report. Provided templates include `excellist.htm`, which improves the display of Listing report results when they are exported (by right-clicking the report output and then selecting `Export to Microsoft Excel`), and `massselectlist.htm`, which provides buttons at the top of the page, enabling you to select or clear the check boxes for all items in the results list. Your administrator can customize report templates, and the templates in the list may or may not apply to the type of report you are creating. Select the template from the drop-down list.



Note: This option is available for Listing reports.

If you change the HTML template in a report that is on a dashboard, the change is not reflected in the affected report. You must re-add the updated report after you save the template change.

Version Control Actions Report Results

The **Version Control Actions** report appears in the **Item List** pane. The list of primary items that contain version control action or file association information displays fields you selected from the **Fields to Display** drop-down lists when you created the report.

The first field selected to appear in the report form is a link to the item, which appears in the **Item Details** pane.

Chapter 5: Report Search Criteria

- [Using Basic Conditions in SBM Reports \[page 183\]](#)
- [Using Advanced SQL Conditions in SBM Reports \[page 192\]](#)
- [Combining Basic Conditions and Advanced SQL Conditions \[page 202\]](#)

Using Basic Conditions in SBM Reports

Reports that use basic conditions allow you to define search filters by selecting fields and search criteria for those fields.

The **Search Filter** box contains the conditions that make up search criteria for your report. Conditions are separated by a dotted line and contain either an **AND** or an **OR** operator. You can also group conditions using parentheses.

Basic conditions can be used to define most common search filters. For example, to create a **Listing** report that includes items that are in the Assigned state *and* that are assigned to a specific engineer, create the following conditions:

State in Assigned

AND

Engineer in Laura Engineer

For details, refer to:

- [Creating Search Filters Using Basic Conditions \[page 183\]](#)
- [Advanced Search Filter Options \[page 184\]](#)
- [Modifying Conditions Used in Search Filters \[page 185\]](#)
- [Removing Conditions from Search Filters \[page 185\]](#)
- [Working with Field Search Specifications \[page 185\]](#)

Creating Search Filters Using Basic Conditions

To create search filters using basic conditions:

1. Open the report form for an existing report or by creating a new report.
2. In the **Search Filter** area of the form, select the **Use Basic Conditions** option. If your privileges only enable you to create basic conditions, this option is not available.
3. Click **Add** to show **Field Specifications**.
4. From the **Fields** drop-down list, select a field for which you want to create a search condition. Select an operator and field values as needed and as described in [Working with Field Search Specifications \[page 185\]](#). Optionally, select **(Filters)** if you want


to find and use a report filter from list of pre-defined report filters. You can also combine one or more filters or use them in combination with fields to define your search conditions.

5. Click **OK** to add the condition to the **Search Filter** box.
6. Add conditions and use the up and down arrows to reorder conditions as needed.
7. Click the **Advanced** link to specify search operators (**AND** and **OR**) for the conditions, group conditions by using parentheses to set a sequence for evaluating conditions, and re-order conditions as needed and as described in [Advanced Search Filter Options \[page 184\]](#).
8. After specifying conditions for the report, preview or save the report.

Advanced Search Filter Options

Click the **Advanced** link under the Search Filter box to specify search operators (**AND** and **OR**) for the conditions and to group conditions by using parentheses to set a sequence for evaluating conditions.

The following advanced options are available:

Option	Description
AND	Select a condition, and then click AND to include it with the preceding condition. The AND operator returns all items that meet all conditions defined in the search parameters. For example, the conditions "Owner in Joe Manager" AND "State in New" return all items that are in the "New" state AND are owned by Joe Manager.
OR	Select a condition, and then click OR to include it with the preceding condition. The OR operator returns any items that meet the conditions defined in the search parameters. For example, the conditions "Owner in Joe Manager" OR "State in New" return any items that are in the "New" state or are owned by Joe Manager.  Note: The last operator you select is remembered. For example, if you select the OR operator for a condition, OR is selected by default until you select the AND operator.
Add Opening Parenthesis (+)	Select a condition, and then click the Add Opening Parenthesis button to begin a sequence for evaluating conditions. The opening parenthesis is always added after the AND or OR operator.
Add Closing Parenthesis)+	Select a condition, and then click the Add Closing Parenthesis button to end a sequence for evaluating conditions. The closing parenthesis is always added at the end of the selected condition.

Option	Description
Remove Opening Parenthesis (-	Select a condition that contains an opening parenthesis, and then click the Remove Opening Parenthesis button to remove the parenthesis.
Remove Closing Parenthesis)-	Select a condition that contains an closing parenthesis, and then click the Remove Closing Parenthesis button to remove the parenthesis.

Modifying Conditions Used in Search Filters

You can modify field values and operators for search filter conditions. You cannot change which field is queried by modifying a condition, however; you must add a new condition in this case.

To modify a condition:

1. In the **Search Filter** box, select a condition, and then click **Modify**.
2. The **Field Specifications** dialog box opens with the condition selected.
3. Modify the condition as needed. For details, refer to [Working with Field Search Specifications \[page 185\]](#).



Note: You cannot modify the field while you are modifying a condition.

Removing Conditions from Search Filters

To remove a condition from a search filter:

1. In the **Search Filter** box, select a condition.
2. Click **Remove**.

Working with Field Search Specifications

The **Field Specification** area enables you to narrow your search by specifying fields and field values that should be queried or one or more report filters. Each field or filter you use in your search filter is considered a "condition."

You construct a condition using the following elements:

- **Fields** – For details, refer to [Selecting Fields for a Condition \[page 186\]](#).
- **Operators** – For details, refer to [Condition Operators \[page 186\]](#).
- **Field Values** – For details, refer to [Selecting Field Values for a Condition \[page 189\]](#).

Selecting Fields for a Condition

You can add any fields available in the table that you are creating the report against, but your privileges determine whether results are returned based on your search filter.

Use the following information when selecting a field for a condition:

- The field or filter you select from the **Fields** list controls the options available to you in the **Operator** and **Field Values** lists. For details, refer to [Condition Operators \[page 186\]](#) and [Selecting Field Values for a Condition \[page 189\]](#).
- You can override the **Report Project** setting on the report form by creating a condition that contains the *Project* field and specific projects. If you selected the **Include Sub-projects** check box on the report form, the setting is recognized in your Project condition. Remember that privilege checking for running reports is always based on the project selected on the report form and that project view privileges are always checked for every user when the report is run.
- You can search all *Text* fields that are enabled for keyword searching by your administrator by using the **Text Fields With All Keywords** or **Text Fields With Any Keywords** options. The **Text Fields With All Keywords** option allows you to search for a match to all the keywords you specify. The **Text Fields With Any Keywords** option allows you to search for a match on any of the keywords you type.
- The **Item Type Prefix** option allows you to search for items by their prefix if the Item Type field is enabled for searching by your administrator.
- Select **(Filters)** to use a predefined report filter as a condition.



Note: Field-level dependencies are available on the **Advanced Search** page. If both the independent and dependent fields of a dependency are placed on the **Advanced Search** page, the dependency as established in the selected project is honored. In addition, a check box enables project- and field-level dependencies during report creation, as long as all fields in the dependency are added to the report's search criteria.

To select a field for a condition:

1. In the **Search Filter** area of the form, select the **Use Basic Conditions** option.
2. Click **Add** to show **Field Specifications**.
3. From the **Fields** drop-down list, select a field or report filter that you want to include in your condition. Field are listed in alphabetical order. To find a field, type the first letter of a field name to select the first field in the list that begins with that letter. Type the letter again to select the second field in the list that begins with that letter; continue to type the letter until the field you need is selected. When you select **(Filters)**, a list of available report filters appears under **Field Values**. Select one or more report filters, or use them in combination with field conditions.

Condition Operators

The **Operator** drop-down list allows you to select a function for the field selected in the **Fields** drop-down list. The following table describes the operators available for different field types.

Operator	Description
= (equal to)	Use the equal to operator to find exact values.
> (greater than)	Use the greater-than operator to find larger values than the value specified.
< (less than)	Use the less-than operator to find smaller values than the value specified.
>= (greater than or equal to)	User the greater-than-or-equal-to operator to find identical and greater values than the value specified.
<= (less than or equal to)	Use the less-than-or-equal-to operator to find identical and lesser values than the value specified.
<> (not equal to)	Use the not-equal-to operator to find values not equal to the value specified. For <i>Date/Time</i> fields, dates used with this operator are treated as Date-only fields.
contains all	Use this operator to select one or more values to return items that contain all values in the field.
contains any	Use this operator to select one or more values to return items that contain any values in the field. Multiple conditions are allowed.
does not contain all	Use this operator to select one or more values to return items that do not contain all specified values in the field. Multiple conditions are allowed.
does not contain any	Use this operator to select one or more values to return items that do not contain any values in the field. Multiple conditions are allowed.
contains	Use this operator to search for keywords in a <i>Text</i> field or <i>Sub-Relational</i> field or the Item Type Prefix option. SBM automatically includes wildcard characters at the beginning and the end of the search criteria. For example, type the value <i>icons</i> for a title search and the "contains" operator to return all items that contain the word "icons" in the title. Use this operator to search for exact phrases or single keywords in the <i>Text</i> field, or for searching by items by a specific item prefix.
like	Like is a comparison expression that returns data that is like the value selected. This operator gives you complete control over how SBM uses wildcard characters.

Operator	Description
not contains	Use this operator to return items that do not contain specified keywords in the queried <i>Text</i> or <i>Sub-Relational</i> field or the Item Type Prefix option.
not like	This is a comparison expression that returns data that is not like the selected value. Select the Title field and the "not like" operator, and then type the first or last word of the title to exclude that item from the report. You can use an asterisk (*) in the search as a wildcard character. For example, type the value <i>*icons*</i> for a title search to return items that do not contain the word icons. Use this operator to search for multiple phrases or keywords not in the field or item prefix.
like (zero-filled)	Use this operator to include leading zeros in your criteria for the Item ID field. For example, if there are leading zeroes on the ID number, they may be left off your search criteria. For example, to find item ID number "BUG00017," type 17 .
not like (zero-filled)	Use this operator to not include leading zeros in your criteria for the <i>Item ID</i> field. For example, if there are leading zeroes on the ID number, they must be included in your criteria. For example, to find item ID number "BUG00017," you must type <i>00017</i> .
is empty	Use this operator to find items with field values that are empty (in which values have not been entered or not provided by a user). For example, select the Description field with the is empty operator to return items that do not have any content in the Description field.
is not empty	Use this operator to find items with field values that are not empty (in which values have been provided). For example, select the Secondary Owner field with the is not empty operator to return items that have been assigned a secondary owner user or group.

The following table lists which operators apply to each field type:

Field Type	Operators
Binary	=
Company, Contact, Folder, Item Type, Project, Single Relational, Single Selection, State, Sub-Relational, Trinary, User	contains any, does not contain any
DateTime, Numeric, Summation	=, <>, >, >=, <, <=
Multi-Group, Multi-Relational, Multi-Selection, Multi-User	contains all, contains any, does not contain all, does not contain any

Field Type	Operators
Text, Item Type, Prefix Option	contains, like, not contains, not like
Item Id	contains, like, like (zero-filled), not contains, not like
Sub-Relational	The available operators depend on the selected sub-field type.
File, URL	contains, not contains, is empty, is not empty



Note: The **is empty** and **is not empty** operators are only applicable to the following field types:

- Text
- Numeric
- Multi-Group
- Multi-Selection
- Multi-User
- Multi-Relational
- Date/Time
- Sub-Relational (only applicable if the target field of the sub-relational field is one of the above)

Selecting Field Values for a Condition

Field Value options enable you to select values for the field selected in the **Fields** list or report filters if you select (Filters) from the **Fields** list. What you select determines the options and values that are available to you. For example:

- **Field Value Options for Selection and User Fields** – If you choose a field that allows you to select values in the **Fields** drop-down list, you can search for specific values or select multiple values to add to your condition. For example, if you select a *User* field, the users available as selections for the field are available in the **Field Values** list. You can select a user from the list, and then click **OK** to add the specification to your query.

The following information applies to selecting values for these types of fields:

- If a field contains more selections than can be displayed based on administrative settings, search for a value.

- If you want to select multiple user names, you can select the names needed for your specification, and then click the arrow keys to move them into the selection list to the right of the **Field Values** list.
- You do not need to move selections to the selection list on the right to add them to your condition; all selections made in the **Field Values** list are added as search criteria when you click **OK**.
- You can include field selections that are marked as (Disabled) in search criteria because these selections can be disabled at the project in which you are creating your report, but enabled in a sub-project.
- If your administrator has defined resource teams for your system, you can add the **Members of: Team Name** value to your search criteria. This enables you to report on items related to members of the team. For example, you may want to report on items owned by resource "Team A." The condition "Owner contains Members of Team A" returns items that are owned by any member of Team A.

Resource teams may be organized in a hierarchy, similar to an organization chart. In this case, if you select a parent team, results that include members from sub-teams are returned.

- The **Deleted Users** option is available in Distribution, Duration, Listing, and Trend reports. This option enables you to find deleted users in user fields that you add to the report. For example, to see a list of issues that were submitted by deleted user Joe, perform the following steps:
 1. Create a new Listing report.
 2. In the Search Filter, select the *Submitter* field and enter `JOE` in the **Find Values** field.
 3. Select the **Deleted Users** check box and click the search icon.
 4. When the deleted user account for Joe appears, add his name to the saved selection list.
 5. Find and add any other users you want to search for (deleted or otherwise by toggling the **Deleted Users** check box).
 6. Click OK to save the current search filter.



Note: No validation is performed to check if the user was ever a valid selection for the field in question. In other words, any deleted user account can appear as a selection in the field, even if the selection is no longer valid (for example, even if the user was removed from a group that populates selections in the field).

- **Field Values for Date/Time Fields** – Type a value in the box or click the **Date/Time Keywords** link to select a *Date/Time* keyword, such as *Now* or *Startof_NextWeek*, and then click **OK**. You cannot use *Date/Time* keywords for entering values for *Date/Time* fields that are set to display elapsed time or as a stopwatch.
- **Field Value Options for Relational Fields** – If you choose a field that allows you to select primary or auxiliary items as values, you can select or search for specific

items to add to your condition. If a field contains more selections than can be displayed based on administrative settings, you must search for a value using field value searching. You can select multiple values, if needed, and then click the arrow keys to move them into the selection list to the right of the **Field Values** list. You do not need to move selections to the selection box to add them to your condition; all selections made in the **Field Values** list are added as search criteria when you click **OK**.

- **Field Value Options for Non-Selection Fields** – If a field that does not allow you to select a specific value is chosen in the **Fields** drop-down list, you must type a value in the **Field Values** box. For example, if you select a *Text* field, such as the *Description* field, type a keyword or keywords to search for, and then click **OK** to add the specification to your query. *Date/Time*, *Numeric*, and *Summation* fields also allow you to specify a search value.
- **Field Value Options for Binary Fields** – If you select a *Binary* field, such as the *Active/Inactive* field, select one of two values for your search criteria, and then click **OK**.
- **Field Value Options for Trinary Fields** – If you select a *Trinary* field, select a single value or multiple values for your search criteria, and then click **OK**.
- **Provided Field Values** – Depending on the field selected in the **Fields** drop-down list, the following provided values are available.
 - **Current User** – All *User*, *Multi-User*, and *Multi-Group* fields have a "Current User" feature that allows you to find items for which you are selected in a *User* or *Multi-User* field. For *Multi-Group* fields, items are returned when a group in which you have membership is selected. Select *Manager* from the **Value** menu and "in" from the operator drop-down list, and then select "Current User." All items for which you are selected in the *Manager* field are returned.
 - **None** – Certain field types allow you to select **None** from the Values list. This selection returns all items meeting the rest of the report criteria that do not have a value for the selected field.
 - **Query at Runtime** – All fields, except *Summation* and *Numeric* fields, have a "Query At Runtime" feature that reduces the number of fields that need to be defined. When you choose this value from the list and save the report, you are prompted to select a value when you run the report.

For example, rather than creating separate reports to display the items each team member owns, you can create one report where the *Owner* field in the Field Specification area is set to "Query At Runtime." When you run the report, select the team member who owns the items you are interested in viewing.

For *Text* fields that you add with query-at-runtime parameters, when you run the report you can specify multiple values by clicking **Add**. For "contains" and "like" operators, you can specify multiple values using "AND" or "OR" (for example, **Title** contains 'a' OR **Title** contains 'b' OR **Title** contains 'c'). For "not contains" and "not like" operators, you can specify multiple values using only "AND".

The Query-At-Runtime feature is not available in **Change History**, **Multi-Table**, or **Version Control Actions** reports, and it is not applicable when you create custom groups of field values. Also, **Multi-View** reports cannot contain single reports that have Query-At-Runtime parameters.

In addition, when you use query-at-runtime fields in reports with drill-down capabilities, such as Distribution reports, drill-downs links are valid for up to 1 hour after the report is run or up to 20 minutes after the last drill-down link is clicked.

- **Field Values for (Filters)** – A list of available report filters appears. Optionally, use the search field to find report filters that are available.

Using Advanced SQL Conditions in SBM Reports



Note: Advanced SQL conditions are available only for on-premise customers.

SQL (Structured Query Language), is an ANSI-standard language for selecting records from a database.

A typical SQL selection statement looks something like this:

```
SELECT database_columns FROM database_table WHERE conditional_expression
```

Advanced SQL conditions provide you with two ways to implement or control your own SQL:

- **Pass-through SQL** – In some situations you can create a statement that includes a "where" clause. SBM pass-through SQL provides the flexibility to do this with the @ modifier.



Note: Change History, Version Control Actions, and Multi-Table reports support the pass-through method "@" modifier only when you use an Advanced SQL condition. Privileges granted by your administrator determine whether you can create a report using Advanced SQL conditions.

- **SBM-processed SQL** – This automatically constructs most of the SQL statement behind the scenes. In most cases, you need to enter only the *conditional_expression* portion of the statement. You do not have to enter the WHERE keyword; SBM supplies this for you.



Note: Privileges set by your administrator enable you to create Advanced SQL conditions and Advanced SQL conditions that use the pass-through method.

SQL Conditions Limitations

SBM Advanced SQL conditions does not support the use of the ORDER BY subquery. ORDER BY with OVER() function may be a valid use case for your database; however, SBM does not currently support that condition.

About Pass-Through SQL

The SBM pass-through SQL capability is very powerful, enabling you to go beyond the functionality provided by the SBM reports that use basic conditions.

When you use the pass-through method, SBM passes the WHERE clause through directly to the DBMS (after adding on some clauses to enforce privileges). Use the @ modifier as a prefix to your statement. The statement is passed straight through to the query engine, unmodified.

Pass-through SQL enables you to implement sub-queries to system tables or to other user tables. The full power of SQL (functions, aggregates, etc.) is available in your WHERE clause.



Note: When you use the @ modifier, the only operators allowed for *Multi-Selection*, *Multi-Group*, and *Multi-User* fields are **LIKE** and **NOT LIKE**. The actual ID value that represents the selection value must be used. For example, the **Accounting** selection value may have an ID value of **145**. This record is **#145** in the *Selections* table. To write the above examples using the pass-through method, type @WHERE TS_FUNCTIONAL_AREA LIKE '%,145,%' Since the *Multi Selection*, *Multi-Group*, and *Multi-User* fields are stored as strings of ID values, the wildcard characters can find any string that contains the value specified. Commas are necessary to select the appropriate value from the string.

Considerations for Using Pass-Through SQL

When you use pass-through SQL, you must use the database names for fields. The names must be entered in upper-case letters. The schema of system tables is documented. SBM uses standard names for system fields. The following table shows the common system fields that are available in tables, depending upon how your system administrator set up your tables, the corresponding database names, and the field type. Your administrator may elect not to include these fields.

System Field	Database Name	Type
Active/Inactive	TS_ACTIVEINACTIVE	Integer
Close Date/Time*	TS_CLOSEDATE	Date***
Description	TS_DESCRIPTION	Text
Item ID	TS_ISSUEID	Text
Item Title/Name	TS_TITLE	Text
Item Type	TS_ISSUETYPE	Integer
Last Modified Date	TS_LASTMODIFIEDDATE	Date***
Last Modifier	TS_LASTMODIFIER	Integer**
Last State Change Date*	TS_LASTSTATECHANGEDATE	Date***
Last State Changer*	TS_LASTSTATECHANGER	Integer**

System Field	Database Name	Type
Owner*	TS_OWNER	Integer**
Project*	TS_PROJECTID	Integer**
State*	TS_STATE	Integer**
Submit Date/Time	TS_SUBMITDATE	Date***
Submitter	TS_SUBMITTER	Integer**

* Fields found only in primary tables

** Fields that are foreign keys and can be joined to other tables

*** For Oracle, the date data type is 'DATE'; for SQL Server, it is 'datetime'.

Examples of SBM Pass-Through SQL

To use the following examples, you must know the database names for tables and fields in your SBM system. Contact your administrator for assistance.

Finding Active Items Owned by Deleted Users

Example of finding items that are active and owned by deleted users:

```
@WHERE TS_ACTIVEINACTIVE=0 and TS_OWNER in (select TS_ID from TS_USERS
where TS_USERS.TS_STATUS=1)
```



Tip: When you use the @ modifier, SBM does not convert names to numbers or logical database names to actual database names. The statement must contain the WHERE clause, as shown in the example above.

Finding Active Items Owned by Members of a Group

Example of finding items that are active and owned by users of a particular group called "Management:"

```
@WHERE TS_ACTIVEINACTIVE=0 and TS_OWNER in (select TS_MEMBERS.TS_USERID
from TS_MEMBERS, TS_GROUPS where TS_MEMBERS.TS_GROUPID =
TS_GROUPS.TS_ID and TS_GROUPS.TS_NAME ='group name')
```

Finding Items Submitted by Members of a Group

Example for finding incidents submitted by the users of a particular group:

```
@WHERE tablename.TS_SUBMITTER IN (SELECT TS_ID FROM TS_USERS WHERE
TS_USERS.TS_ID IN (SELECT TS_USERID FROM TS_MEMBERS WHERE
TS_MEMBERS.TS_GROUPID IN (SELECT TS_ID FROM TS_GROUPS WHERE
TS_GROUPS.TS_NAME = 'Technical Support')))
```

Finding Items Closed Within 14 Days of Submittal

Example of finding items that were closed within two weeks (14 days) of submittal (it is possible that these items are reopened because TS_ACTIVEINACTIVE is not part of the clause):

```
@WHERE ( (TS_CLOSEDATE - TS_SUBMITDATE) < (14) )
```



Note: TS_CLOSEDATE and TS_SUBMITDATE are both native date data types, therefore you can also use Oracle and MS SQL Server date functions.

Finding Items in the New State

Example of finding items currently in the "New" state (the sub-query can accept one unqualified TS_PROJECTID by correlating it to the table in the main selection, and SBM usually selects the project ID when you query primary tables):

```
@WHERE  
TS_STATE in (select TS_ID from TS_STATES where TS_NAME = 'New'  
and TS_STATES.TS_PROJECTID = TS_PROJECTID)
```

Finding Items That Have Attachments

Example of finding issues in the Issues table that have attachments:

```
@WHERE tablename.TS_ID IN (SELECT TS_CASEID FROM  
TS_ATTACHMENTS WHERE TS_SRCTABLEID IN (SELECT TS_ID FROM TS_TABLES WHERE  
TS_DBNAME = 'tablename'))
```

Finding Items You Owned in the Past

Example for finding items you owned in the past:

```
@WHERE  
tablename.TS_ID IN (SELECT TS_CASEID FROM TS_CHANGES WHERE TS_TABLEID IN  
(SELECT TS_ID FROM TS_TABLES WHERE TS_DBNAME LIKE 'tablename' )  
AND TS_FLDID IN (SELECT TS_ID FROM TS_FIELDS WHERE TS_SYSCODE = 12 AND  
TS_TABLEID IN (SELECT TS_ID FROM TS_TABLES WHERE TS_DBNAME LIKE  
'tablename' ) ) AND TS_NEWINT IN (SELECT TS_ID FROM TS_USERS  
WHERE TS_NAME LIKE 'username' ) )
```

You may want to append a date range on this report.

```
@WHERE tablename.TS_ID IN (SELECT TS_CASEID FROM TS_CHANGES WHERE  
TS_TABLEID IN (SELECT TS_ID FROM TS_TABLES WHERE TS_DBNAME LIKE  
'tablename' ) AND TS_FLDID IN (SELECT TS_ID FROM TS_FIELDS WHERE  
TS_SYSCODE = 12 AND TS_TABLEID IN (SELECT TS_ID FROM TS_TABLES WHERE  
TS_DBNAME LIKE 'tablename' ) ) AND TS_NEWINT IN (SELECT TS_ID FROM  
TS_USERS WHERE TS_NAME LIKE 'username' ) AND TS_TIME >  
lowerdaterange AND TS_TIME < upperdaterange )
```

Finding Items In Which a User Has Changed

Example for finding items in which a *User* field recently changed to a particular user:

```
@WHERE
tablename.TS_ID IN (SELECT tablename.TS_ID FROM tablename, TS_CHANGES,
TS_FIELDS, TS_TABLES, TS_USERS WHERE tablename.TS_ID = TS_CHANGES.TS_CASEID
AND TS_FIELDS.TS_NAME LIKE 'fieldname' AND TS_CHANGES.TS_FLDID =
TS_FIELDS.TS_ID AND TS_TABLES.TS_DBNAME LIKE 'tablename' AND
TS_CHANGES.TS_TABLEID =TS_TABLES.TS_ID AND TS_USERS.TS_LOGINID LIKE
'username' AND TS_CHANGES.TS_NEWINT=TS_USERS.TS_ID AND
TS_CHANGES.TS_TIME > date)
```

Using a Sub-query to Find Information in Relational Fields

Example of using a sub-query to obtain information from *Relational* fields selected for the report:

```
@where TS_CONTACTID in (select TS_ID from TS_CONTACTS where
TS_CONTACTS.TS_STATE = 'CO')
```



Tip: Correlated sub-queries can sometimes have poor performance. Use a join instead of sub-query for the example above. If you select "Contact" for an Incidents report, then the pass-through SQL can be written as, @TS_CONTACTS where TS_CONTACTID = TS_CONTACTS.TS_ID and TS_CONTACTS.TS_STATE = 'CO'. TS_CONTACTS may already be joined for the report, but the SBM SQL will be using an alias, so you must add the table name yourself before the "where".

Examples of Using Joins in Pass-Through SQL

- Example of using a join with TS_STATES (the "State" is automatically selected for primary item reports) for the purpose of seeing any items sitting in states that are deleted:

```
@TS_STATES where TS_STATE = TS_STATES.TS_ID and TS_STATES.TS_STATUS
=1
```

- Example of finding all of the companies who own Platinum (150) service agreements (select the *Companies* table from the **Report Item Type** drop-down list on the report form):

```
@TTS_SERVICEAGREEMENTS where
TS_COMPANIES.TS_SERVICEAGREEMENT = TTS_SERVICEAGREEMENTS.TS_ID and
TTS_SERVICEAGREEMENTS.TS_SERVICE_AGREEMENT_TYPE = 150
```

About SBM-Processed SQL

When you use a conditional expression in your SQL statement (not pass-through SQL with the @ modifier), SBM attempts to process the Advanced SQL condition.

When you provide a conditional expression in the statement, SBM scans the conditional expression you enter and performs certain transformations. Consider the *Severity* field, a commonly used selection field. It has selections such as Critical, High, Medium, and Low. A field in the *Issues* table named *Severity* stores the severity of each item. However, the *Severity* field does not actually contain the words "critical," "high," and so on as its data. Instead, it stores numeric values that refer to the *Selections* table that contains the name

of each selection. The application scans the conditional expression you enter and makes the appropriate numeric substitutions before sending the SQL statement to the database.



Note: The results from the SBM SQL processing might not always be correct SQL, so you must test the report by carefully examining any error conditions from the DBMS and adjust the report condition appropriately.

When you use processed conditions, use the displayed field names so that you will not need to know the database names of the fields. The processed conditional expressions can use *Date/Time* keywords, such as *now* and *startof_thismonth*.



Note: To convert the field names in the condition to SQL, SBM parses through the condition trying to change names before giving it to the DBMS. SQL functions and aggregates may not work correctly because of this.

Examples of SBM-Processed SQL

When a field name contains spaces or any other non-alphanumeric characters, enclose the field name within double quotation marks ("").

The following examples are created using fictional data. These examples show you how to handle multi-word names.

- Finding items you own

```
Owner=current
```

- Finding items owned by any user, or a subset of users

```
Owner IN ("Joe Manager", "Sarah Developer", "Tom Support Manager")
```

- Finding items for a subset of projects

```
Project IN ("Professional Suite", "Image Builder")
```

- Finding all active primary items

```
"Active/Inactive" = Active
```

The quotation marks around Active/Inactive are necessary because of the forward slash (/) character.

- Find primary items with Severity of Critical or High:

```
(Severity = Critical) OR (Severity = High)
```

- Find primary items with Severity of Critical, High, or Medium:

You have the option of using the *OR* operator, as above, or the *IN* operator. The following example shows how to use the *IN* operator.

```
Severity IN (Critical, High, Medium).
```

- Find assigned primary items owned by Joe Manager:

```
(State = Assigned) AND (Owner = "Joe Manager").
```

The quotation marks around Joe Manager are necessary because of the space between the names.

- Find items submitted on or after June 1, 2002:

```
"Submit Date/Time" >= "6/1/02".
```

- Find items submitted in the last two weeks:

```
"Submit Date/Time" >= (now - 14)
```



Note: You can replace 'now' with a DBMS-specific value. You can also use a DBMS-specific date equation for the section to the right of the 'equals' sign.

- Find items that contain a particular text string in the *Description* field:

```
Description LIKE '%testing%'
```



Note: The use of single quotation marks is imperative. The % character is a wildcard. This particular example returns results of any items containing the word "testing" in the *Description* field. Use the `LIKE` operator with any text, fixed length, or memo field.

- Find items for which the title begins with a certain text string:

```
Title LIKE 'Image%'
```

- Find items using a combination of operators. Find items submitted after December 1, 2001, which were later deferred:

```
("Submit Date/Time" > "12/1/01") AND (State = Deferred)
```



Tip: Fields with a space in the name must be enclosed within double quotation marks. Separate each part of the expression using parentheses.

Using SBM-Processed SQL for Multi-Selection, Multi-Group, and Multi-User Fields

Multi Selection, *Multi-Group*, and *Multi-User* fields are stored as character data in your database. The IDs corresponding to the individual selection values are represented in a comma-delimited string, such as 142, 143, 145.

SQL rules indicate that the only operator allowed with Text columns is **LIKE** or **NOT LIKE**. SBM increased the flexibility of reporting on this type of field to allow the use of some comparison operators, such as `=`, `<>`. These comparison operators translate to **LIKE** and **NOT LIKE** when the SQL statement is parsed.

Examples of Using LIKE and NOT LIKE Operators in SBM-Processed SQL

Suppose that the *Functional Area* fields have possible values of Accounting, Support Operations, Development and Internal Systems:

- To find all items related to Accounting:

```
"Functional Area" LIKE Accounting or "Functional Area" = Accounting
```

- To find all items that are related to any other functional area besides Accounting:

"Functional Area" NOT LIKE Accounting or "Functional Area" <>
Accounting



Note: SBM-processed SQL allows only one value in each condition; you cannot use "Functional Area" <> x,y.

Using Query at Runtime in Advanced SQL

You can optionally include Query At Runtime parameters in your advanced SQL statement. The Query At Runtime definition is composed of the following:

```
%QAR{{ Table.Column, User text }}%
```

Note the Query At Runtime definition starts with the string `%QAR{{` and ends with `}}%`. The internal definition consists of the following two parts:

- *Table.Column* – Defines the database table and column to use. Note that the table name is optional; if it is omitted, the table selected in the **Report Item Type** field is assumed and the following format is used: `%QAR{{Column, User text}}%`.
- *User text* – User-defined text that accompanies the field name on the Query At Runtime report page. You can provide text of your choice or a phrase that can be localized.

The following table lists *User text* phrases that are automatically replaced with localized text when shown to the user who runs the report:

User text	Localized text shown to the user
all	contains all
any in	contains any
not all	does not contain all
not any not in	does not contain any
like	like
not like	not like
likez	like (zero-filled)
contains	contains

User text	Localized text shown to the user
not contains	not contains

In addition, note the following:

- The Query At Runtime definition is used the same way in both and pass-through SQL and SBM-processed SQL.
- Fields in the **Basic Conditions** section of the report definition always appear before any fields in the advanced SQL statement. Also, Query At Runtime fields in advanced SQL are displayed in the order they are defined in the advanced SQL query.
- The following field types are not supported fields with advanced SQL Query At Runtime:
 - *System* fields
 - *Multi-Relational, Multi-Selection, Multi-User, and Multi-Group* fields
- Example of using Query At Runtime with the *Last Modified Date* field:

```
@WHERE
  UIM_INCIDENTS.TS_LASTMODIFIEDDATE >
  %QAR{{ UIM_INCIDENTS.TS_LASTMODIFIEDDATE, is after }}%
```

- Example of using current user with the *Owner* field in pass-through SQL:

```
@WHERE
  TS_OWNER in (%{{Current User}}%)
```

- Examples of using Query At Runtime with a *Text* field:

```
@WHERE
  TS_ISSUEID like '%%QAR{{TS_ISSUEID, contains}}%'
```

```
@WHERE
  TS_ISSUEID like '%%QAR{{TS_ISSUEID, contains}}%' OR
  TS_ISSUEID like '%%QAR{{TS_ISSUEID, contains}}%' OR
  TS_ISSUEID like '%%QAR{{TS_ISSUEID, contains}}%'
```

- Examples of using Query At Runtime with a *Date/Time* field:

```
@WHERE
  TS_EST_DATE_TO_FIX >= %QAR{{UBG_ISSUES.EST_DATE_TO_FIX, >=}}%
```

```
@WHERE TS_EST_DATE_TO_FIX > %QAR{{UBG_ISSUES.TS_EST_DATE_TO_FIX, >}}% and
  TS_EST_DATE_TO_FIX < %QAR{{UBG_ISSUES.TS_EST_DATE_TO_FIX, <}}%
```

- Example of using Query At Runtime with a *Binary* field:

```
@WHERE
  TS_P4STATUS = %QAR{{UBG_ISSUES.P4STATUS, =}}%
```

- Example of using Query At Runtime with a *User* field:

```
@WHERE
  TS_DEVELOPER in (%QAR{{UBG_ISSUES.TS_DEVELOPER, in}}%) and
  TS_OWNER in (%QAR{{UBG_ISSUES.TS_OWNER, in}}%)
```

- Example of using Query At Runtime with a *Numeric* floating point field:

```
@WHERE
  TS_FLD_NUM_2_FP > %QAR{{UBG_ISSUES.TS_FLD_NUM_2_FP, >}}%
```

- Example of using Query At Runtime with a *Numeric* integer field:

```
@WHERE
  TS_FLD_NUM_1_INT > %QAR{{UBG_ISSUES.TS_FLD_NUM_1_INT, >}}%
```

- Example of using Query At Runtime with a *Single-Relational* field:

```
@WHERE
  TS_FLD_SINGLE_RELATIONAL in (%QAR{{TS_FLD_SINGLE_RELATIONAL, in}}%)
```

Common SQL Operators

The following are common SQL operators used in SQL statements.

Arithmetic Operators

- + Addition
- - Subtraction
- * Multiplication
- / Division

Comparison Operators

- = Equal to
- > Greater than
- < Less than
- >= Greater than or equal to
- <= Less than or equal to
- <> Not equal to

Boolean or Logical Operators

- AND – Joins two or more conditions and returns results when *all* of the conditions are true.
- OR – Joins two or more conditions and returns results when *any* of the conditions are true.
- NOT – Negates or cancels out an expression.

Text Operators

- LIKE – Comparison expression
- NOT LIKE – Comparison expression

Addressing Null Values

To search for or screen out NULL values requires the following syntax:

- IS NOT NULL – Will search for data that is not null.
- IS NULL – Will search for values that are null.

List Operators

- IN – This is a keyword that enables you to select values that match any one of a list of values.



Note: You cannot use the IN operator with *Multi-Selection*, *Multi-Group*, or *Multi-User* fields. For examples of operators that you can use, refer to the [Using SBM-Processed SQL for Multi-Selection, Multi-Group, and Multi-User Fields \[page 198\]](#).

Combining Basic Conditions and Advanced SQL Conditions

You can optionally use basic conditions in combination with advanced SQL to define your search filter. This enables you to specify simple query by example conditions without having to specify them as part an advanced SQL condition. This simplifies your advanced SQL statement. Additionally, you can define basic conditions using **Query At Runtime** parameters and use them with advanced SQL conditions.

To find active items owned by Joe that have a file attachment, you can define part of your search filter using basic conditions:

```
Active/Inactive = Active
and
Owner contains any Joe Manager
```

And you can use pass-through SQL for the remainder:

```
@WHERE UBG_ISSUES.TS_ID IN (
  SELECT a.TS_CASEID FROM TS_ATTACHMENTS a
  JOIN TS_TABLES t ON a.TS_SRCTABLEID = t.TS_ID AND t.TS_DBNAME = 'UBG_ISSUES'
```

```
WHERE a.TS_BASETYPE = 16
)
```

In the example above, 16 represents a file attachment.

To return all active items owned by Laura that have been through the Fix transition:

```
Active/Inactive = Active
and
Owner contains any Laura Engineer
```

And use the following pass-through SQL for the remainder:

```
@WHERE UBG_ISSUES.TS_ID IN (
  SELECT ca.TS_ITEMID FROM TS_CHANGEACTIONS ca
  JOIN TS_TABLES t ON ca.TS_TABLEID = t.TS_ID AND t.TS_DBNAME = 'UBG_ISSUES'
  JOIN TS_TRANSITIONS tr ON ca.TS_TRANSITIONID = tr.TS_ID AND
  tr.TS_INTERNALNAME = 'IDM.FIX'
)
```

Note the following:

- A designer can find the Fix transition's internal name by editing the transition in Composer.
- This SQL can also be extended to filter on the user who ran the transition and/or the time period when the transition occurred. For example, in SQL Server, add the following before the closing parenthesis to return only items that were transitioned since the beginning of this month:

```
WHERE ca.TS_TIME>DATEDIFF(s, '1/1/1970', DATEADD(month, DATEDIFF(month, 0, GETUTCDATE()), 0))
```

- To avoid performance issues using the SQL above, your administrator should create an index on TS_CHANGEACTIONS with keys on the TS_TRANSITIONID, TS_TABLEID, and TS_ITEMID columns (in that order). If the SQL is extended to filter on user or time, add the TS_USERID and/or TS_TIME columns to the index.
- To avoid potential performance issues in SQL Server, add the NOLOCK hint for each table in the advanced SQL.

Chapter 6: Exporting SBM Data to Microsoft Excel®

You can use the **Export to Excel** Link to quickly export SBM primary and auxiliary item data into Excel. You can export listing-type, tabular-formatted, and graphical reports. When you export SBM graphical reports to Excel, report data is exported into a spreadsheet. For details, refer to [Using the Export to Excel Link \[page 205\]](#).

- [Using the Export to Excel Link \[page 205\]](#)
- [Opening Exported Excel Reports in a Separate Window \[page 206\]](#)

Using the Export to Excel Link

The **Export to Excel** link is available on most report results and enables you to export data to Microsoft Excel. Use this link to export data that you do not wish to update each time that you open your Excel spreadsheet.

The Excel link exports the report into Excel by formatting the report and field information into XML. The XML allows the data to be imported correctly into Excel. For example, date fields are imported into Microsoft Excel as dates, not as numbers.

Text fields that are included in exported reports do not include any line breaks. Instead, the content is exported as single line text. Some report formatting is altered for better conversion to Excel. For example, the checkmarks in privilege reports are changed to **Y**'s and the blanks are changed to **N**'s in the Excel output.

When you use the Excel link to export data, the **Items Per Page** setting in your user profile and for the system are ignored. The items returned by the search or report are exported to Excel, and not just those that appear on a specific page. For example, if there are 500 items in the results but only 50 items displaying per page, the Excel report will contain all 500 items.



Note: Your administrator may set a limit on the number of items returned by a listing report in order to improve performance.

To export SBM data to Excel using the Export to Excel link:

1. Run a report that you want to export to Excel.
2. Click the **Export to Excel** link in upper-right corner of the **Item List** pane or in the **Actions** drop-down list.
3. Depending on your Web browser, a file download dialog box opens or the file is saved automatically. The default file name is the report name, with underscores (_) replacing any invalid characters (/ \ ? * " : < > |).



Tip: In Internet Explorer, Excel opens a spreadsheet in the content pane by default and only limited Excel functionality is available. You can modify this default behavior so that Excel always opens in a separate window. For details, refer to [Opening Exported Excel Reports in a Separate Window \[page 206\]](#).

4. After exporting the report, use formatting features in Excel to customize it as needed.

Opening Exported Excel Reports in a Separate Window

To set Internet Explorer to open exported Excel reports in a separate window:

1. On your Windows workstation machine, open Windows Explorer (not Internet Explorer).
2. From the **Tools** menu, select **Folder Options**. The **Folder Options** dialog box opens.
3. Select the **File Types** tab.
4. From the Registered File Types list, select the **Microsoft Excel (XLSX)** file type, and then click **Advanced**.
5. The **Edit File Type** dialog box opens. Clear the **Browse in Same Window** check box, and then click **OK**.
6. On the **Folder Options** dialog, click **OK**.