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- Is the information clear?
- Are the examples correct?
- Do you need more examples?
- What did you like most about this document?

Click [here](#) to send us your comments. If possible, please provide a page number or section title to identify the content you're describing.

To report software issues, contact NetSuite Customer Support.
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SuiteAnalytics Workbook

SuiteAnalytics Workbook Overview

SuiteAnalytics Workbook is a new analytical tool available in NetSuite. To watch an introduction to SuiteAnalytics Workbook, click here.

With SuiteAnalytics Workbook, you can create highly customizable workbooks that combine queries, pivot tables, and charts using a single tool that leverages a new data source. This new data source is designed to ensure that fields are consistently exposed in SuiteAnalytics Workbook, with consistent results across all components of the workbook. Additionally, support for multilevel joins has been added to SuiteAnalytics Workbook, enabling you to author workbooks using field data from multiple record types, including custom records. Custom formula fields are also supported in SuiteAnalytics Workbook, so you can create and add fields with dynamically calculated values to your workbooks. Finally, SuiteAnalytics Workbook also offers multiple display options for hierarchical fields, so you can easily view data for fields with parent-child relationships.

The SuiteAnalytics Workbook user interface has been designed so that even users with limited knowledge of record schemas and query language can still create complex workbooks through actions such as drag and drop editing. For example, on the DataSet tab you can scroll through all the available record types and fields that you have access to in the Records and Fields lists. The interface also makes SuiteAnalytics Workbook ideal for ad-hoc diagnostic analysis, with options for instant formula validation, data refreshment, and drilling down through query results. Additionally, a range of customization options have been added to the interface to enable rich formatting, filtering, and visualizations of your data.

The latest iteration of SuiteAnalytics Workbook enables you to create workbooks for a limited number of record types. You can also use analytical record types created specifically for SuiteAnalytics Workbook, such as the Sales (Invoiced) record.

To help familiarize yourself with SuiteAnalytics Workbook, see the following topics:

- **Important:** SuiteAnalytics Workbook is currently not supported by SuiteBundler. To avoid installation errors with your bundles, do not include SuiteAnalytics Workbook objects. For more information about SuiteBundler, see the help topic SuiteBundler Overview.

- SuiteAnalytics Workbook uses a new data source which might require different fields, record types, joins, or formulas to replicate your existing saved searches. Review the SuiteAnalytics Workbook Data Source Overview for more information, including a list of available record types, guidelines for joining record types, and steps for authoring sample workbooks.

- To learn how to create your own custom workbooks, see Custom Workbooks. This section includes steps for defining, filtering, and pivoting your workbook source data, as well procedures for how to create custom formula fields and charts.

- SuiteAnalytics Workbook supports multiple predefined workbooks which are currently in a beta state. For more information, see Standard Workbooks.

- For information about how to add workbook-based portlets to your NetSuite dashboards, see Workbook-based Portlets.

- Complete the SuiteAnalytics Workbook Tutorial to walkthrough the creation of a sample Transaction workbook.

- For information about the elements of the SuiteAnalytics Workbook interface, see Navigating SuiteAnalytics Workbook.

- There are some known limitations with the current iteration of SuiteAnalytics Workbook. For more information, see Known Limitations in SuiteAnalytics Workbook.
Enabling SuiteAnalytics Workbook in Your NetSuite Account

By default, the SuiteAnalytics Workbook feature is enabled in all NetSuite accounts. If you do not see the Analytics tab in the NetSuite navigation menu, complete the following steps to verify that the feature has been enabled in your account.

To verify that SuiteAnalytics Workbook is enabled in your account:

1. Log in to your NetSuite account as an administrator.
2. Go to Setup > Company > Enable Features, and click the Analytics subtab.
3. Ensure that the SuiteAnalytics Workbook box is checked.
4. Click Save.

With the feature enabled, all standard roles have access to SuiteAnalytics Workbook except for the following roles:
- Customer Center
- Employee Center
- Vendor Center
- Partner Center
- Advanced Partner Center
- NetSuite Support Center
- NetSuite Support Center (Basic)
- Publisher Center

Note: Any roles including custom roles with the Perform Search permission prior to 2019.1 will automatically have the SuiteAnalytics Workbook permission enabled when your NetSuite account is upgraded to 2019.1. This is a one time action. After the upgrade, assigning the Perform Search permission will not automatically add the SuiteAnalytics Workbook permission to a role.

To provide SuiteAnalytics Workbook access to users assigned to a custom role, add the SuiteAnalytics Workbook permission to the role and set the access level to Edit on the Reports subtab of the Permissions tab.

To enable users to edit and monitor workbooks created by other users in your account, add the Analytics Administrator permission to the desired user's role on the Setup subtab of the Permissions tab. Alternatively, to enable the Analytics Administrator permission for individual users, add the Analytics Administrator global permission to the employee record.
For more information about customizing roles, see the help topic Customizing or Creating NetSuite Roles. For more information about the Analytics Administrator permission, see Analytics Administrator Permission.

Analytics Administrator Permission

The Analytics Administrator permission enables users to delete, share, and edit certain properties of the workbooks created in your account, or track changes to workbooks using the Audit Trail and Execution Log record types. Users with the Analytics Administrator permission also define the audience for the standard workbooks available in your account, listed under the Standard Workbooks section of the Workbook Listing page.

The minimum access level for the permission is Full, and by default it is enabled for account administrators. The permission can be assigned to a role on the Setup subtab of the Permissions tab, or as a global permission on an employee record. Deleted workbooks are irretrievable however, so the permission should only be enabled for a small number of users in your account. Additionally, while users with the Analytics Administrator permission can control access to workbooks and delete workbooks created by other users, they cannot view fields or records that they do not have access to based on their other NetSuite permissions. Furthermore, to access SuiteAnalytics Workbook, users with the Analytics Administrator permission must still be assigned to a role with the SuiteAnalytics Workbook permission.

Editing Employee Workbooks

Users with Analytics Administrator permission have access to every workbook in your account through the Employee Workbooks section of the Workbook Listing page.

Users with the Analytics Administrator permission can open each workbook listed but only view data for the records and fields they have permissions for. Consequently, some workbooks may not function properly when opened from the list.

From the Employee Workbooks list, users with the Analytics Administrator permission can change the Workbook Name, Description, or Owner. They can also share or delete workbooks using the icons in the Actions column. Currently, notifications are not sent when workbooks are deleted, shared, or assigned to new owners.
Auditing SuiteAnalytics Workbooks

To monitor the use of SuiteAnalytics Workbook, users with Analytics Administrator permission have access to the Audit Trail and Execution Log record types. They can use these record types to view the data being accessed through SuiteAnalytics Workbook and to track changes to the saved workbooks in your account.

<table>
<thead>
<tr>
<th>Record Type</th>
<th>Description</th>
<th>Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Trail</td>
<td>Displays changes made to each saved workbook in your account, including the date the change was saved and the user who saved it. Records for each saved workbook are stored indefinitely, or until the workbook is deleted.</td>
<td>Date/Time, ID, User, Workbook</td>
</tr>
<tr>
<td></td>
<td>■ To view the most recent saved changes, join fields from the Change Audit Change record type to the Audit Trail workbook.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ To view the details of each saved change including the fields that were changed and the new and original values, join the New Value and Old Value fields from the Detail Audit Detail record type to the Audit Trail workbook.</td>
<td></td>
</tr>
<tr>
<td>Execution Log</td>
<td>Displays all queries executed in the past 30 days, including those from unsaved workbooks. For each query listed, the Execution Log displays the following data:</td>
<td>Base Record Type, Date/Time, Export, Expression, Fields, Formulas, ID, User Name, Workbook</td>
</tr>
<tr>
<td></td>
<td>■ All fields used in the query</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ The base record type</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ The date the query was run</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ The name of the user who ran the query</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ If the query was exported</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Any formulas used in the query</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ If applicable, the name of the associated saved workbook</td>
<td></td>
</tr>
</tbody>
</table>

Defining the Audience for Standard Workbooks

SuiteAnalytics Workbook offers many predefined workbooks. For a detailed list including summaries of the content within each workbook, see Standard Workbooks.

Each of these workbooks are in a beta or demo state and should be used for test purposes only.

To provide access to these workbooks, users with the Analytics Administrator permission can share most standard workbooks with specific users or roles directly from the Workbook Listing Page. If the Share icon is unavailable for a workbook, users with the Analytics Administrator permission must open the workbook and save and share a copy of it. For more information about sharing workbooks, see Sharing Workbooks.

Accessing and Sharing Workbooks

**Important:** If you tried the SuiteAnalytics Workbook beta release, workbooks you created during the beta period might no longer be available as of 2019.1. If they are still available, you can access them from the My Workbooks list on the Workbook Listing Page. If they are not available, you need to recreate them by authoring a new workbook. For more information, see Custom Workbooks.

When you first click the Analytics tab from the NetSuite navigation menu, you are presented with all the workbooks that you have access to on the Workbook Listing Page. This includes any workbooks you
have created and workbooks that have been shared with you by other users. If you have the Analytics Administrator permission, you can also open workbooks created by other users in your account and access or share the standard, predefine workbooks available in your account. For more information about the Analytics Administrator permission, see Analytics Administrator Permission.

The records and fields displayed in each workbook are based on the features enabled in your account and the permissions assigned to the role you use to login to NetSuite. For example, to view fields and data from the Invoice record type or to create a workbook based on the Invoice record type, you must have the Invoice permission assigned to your role. Additionally, certain actions in SuiteAnalytics Workbook are controlled by your NetSuite permissions. For example, to export data from the Data Grid to a CSV file, you must have the Exports Lists permission at Create level or higher.

For more information about specific record and field access in SuiteAnalytics Workbook, download the following worksheet: NetSuitePermissionsUsage.xls. If you do not see a specific record or field that you need access to, contact your system administrator. You can only access certain workbooks such as the Sales (Invoiced) Workbook however, if they are shared with you by other users in your account. For more information, see Sharing Workbooks.

Sharing Workbooks

You can share workbooks with individual users or groups of users on a role by role basis. For example, if you share a workbook with users assigned to the Accountant role, all users assigned to that role have access to the workbook. Any user with access to SuiteAnalytics Workbook can share a workbook, however users can only view the records and fields they have permissions for in a shared workbook. Fields and records that a user does not have access to are not displayed in the workbook.

Shared workbooks include all components of the workbook, including any selections made on the DataSet, Pivot, or Charts tabs. If you have the export lists permission and you only want to share your workbook source data, click the Export icon on the DataSet tab to download a CSV file of the data which you can distribute to other users.

To share a workbook:

**Note:** If you have the Analytics Administrator permission and you want to share standard workbooks such as Open Sales Orders Lines or Number of Fulfillments, you must follow the steps in this procedure. These workbooks cannot be shared from the Workbook Listing Page.

1. Click the Share icon from anywhere within the workbook.
2. Enter a name for the workbook in the field provided.
3. Optionally, enter a description of the workbook.
4. Click **Proceed to share**.
5. Select the roles or employees you want to share the workbook with, then click the right arrow to add them to the distribution list.

6. Click **Save and share**.

The workbook is saved and appears on the Workbook Listing Page for any users you share it with. Currently, notifications are not sent when a workbook is shared with a user.
**Important:** You cannot save or share workbooks that contain fields that are in a beta state. These fields are for test purposes only and are subject to change. If your workbook source data contains fields that are in a beta state, remove the fields before you attempt to save.

---

**Data Refresh in SuiteAnalytics Workbook**

In SuiteAnalytics Workbook, by default the data presented in pivot tables and charts tab is cached every 60 minutes. This caching process provides better performance by returning results faster. However, these results might not display the most current data.

To find out when the data was last refreshed in your workbook, verify the time displayed in **Last updated** on the upper-right corner of the Viewer. To better understand the default caching process and how to clear the cache manually, see the following topics:

- Understanding Data Caching in Charts and Pivot Tables
- Clearing the Cache for Pivot Tables and Charts

**Understanding Data Caching in Charts and Pivot Tables**

The data that is displayed in each tab of a workbook varies depending on the following scenarios:

- **Creating and modifying pivot tables and charts in an existing workbook**
  
  After you set the layout of a new pivot table or chart, click the refresh icon to apply the changes and update the results. If you make changes to a pivot table on the Viewer, results are automatically displayed.

  When you create or modify your charts and pivot tables, SuiteAnalytics Workbook creates a query. This query definition retrieves the results for the defined chart and pivot table, and enables you to see the results in the Viewer. If pivot tables and charts share the same query definition, the data used for refresh can vary:
  
  - If the pivot table or chart that shares the same query was refreshed less than 60 minutes ago, the data from the cache is used for the refresh.
  
  - If the pivot table or chart that shares the same query was refreshed more than 60 minutes ago, the most current data is used for the refresh.

  You can verify the time of last refresh in the upper-right corner of the Viewer. To get the latest updated data, clear the cache by clicking the menu icon next to the **Last updated** date.

- **Saving and re-opening a workbook before 60 minutes have elapsed**
  
  When you re-open a saved workbook before 60 minutes have elapsed, and click a pivot table or chart tab, the Viewer displays cached data by default. The time of the last refresh appears in the upper-right corner of the Viewer. To retrieve the most updated data, you must clear the cache by clicking the menu icon next to the **Last updated** date.

- **Saving and re-opening a workbook after 60 minutes have elapsed**
  
  When you re-open a saved workbook after 60 minutes have elapsed, the cached data has expired. Consequently, when you click a pivot table or chart tab, the Viewer displays the most current results.

- **Working with the Analytics Portlet**
  
  The Analytics portlet reflects the same data as in workbooks. However, you can retrieve the most current results by clicking the refresh icon.
For more information on how to clear the cache manually, see Clearing the Cache for Pivot Tables and Charts.

**Clearing the Cache for Pivot Tables and Charts**

The clearing cache option lets you invalidate the cached data and retrieve the most current results at any time. You can verify when the data was last updated by checking the date and time displayed on the upper-right corner of the Viewer. The following steps show how you can clear the cache for your open pivot tables and charts.

**To clear the cache for pivot tables and charts:**

1. On the Pivot Table or Chart tab, click the menu icon in the right corner of the Viewer.
   
   A popup message appears asking if you want to clear the cache.
2. Choose how you want to proceed:
   - **Clear cache** - Clears the cache for the entire workbook. The time and date on the right corner of the Viewer are updated to reflect when the data was updated.
   - **Cancel** - The cache is not cleared. Data is updated following the default caching process.
3. If you have cleared the cache, a popup message appears asking you to refresh all pivot tables and charts to see the most current results.
   
   The icon next to each pivot table and chart changes. There are three available icons:
   - **Warning icon** - The displayed results are not updated according to the date and time shown in **Last updated**. To show the most current results, click the refresh icon.
   - **Loading icon** - The data is currently being updated according to the date and time shown in **Last updated**. After the refresh is completed, the icon changes to either pivot or chart icon.
   - **Pivot ** and Chart icons - The displayed results correspond to the time and date shown in **Last updated**.
4. To see the most updated results in each open pivot table and chart, refresh each tab by clicking the refresh icon.

For more information about the Pivot table and Chart tabs, see Pivot Tab and Chart Tab.

To better understand the caching process of SuiteAnalytics Workbook, see Understanding Data Caching in Charts and Pivot Tables.

**Known Limitations in SuiteAnalytics Workbook**

The following features and interactions in SuiteAnalytics Workbook have known limitations that are currently being addressed by our development teams:

- On the Pivot tab, you cannot apply measure-based filters to fields that contain date or text values when the aggregation types for those fields are set to Min or Max.
  
  For more information about measure-based filters, see Pivot Table Filters.
- Some ad blocker plug-ins can prevent you from creating pivot tables or charts. To avoid errors with the Pivot or Chart tabs, deactivate these plug-ins and mark NetSuite as an exception. For more information about NetSuite browser support, see the help topic Supported Browsers for NetSuite.
- If you define a workbook criteria filter that is invalidated based on changes to the field used in the filter condition, you are currently unable to edit the filter.
■ Users assigned to the Employee Center or Partner Center roles who have permission to access SuiteAnalytics Workbook might not see the Analytics option in the NetSuite navigation menu.

■ Filters that you create on the DataSet tab based on custom duration values currently do not work as expected.

■ When you query the new data source using SuiteScript, you currently cannot filter data using recordTypes such as Invoice.

■ If you add multiple pivot tables or charts in a workbook, the user interface does not always display arrows so that you can switch between each table and chart.

■ Certain ad blocking software can prevent data from loading in your workbook pivot tables.
SuiteAnalytics Workbook Data Source Overview

For each NetSuite account, all data is stored using a single database. The data sources used to expose this data through Saved Searches and Reports however, are slightly unique. For some record types, these unique data sources have resulted in inconsistent field naming and data exposure between the two tools.

In SuiteAnalytics Workbook, fields and record types are exposed using a new data source that is designed to display consistent data across the workbook application. Fields created in support of new NetSuite features are exposed to SuiteAnalytics Workbook using this data source, as of 2019.1.

The location, names, and IDs of some fields and record types might be different in the new data source. Additionally, some record types and fields have not been ported to the new data source. This includes fields that contain calculated values for certain record types. Consequently, you might need to use different record types and fields, or create new joins and custom formula fields to recreate your existing saved searches using SuiteAnalytics Workbook.

To help you navigate the new data source, see the following topics:

- The SuiteAnalytics Workbook data source supports hundreds of records and fields. For more information, including a complete list of all currently supported record types and fields, see Available Record Types.
- The location and names of some fields in the new data source might be different from their Search and Report counterparts. Additionally, some fields such as fields with calculated values have not yet been ported to the new data source. For more information about differences in the new data source, see SuiteAnalytics Workbook Data Source Changes.
- After you select a root record type for a custom workbook or open a saved or shared workbook, the newly designed DataSet tab displays all related record types that you have access to in the Records list. For more information about using the DataSet tab to select and join related record types in a workbook, see Defining Workbook Source Data.
- You can use SuiteQL to run queries against the new data source through SuiteAnalytics Connect. For more information, see SuiteQL.
- SuiteAnalytics Workbook supports multilevel joins, however there are certain functions and interactions that you should be cautious of when adding specific record types or fields to a workbook. For more information, see Guidelines for Joining Record Types in SuiteAnalytics Workbook.

SuiteQL

SuiteQL is a query language based on the SQL-92 revision of the SQL database query language. It provides advanced query capabilities you can use to access your NetSuite records and data.

SuiteQL is currently available for querying the new data source through SuiteAnalytics Connect only. The new data source is the schema shared with SuiteAnalytics Workbook, saved searches, and reports, and it is designed to display consistent data across NetSuite analytical tools.

Some benefits of using SuiteQL include the following:

- **Support for the new data source**: SuiteQL lets you query the new data source. The new data source enhances the capabilities of querying your NetSuite data. The exposed data is consistent with SuiteAnalytics Workbook, which resolves previous data exposure inconsistencies in saved searches and reports. For more information, see SuiteAnalytics Workbook Data Source Overview.
Improved security: SuiteQL lets you query the same data you can access in the SuiteAnalytics Workbook user interface, which helps to increase security. SuiteQL also includes a list of supported SQL functions and does not allow you to use unsupported SQL functions in your query, which prevents SQL injection.

SuiteQL supports the syntax for both SQL-92 and Oracle SQL. However, you cannot use both syntaxes in the same query.

To help you understand how to use SuiteQL, see the following help topics:

- SuiteQL Syntax and Examples
- SuiteQL Limitations and Exceptions
- Using SuiteQL

SuiteQL Syntax and Examples

SuiteQL supports the syntax for both SQL-92 and Oracle SQL, but you cannot use both syntaxes in the same query. To learn about these syntaxes, see the following help topics:

- SQL-92 Language Reference
- Database SQL Language Reference

The following sections show you how to create queries using SuiteQL and the new data source.

Simple Queries

This section demonstrates how to perform simple queries using SuiteQL.

All Records

This string queries for all employee records.

```
SELECT * FROM employee
```

Field Values from Records

This string queries for entityid field values in all employee records. The field value uses the RAW field context. For more information, see the help topic query.FieldContext.

```
SELECT employee.entityid AS entityidRAW /*{entityid#RAW}*/ FROM employee
```

This string queries for entityid, firstname, and lastname field values in all employee records.

```
SELECT employee.entityid AS entityidRAW /*{entityid#RAW}*/, employee.firstname AS firstnameRAW /*{firstname#RAW}*/, employee.lastname AS lastnameRAW /*{lastname#RAW}*/ FROM employee
```

Field Values with Conditions

This string queries for entityid field values in employee records where the expenselimit of the employee is greater than or equal to 5000.

```
SELECT employee.entityid AS entityidRAW /*{entityid#RAW}*/ FROM employee WHERE employee.expenselimit >= 5000
```
This string queries for entityid field values in employee records where the expenselimit of the employee is greater than or equal to 5000 or the employee is a sales representative.

```sql
SELECT employee.entityid AS entityidRAW /*{entityid#RAW}*/ FROM employee WHERE employee.expenselimit >= 5000 OR employee.issalesrep = 'T'
```

**Joined Records**

This string queries for entityid field values in employee records joined to employee earning records where:

- The employee is a support representative, and
- The defaulthours field on the employee earning record is greater than 20.

```sql
SELECT employee.entityid AS entityidRAW /*{entityid#RAW}*/ FROM employee WHERE employee.issupportrep = 'T'
```

**Advanced Queries**

The following strings demonstrate advanced queries using SuiteQL.

```sql
/* set operations */
SELECT * FROM Transactions UNION SELECT * FROM Transactions /* ODBC 2.0 Extended */;

/* top n */
SELECT TOP 10 * FROM Transactions /* OpenAccess, not in ODBC 2.0, Syntax taken from SYBASE/Access */;
SELECT TOP 1 transaction_id FROM Transactions UNION SELECT TOP 1 transaction_id FROM Transactions /* TOP in set operations: allegedly unsupported in OpenAccess, but accepted. Not in ODBC 2.0 */;

/* select list */
SELECT DISTINCT email FROM Transactions /* DISTINCT in select list: ODBC 2.0 Minimal */;
SELECT (SELECT MAX(1) FROM Transactions) AS one FROM Transactions /* Subquery in select list: OpenAccess only, not in ODBC 2.0 */;
SELECT COUNT(DISTINCT 1+transaction_id) FROM Transactions /* expression in COUNT: OpenAccess only, not in ODBC 2.0 */;
SELECT COALESCE(email, transaction_id, 'some value', 1 + 1) FROM Transactions /* expression in COUNT: OpenAccess only, not in ODBC 2.0 */;

/* from */
SELECT * FROM Transactions, Transaction_Lines /* ODBC 2.0 Minimal */;
SELECT * FROM (SELECT * FROM Transactions) a INNER JOIN ((SELECT * FROM Transactions UNION SELECT * FROM Transactions) b INNER JOIN (SELECT * FROM Transactions) c ON 1=1) ON 1=1 /* OpenAccess only, not in ODBC 2.0 */;
SELECT * FROM (SELECT transaction_id, COUNT(*) cnt FROM Transaction_Lines GROUP BY transaction_id) WHERE cnt > 2 /* OpenAccess only, not in ODBC 2.0 */;

/* where */
SELECT * FROM Transactions t WHERE transaction_id IN (SELECT transaction_id FROM Transactions WHERE transaction_id = t.transaction_id UNION SELECT -1 FROM Transactions) /* Correlated subquery with set operations: unsupported in OpenAccess */;
SELECT * FROM Transactions WHERE 1 = (SELECT MAX(1) FROM Transactions) /* subquery as right operand: ODBC 2.0 Core */;
SELECT * FROM Transactions WHERE EXISTS(SELECT 1 FROM Transactions) /* ODBC 2.0 Core */;
SELECT * FROM Transactions WHERE transaction_id IN ((SELECT MAX(1) FROM Transactions), 2+1) /* OpenAccess only, not in ODBC 2.0 */;
```
SuiteQL Limitations and Exceptions

The following are known limitations and exceptions when using SuiteQL:

- SuiteQL is currently supported by SuiteAnalytics Connect only. To learn how to use SuiteQL with SuiteAnalytics Connect, see Using SuiteQL with the Connect Service.
- You can create SuiteQL queries using the syntax for either SQL-92 or Oracle SQL, but you cannot use both syntaxes in the same query. To learn about SuiteQL syntax and grammar, see SuiteQL Syntax and Examples.
- There is no dedicated browser for the new data source yet. You should use the OA_COLUMNS, OA_TABLES, and OA_FKEYS database tables to obtain the required information about the new data source schema. To learn about these tables, see the help topic SuiteAnalytics Connect System Tables.
- The new data source is not accessible for the following roles: Administrator, Full Access (Deprecated), roles requiring Two-Factor Authentication (2FA), and roles accessing the Connect Service with IP restrictions. For more information, see the help topic Role-based Permissions for the New Data Source.

Using SuiteQL

SuiteQL lets you query your NetSuite data using advanced query capabilities. SuiteQL includes a list of supported SQL functions and does not allow you to use unsupported SQL functions in your query, which prevents SQL injection and other unauthorized access to data.

**Important:** Currently, you can use SuiteQL with SuiteAnalytics Connect only.

To learn how to use SuiteQL, see the following help topics:

- Finding Record Type and Field Names
- Using SuiteQL with the Connect Service

Finding Record Type and Field Names

SuiteQL queries include references to record types and fields. For example, the following SuiteQL string queries for `entityid` field values that are included in employee records:

```sql
SELECT employee.entityid AS entityidRAW /*{entityid#RAW}*/ FROM employee
```

To create a query using SuiteQL, you must know the names of the record types and fields that you want to use in your query. You can find these names using several methods:

- Using the SuiteAnalytics Workbook UI
- Using the Available Records Spreadsheet
Using the SuiteAnalytics Workbook UI

You can use the SuiteAnalytics Workbook UI to find record type and field names. SuiteAnalytics Workbook uses the same data source that SuiteQL does, so you can use the SuiteAnalytics Workbook UI to explore the available record types and fields before you create your query.

To find record type and field names using the SuiteAnalytics Workbook UI:

1. In your NetSuite account, click the Analytics tab in the NetSuite navigation menu.
2. On the Workbooks page, click New Workbook.
3. Search for the record type that you want to use as the root record of your query.
   The name of each supported record type is listed in the Record ID column. You can use this page to find all supported record type names, but you cannot use this page to find field names. If you need to find field names, continue to step 4.
4. Click a record type. A workbook is created with the selected record type as the root record.
   The left column lists the record types that you can join with the root record. The middle column lists the fields that are available on the selected record.
5. In the middle column, find the field that you want to use in your query. Hover over the field, and click the information button.
Information about the field is displayed. The field name is listed under Field ID. You can also see the type of data that the field contains (text, date, boolean, and so on).

If you want to find field names for fields that are on a different root record, repeat this procedure from step 2 and choose a new root record. To learn more about creating workbooks, see SuiteAnalytics Workbook Tutorial.

Using the Available Records Spreadsheet

Record type and field names are listed in a spreadsheet that you can use when you create your SuiteQL query. To access this spreadsheet, go to Available Record Types and download it using the download link.

To find record type and field names using the Available Records spreadsheet:

1. Download and open the spreadsheet.
2. On the Records tab, in the Record identifier column, find the record type that you want to use in your query.
   The Record identifier column lists record types and any available joins with other record types. The Record name column lists the record type name to use in your query. The Connect/SuiteQL column indicates whether you can use the record type in SuiteQL queries.
3. On the Fields tab, in the Record column, find the record type name that includes the fields you want to use in your query.
   The Record column uses the same record type names as the Record name column on the Records tab. The Field column lists the field names to use in your query. The Connect/SuiteQL column indicates whether you can use the field in SuiteQL queries.

Using SuiteQL with the Connect Service

You can use SuiteQL to query your NetSuite data through the Connect Service. To do so, you must consider the following:

- Syntax Requirements
- Querying the New Data Source
- Supported Functions
- Unsupported Functions
Unsupported Features in SQL-92

Syntax Requirements

As you create queries using SuiteQL and the Connect Service, consider the following syntax requirements:

- For string concatenation, you cannot use the + operator. You should use the || operator instead. This restriction applies to both field and literal concatenation.
- You cannot use more than 1000 arguments in a single IN clause.
- You cannot use date literals. You must encapsulate dates using the to_date() function.
- When using Oracle SQL syntax, you cannot use right outer joins. For example, the following Oracle SQL is not valid in SuiteQL:

```
select a1.id from account a1, account a2 where a1.id (+) = a2.id
```

For more information, see the help topic SQL Compliance.

Querying the New Data Source

There is no dedicated browser for the new data source yet. You should use the OA_COLUMNS, OA_TABLES, and OA_FKEYS database tables to obtain the required information about the new data source schema. For more information, see the help topic SuiteAnalytics Connect System Tables.

**Note:** The new data source is not accessible for the following roles: Administrator, Full Access (Deprecated), roles requiring Two-Factor Authentication (2FA), and roles accessing the Connect Service with IP restrictions. For more information, see the help topic Role-based Permissions for the New Data Source.

Supported Functions

The following table outlines the list of functions you can use when you run queries using SuiteQL with the Connect Service.

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS</td>
<td>returns the absolute value of n</td>
</tr>
<tr>
<td>ACOS</td>
<td>returns the arc cosine of n</td>
</tr>
<tr>
<td>ADD_MONTHS</td>
<td>returns the date date plus integer months</td>
</tr>
<tr>
<td>APPROX_COUNT_DISTINCT</td>
<td>returns the approximate number of rows that contain distinct values of expr</td>
</tr>
<tr>
<td>ASCII</td>
<td>returns the decimal representation in the database character set of the first character of char</td>
</tr>
<tr>
<td>ASCIIISTR</td>
<td>takes as its argument a string, or an expression that resolves to a string, in any character set and returns an ASCII version of the string in the database character set</td>
</tr>
<tr>
<td>ASIN</td>
<td>returns the arc sine of n</td>
</tr>
<tr>
<td>ATAN</td>
<td>returns the arc tangent of n</td>
</tr>
<tr>
<td>ATAN2</td>
<td>returns the arc tangent of n1 and n2</td>
</tr>
<tr>
<td>AVG</td>
<td>returns the average value of expr</td>
</tr>
<tr>
<td>BFILENAME</td>
<td>returns a BFILE locator that is associated with a physical LOB binary file on the server file system</td>
</tr>
<tr>
<td>Function</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>BITAND</td>
<td>computes an AND operation on the bits of expr1 and expr2</td>
</tr>
<tr>
<td>CEIL</td>
<td>returns smallest integer greater than or equal to n</td>
</tr>
<tr>
<td>CHARTOROWID</td>
<td>converts a value from CHAR, VARCHAR2, NCHAR, or NVARCHAR2 datatype to ROWID datatype</td>
</tr>
<tr>
<td>CHR</td>
<td>returns the character having the binary equivalent to n as a VARCHAR2 value</td>
</tr>
<tr>
<td>COALESCE</td>
<td>returns the first non-null expr in the expression list</td>
</tr>
<tr>
<td>COMPOSE</td>
<td>takes as its argument a string, or an expression that resolves to a string, in any datatype, and returns a Unicode string in its fully normalized form in the same character set as the input</td>
</tr>
<tr>
<td>CONCAT</td>
<td>concatenates char1 and char2 into one string</td>
</tr>
<tr>
<td>CORR</td>
<td>returns the coefficient of correlation of a set of number pairs</td>
</tr>
<tr>
<td>CORR_K</td>
<td>calculates the Kendall's tau-b correlation coefficient</td>
</tr>
<tr>
<td>CORR_S</td>
<td>calculates the Spearman's rho correlation coefficient</td>
</tr>
<tr>
<td>COS</td>
<td>returns the cosine of n (an angle expressed in radians)</td>
</tr>
<tr>
<td>COSH</td>
<td>returns the hyperbolic cosine of n</td>
</tr>
<tr>
<td>COUNT</td>
<td>returns the number of rows returned by the query</td>
</tr>
<tr>
<td>COVAR_POP</td>
<td>returns the population covariance of a set of number pairs</td>
</tr>
<tr>
<td>COVAR_SAMP</td>
<td>returns the sample covariance of a set of number pairs</td>
</tr>
<tr>
<td>CURRENT_DATE</td>
<td>returns the current date in the session time zone, in a value in the Gregorian calendar of datatype DATE</td>
</tr>
<tr>
<td>CURRENT_TIMESTAMP</td>
<td>returns the current date and time in the session time zone</td>
</tr>
<tr>
<td>DECODE</td>
<td>compares expr to each search value one by one. If expr is equal to a search, then the Oracle database returns the corresponding result</td>
</tr>
<tr>
<td>DECOMPOSE</td>
<td>takes as its argument a string in any datatype and returns a Unicode string after decomposition in the same character set as the input</td>
</tr>
<tr>
<td>DENSE_RANK</td>
<td>computes the rank of a row in an ordered group of rows and returns the rank as a NUMBER</td>
</tr>
<tr>
<td>EMPTY_BLOB</td>
<td>returns an empty LOB locator</td>
</tr>
<tr>
<td>EMPTY_CLOB</td>
<td>returns an empty LOB locator</td>
</tr>
<tr>
<td>EXP</td>
<td>returns e raised to the nth power</td>
</tr>
<tr>
<td>FLOOR</td>
<td>returns largest integer equal to or less than n</td>
</tr>
<tr>
<td>FROM_TZ</td>
<td>converts a timestamp value and a time zone to a TIMESTAMP WITH TIME ZONE value</td>
</tr>
<tr>
<td>GREATEST</td>
<td>returns the greatest of a list of one or more expressions</td>
</tr>
<tr>
<td>INITCAP</td>
<td>returns char, with the first letter of each word in uppercase, all other letters in lowercase</td>
</tr>
<tr>
<td>INSTR</td>
<td>searches string for substring</td>
</tr>
<tr>
<td>Function</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LAST_DAY</td>
<td>returns the date of the last day of the month that contains date</td>
</tr>
<tr>
<td>LEAST</td>
<td>returns the least of the list of exprs</td>
</tr>
<tr>
<td>LENGTH</td>
<td>returns the length of char</td>
</tr>
<tr>
<td>LENGTH2</td>
<td>returns the length of the specified string, using UCS2 code points</td>
</tr>
<tr>
<td>LENGTH4</td>
<td>returns the length of the specified string, using UCS4 code points</td>
</tr>
<tr>
<td>LENGTHB</td>
<td>returns the length of the specified string, using bytes instead of characters</td>
</tr>
<tr>
<td>LENGTHC</td>
<td>returns the length of the specified string, using Unicode complete characters</td>
</tr>
<tr>
<td>LN</td>
<td>returns the natural logarithm of n, where n is greater than 0</td>
</tr>
<tr>
<td>LOCALTIMESTAMP</td>
<td>returns the current date and time in the session time zone in a value of</td>
</tr>
<tr>
<td></td>
<td>datatype TIMESTAMP</td>
</tr>
<tr>
<td>LOG</td>
<td>computes the logarithm of an expression</td>
</tr>
<tr>
<td>LOWER</td>
<td>returns char, with all letters in lowercase</td>
</tr>
<tr>
<td>LPAD</td>
<td>returns expr1, left-padded to length n characters with the sequence of</td>
</tr>
<tr>
<td></td>
<td>characters in expr2</td>
</tr>
<tr>
<td>LTRIM</td>
<td>removes from the left end of char all of the characters contained in set</td>
</tr>
<tr>
<td>MAX</td>
<td>returns the maximum value of expr</td>
</tr>
<tr>
<td>MEDIAN</td>
<td>is an inverse distribution function that assumes a continuous distribution</td>
</tr>
<tr>
<td></td>
<td>model. It takes a numeric or datetime value and returns the middle value or</td>
</tr>
<tr>
<td></td>
<td>an interpolated value that would be the middle value once the values are</td>
</tr>
<tr>
<td></td>
<td>sorted</td>
</tr>
<tr>
<td>MIN</td>
<td>returns the minimum value of expr</td>
</tr>
<tr>
<td>MOD</td>
<td>returns the remainder of n2 divided by n1. Returns n2 if n1 is 0</td>
</tr>
<tr>
<td>MONTHS_BETWEEN</td>
<td>returns the number of months between date1 and date2</td>
</tr>
<tr>
<td>NANVL</td>
<td>useful only for floating-point numbers of type BINARY_FLOAT or BINARY_DOUBLE.</td>
</tr>
<tr>
<td></td>
<td>This function is useful for mapping NaN values to NULL</td>
</tr>
<tr>
<td>NEW_TIME</td>
<td>returns the date and time in time zone timezone2 when date and time in time</td>
</tr>
<tr>
<td></td>
<td>timezone1 are date</td>
</tr>
<tr>
<td>NEXT_DAY</td>
<td>returns the date of the first weekday named by char that is later than the</td>
</tr>
<tr>
<td></td>
<td>date</td>
</tr>
<tr>
<td>NLSSORT</td>
<td>returns the string of bytes used to sort char</td>
</tr>
<tr>
<td>NLS_INITCAP</td>
<td>returns char, with the first letter of each word in uppercase, all other</td>
</tr>
<tr>
<td></td>
<td>letters in lowercase</td>
</tr>
<tr>
<td>NLS_LOWER</td>
<td>returns char, with all letters in lowercase</td>
</tr>
<tr>
<td>NLS_UPPER</td>
<td>returns char, with all letters in uppercase</td>
</tr>
<tr>
<td>NULLIF</td>
<td>compares expr1 and expr2. If they are equal, then the function returns null.</td>
</tr>
<tr>
<td></td>
<td>If they are not equal, then the function returns expr1</td>
</tr>
<tr>
<td>NVL</td>
<td>lets you replace null (returned as a blank) with a string in the results of</td>
</tr>
<tr>
<td></td>
<td>a query</td>
</tr>
<tr>
<td>Function</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>NVL2</td>
<td>lets you determine the value returned by a query based on whether a specified expression is null or not null</td>
</tr>
<tr>
<td>ORA_HASH</td>
<td>computes a hash value for a given expression</td>
</tr>
<tr>
<td>POWER</td>
<td>returns n2 raised to the n1 power</td>
</tr>
<tr>
<td>RANK</td>
<td>calculates the rank of a value in a set of values</td>
</tr>
<tr>
<td>REGEXP_INSTR</td>
<td>extends the functionality of the INSTR function by letting you search a string for a regular expression pattern</td>
</tr>
<tr>
<td>REGEXP_REPLACE</td>
<td>extends the functionality of the REPLACE function by letting you search a string for a regular expression pattern</td>
</tr>
<tr>
<td>REGEXP_SUBSTR</td>
<td>extends the functionality of the SUBSTR function by letting you search a string for a regular expression pattern</td>
</tr>
<tr>
<td>REMAINDER</td>
<td>returns the remainder of n2 divided by n1</td>
</tr>
<tr>
<td>REPLACE</td>
<td>returns char with every occurrence of search_string replaced with replacement_string</td>
</tr>
<tr>
<td>ROUND</td>
<td>returns n rounded to integer places to the right of the decimal point</td>
</tr>
<tr>
<td>ROW_NUMBER</td>
<td>analytic function that assigns a unique number to each row to which it is applied</td>
</tr>
<tr>
<td>RPAD</td>
<td>returns expr1, right-padded to length n characters with expr2, replicated as many times as necessary</td>
</tr>
<tr>
<td>RTRIM</td>
<td>removes from the right end of char all of the characters that appear in set</td>
</tr>
<tr>
<td>SIGN</td>
<td>returns the sign of n</td>
</tr>
<tr>
<td>SIN</td>
<td>returns the sine of n (an angle expressed in radians)</td>
</tr>
<tr>
<td>SINH</td>
<td>returns the hyperbolic sine of n</td>
</tr>
<tr>
<td>SOUNDEX</td>
<td>returns a character string containing the phonetic representation of char</td>
</tr>
<tr>
<td>SQRT</td>
<td>returns the square root of n</td>
</tr>
<tr>
<td>SUBSTR</td>
<td>returns a portion of char, beginning at character position, substring_length characters long</td>
</tr>
<tr>
<td>SUM</td>
<td>returns the sum of values of expr. You can use it as an aggregate or analytic function</td>
</tr>
<tr>
<td>SYS_EXTRACT.UTC</td>
<td>extracts the UTC from a datetime value with time zone offset or time zone region name</td>
</tr>
<tr>
<td>TAN</td>
<td>returns the tangent of n (an angle expressed in radians)</td>
</tr>
<tr>
<td>TANH</td>
<td>returns the hyperbolic tangent of n</td>
</tr>
<tr>
<td>TO_BINARY_DOUBLE</td>
<td>returns a double-precision floating-point number</td>
</tr>
<tr>
<td>TO_BINARY_FLOAT</td>
<td>returns a single-precision floating-point number</td>
</tr>
<tr>
<td>TO_CHAR</td>
<td>(number) converts n to a value of VARCHAR2 datatype</td>
</tr>
<tr>
<td>TO_CLOB</td>
<td>converts NCLOB values in a LOB column or other character strings to CLOB values</td>
</tr>
<tr>
<td>TO_DATE</td>
<td>converts char of CHAR, VARCHAR2, NCHAR, or NVARCHAR2 datatype to a value of DATE datatype</td>
</tr>
<tr>
<td>Function</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>TO_MULTI_BYTE</td>
<td>TO_MULTI_BYTE returns char with all of its single-byte characters converted to their corresponding multibyte characters</td>
</tr>
<tr>
<td>TO_NCHAR</td>
<td>converts a character string, CHAR, VARCHAR2, CLOB, or NCLOB value to the national character set</td>
</tr>
<tr>
<td>TO_NCLOB</td>
<td>converts CLOB values in a LOB column or other character strings to NCLOB values</td>
</tr>
<tr>
<td>TO_NUMBER</td>
<td>converts expr to a value of NUMBER datatype</td>
</tr>
<tr>
<td>TO_SINGLE_BYTE</td>
<td>returns char with all of its multibyte characters converted to their corresponding single-byte characters</td>
</tr>
<tr>
<td>TO_TIMESTAMP</td>
<td>converts char of CHAR, VARCHAR2, NCHAR, or NVARCHAR2 datatype to a value of TIMESTAMP datatype</td>
</tr>
<tr>
<td>TO_TIMESTAMP_TZ</td>
<td>converts char of CHAR, VARCHAR2, NCHAR, or NVARCHAR2 datatype to a value of TIMESTAMP WITH TIME ZONE datatype</td>
</tr>
<tr>
<td>TRANSLATE</td>
<td>returns expr with all occurrences of each character in from_string replaced by its corresponding character in to_string</td>
</tr>
<tr>
<td>TRUNC</td>
<td>(number) returns n1 truncated to n2 decimal places</td>
</tr>
<tr>
<td>TZ_OFFSET</td>
<td>returns the time zone offset corresponding to the argument based on the date the statement is executed</td>
</tr>
<tr>
<td>UNISTR</td>
<td>takes as its argument a text literal or an expression that resolves to character data and returns it in the national character set</td>
</tr>
<tr>
<td>UPPER</td>
<td>returns char, with all letters in uppercase</td>
</tr>
<tr>
<td>VSIZE</td>
<td>returns the number of bytes in the internal representation of expr</td>
</tr>
<tr>
<td>WIDTH_BUCKET</td>
<td>lets you construct equiwidth histograms, in which the histogram range is divided into intervals that have identical size</td>
</tr>
</tbody>
</table>

**Unsupported Functions**

The following functions are not supported when you run queries using SuiteQL with the Connect Service:

- BIT_LENGTH
- CEILING
- CHAR
- CHARINDEX
- CHAR_LENGTH
- CHARACTER_LENGTH
- CONVERT
- COT
- DATEDIFF
- LCASE
- LEFT
- LENGTH
- LOCATE
Unsupported Features in SQL-92

When using SQL-92 syntax, there are several features that are not supported, including embedded null values in `CHAR` fields, `DEFAULT` clauses for column values, and subqueries in `SELECT` lists.

Available Record Types

SuiteAnalytics Workbook supports hundreds of record types available through a new data source. This includes most of the record types used throughout NetSuite, plus analytical record types currently in development for SuiteAnalytics Workbook, such as the Sales Analytical record type. These analytical record types are in a beta state and are subject to change. The data displayed within these record types are also subject to change and should be used for test purposes only.

The following link provides access to a Microsoft Excel worksheet that lists every record type and field that is currently available in SuiteAnalytics Workbook through the new data source. Custom fields and record types are not included in the worksheet. You can use this list to search for specific record types by name, or for specific fields using the field ID when you create a new workbook.

To access the worksheet, click this link: `WorkbookDataSource19_1.xlsx`.

**Important:** As fields and record types are continually added to the new data source, the contents of the `SuiteAnalyticsWorkbookDataSource.xls` file are subject to change. Make sure you download the most recent version of the worksheet to view the most current data.

Access to record types and fields in SuiteAnalytics Workbook is dependent on the same permissions used in the NetSuite Saved Search application. For example, to access sales order data through the Transaction record type using SuiteAnalytics Workbook, you need to have the Sales Order permission assigned to your role. Analytical record types such as the Sales (Invoiced) record type are only accessible to users with the SuiteAnalytics Administrator permission. Additionally, some record types are only available in SuiteAnalytics Workbook if you have specific features enabled in your account. For information about permissions—related access to record types and fields in the new data source, download the following worksheet: `NetSuitePermissionsUsage.xls`.

After you select a root record type for a workbook or open an existing workbook, the Records list on the DataSet tab shows all the related record types that you have access to. If you cannot find a record type and you think that it should be available based on the permissions assigned to your account, contact your administrator.

SuiteAnalytics Workbook Data Source Changes

The data source used by SuiteAnalytics Workbook is different than the data sources used by the NetSuite Saved Search and Report applications. In the new data source, concrete record types that have a
corresponding entry form in NetSuite remain mostly unchanged and use the same field labels. For example, the Employee record type in SuiteAnalytics Workbook contains all the fields that are on the NetSuite employee form, with the same field labels that are used in saved searches and reports. Generic record types that do not have a single corresponding form in NetSuite, such as the Transaction, Entity, and Item record types, use generic field labels. This is because generic record types are representative of multiple concrete record types. Additionally, some fields in the new data source are accessible through different record types than in saved searches and reports.

The design of the new data source means that the names of some record types and fields have changed or appear differently than on NetSuite forms, saved searches, and reports. Some fields, such as those with calculated values, have also not been ported to the new data source and other fields are only accessible by joining specific record types. Furthermore, the new data source includes some record types and fields that have been created specifically for SuiteAnalytics Workbook and are not available through saved searches and reports. These record types and fields are in a beta state and should be used for test purposes only.

To help you navigate the new data source, the following resources are available in the SuiteAnalytics Workbook user interface and the NetSuite Help Center:

- To view the record types and fields that you have access to in a workbook, open the DataSet tab. By default, the DataSet tab displays all joinable record types and fields based on the root record type of the workbook and the permissions assigned to the role you use to log in to NetSuite. For example, if you select the Customer record type, the following joinable record types are available:

If you click a record type, additional related record types are displayed.

- To recreate your existing saved searches using SuiteAnalytics Workbook, the changes to the new data source mean that you might have to use different record types and fields, create custom formula fields, or join multiple record types. Click this link to access a Microsoft Excel worksheet that compares the record types used by the Saved Search data source to the record types used in SuiteAnalytics Workbook: [TransactionMapping.xlsx](#)
Note: Currently, only information for the Transaction record type is included. The worksheet includes the field labels used in the Saved Search application compared to the field labels used in SuiteAnalytics Workbook. For fields that are only accessible through a joined record type, the spreadsheet also lists the required join path and record type name in SuiteAnalytics Workbook.

For annotated steps on how to recreate some of your saved searches using SuiteAnalytics Workbook, see the following topics. Each sample includes the fields, record types, and formulas required to recreate each search:

Note: These samples are based on some of the most commonly used SuiteSuccess saved searches. Users with the SuiteAnalytics Administrator permission can access predefined versions of these workbooks from the Standard Workbooks list on the Workbook Listing Page. Both predefined and manually authored versions of these workbooks should be used for demonstration purposes only. For more information about the predefined versions of these workbooks, see Standard Workbooks.

- Open Sales Orders Lines
- Number of Fulfillments
- Journal Entry to Approve

Open Sales Orders Lines

Note: NetSuite Administrators can view a predefined version of this workbook by clicking the Open Sales Orders Lines (DEMO) link in the Standard Workbooks list on the Workbook Listing Page. For more information, see Standard Workbooks.

This saved search displays the items allocated to open sales orders in your account, so that you can better monitor your inventory.

To perform this search using the Saved Search application, all required criteria and results fields are available through the Transaction record type. To recreate this search using SuiteAnalytics Workbook however, some required fields are only available through the Transaction Line and Transaction Accounting Line record types. You must therefore join these record types in your workbook to recreate this search. Additionally, some required fields might have different labels in SuiteAnalytics Workbook. The following table lists key differences in fields between the saved search and the workbook:

### Key Field Differences in SuiteAnalytics Workbook

<table>
<thead>
<tr>
<th>Field Name in Saved Search</th>
<th>Record Type in SuiteAnalytics Workbook</th>
<th>Required Join in SuiteAnalytics Workbook</th>
<th>Field Name in SuiteAnalytics Workbook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Line</td>
<td>Transaction Line</td>
<td>Transaction &gt; Transaction Line</td>
<td>Main Line</td>
</tr>
<tr>
<td>Tax Line</td>
<td>Transaction Line</td>
<td>Transaction &gt; Transaction Line</td>
<td>Tax Line</td>
</tr>
<tr>
<td>Closed</td>
<td>Transaction Line</td>
<td>Transaction &gt; Transaction Line</td>
<td>Closed</td>
</tr>
<tr>
<td>Account Type</td>
<td>Account</td>
<td>Transaction &gt; Transaction Line &gt; Transaction Accounting Line &gt; Account</td>
<td>Type</td>
</tr>
<tr>
<td>Shipping Line</td>
<td>Transaction Account Line</td>
<td>Transaction &gt; Transaction Line &gt; Transaction Accounting Line</td>
<td>Shipping Cost Item Type</td>
</tr>
</tbody>
</table>
**Warning:** In this workbook you must add fields from the Transaction Line and Transaction Accounting Line record types. When you add fields from either the Transaction Line or Transaction Accounting Line record type to a Transaction workbook, data duplication can occur. For more information, see Joining Transaction Line and Transaction Accounting Line to a Workbook.

To recreate this search using SuiteAnalytics Workbook:

Create a new workbook and select Transaction as the root record type. Then, set the following values in each tab of the SuiteAnalytics Workbook interface:

**Important:** Users assigned to the Sales role do not have access to the Account record type in SuiteAnalytics Workbook, which is required to properly recreate this saved search. Consequently, if you create and share this workbook with users assigned to the Sales role, it will not work as expected unless you also provide these users with access to the Account record type.

<table>
<thead>
<tr>
<th>Root Record Type</th>
<th>Joined Record Type(s)</th>
<th>Custom Formula Field(s)</th>
<th>Data Grid</th>
<th>Criteria</th>
<th>Pivot and Chart Tabs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction Line</td>
<td>Transaction Accounting Line, Account</td>
<td>Create the following formula fields on the DataSet tab:</td>
<td>Add the following fields to the grid from the Transaction record type:</td>
<td>Set the following criteria on the DataSet tab:</td>
<td>Pivot Tab</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name: Unfulfilled Items, Output Type: Float, Definition: -(transactionlines.quantity)-NVL(transactionlines.quantity.committed)-NVL(transactionlines.quantity.shipped/received/picked up)</td>
<td>Transaction, Status, Posting Period, Entity</td>
<td>[Custom Formula Field 2] greater than 0.00, Type is Sales Order, Status any of Sales Order : Partially Fulfilled and Sales Order : Pending Fulfillment and Sales Order : Pending Billing/Partially Fulfilled, Transaction Line: Main Line is false, Transaction Line: Tax Line is false, Transaction Line: Item Type none of Shipping Cost Item, Account: Type is income</td>
<td>See Open Sales Orders Lines Pivot Tables for information about setting up the following tables: Open Sales Orders by Date, Open Sales Orders by Location and Date, Open Sales Orders by Customer and Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use this formula to replace null values in the Transaction Line quantity and quantity committed fields with 0.00.</td>
<td>Item, Location, Quantity, Committed, Quantity Shipped/Received/Picked Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name: Positive Item Quantity, Output Type: Float, Definition: (transactionlines.quantity)</td>
<td>Add the following custom formula fields to the grid:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use this formula to display your item quantities as positive values.</td>
<td>Custom Formula Field 1 (Unfulfilled Items), Custom Formula Field 2 (Positive Item Quantity)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Important:** Make sure you join the Transaction Accounting Line record type from the Transaction Line record type. If you join both the Transaction Line and Transaction Accounting Line record types directly from the Transaction record, it can duplicate or otherwise skew your data. For more information, see Joining Transaction Line and Transaction Accounting Line to a Workbook.

**Note:** If the Multi-Book Accounting feature is enabled in your account, you can use the Accounting Book field in a criteria filter to view data for specific accounting books. To access the Accounting Book field, use the join path Transaction>Transaction Line>Transaction Accounting Line.

Open Sales Orders Lines Pivot Tables

By recreating this saved search using SuiteAnalytics Workbook, you can pivot your source data to summarize the information using various dimensions.
Create the following pivot tables by setting the listed fields to the appropriate dimensions on the Layout panel:

- **Open Sales Orders by Date**
  - **Rows**: Item
  - **Columns**: Date (Quarter)
  - **Values**: [Custom Formula Field 2] (Sum)

- **Open Sales Orders by Location and Date**
  - **Rows**: Location, Item
  - **Columns**: Date (Quarter)
  - **Values**: [Custom Formula Field 2] (Sum)

- **Open Sales Orders by Customer and Date**
  - **Rows**: Entity, Item
  - **Columns**: Date (Quarter)
  - **Values**: [Custom Formula Field 2] (Sum)

After you set each field to the appropriate table dimension, click the Refresh icon to generate the table.

You can also customize the table and add totals and grand totals, or rename each table. For more information, see **Pivot Table Customization**.

**Open Sales Orders Lines Charts**

By recreating this saved search using SuiteAnalytics Workbook, you can chart your source data to visualize the information using different chart types.

Create the following charts by dragging the listed fields from the Fields list to the corresponding section of the Layout panel, and select the chart type.

- **Open Sales by Item**
  - **X-Axis**: Item
  - **Series**: N/A
  - **Values**: Total Amount (Sum)
  - **Chart type**: Column chart

- **Open Sales by Date**
  - **X-Axis**: Date (Quarter)
  - **Series**: Item
  - **Values**: Total Amount (Sum)
  - **Chart type**: Line chart

After you set each field and the chart type, click the Refresh icon to generate the chart. You can also filter values, add a title and subtitle, and rename each axis. For more information, see **Workbook Charts**.

**Number of Fulfillments**

*Note:* NetSuite Administrators can view a predefined version of this workbook by clicking the Number of Fulfillments (DEMO) link in the Standard Workbooks list on the Workbook Listing Page. For more information, see **Standard Workbooks**.

This saved search shows the number of items which have been fulfilled.
To perform this search using the Saved Search application, all required criteria and results fields are available through the Transaction record type. To recreate this search using SuiteAnalytics Workbook however, some required fields are only available through the Transaction Line record type. You must therefore join this record to your workbook to recreate this search. Additionally, some required fields might have different labels in SuiteAnalytics Workbook. The following table lists key differences in fields between the saved search and the workbook:

**Key Field Differences in SuiteAnalytics Workbook**

<table>
<thead>
<tr>
<th>Field Name in Saved Search</th>
<th>Record Type in SuiteAnalytics Workbook</th>
<th>Required Join in SuiteAnalytics Workbook</th>
<th>Field Name in SuiteAnalytics Workbook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Transaction Line</td>
<td>Transaction &gt; Transaction Line</td>
<td>Entity</td>
</tr>
<tr>
<td>Period</td>
<td>Transaction</td>
<td>NA</td>
<td>Posting Period</td>
</tr>
<tr>
<td>Amount</td>
<td>Transaction Line</td>
<td>Transaction &gt; Transaction Line</td>
<td>Amount (Net)</td>
</tr>
<tr>
<td>Main Line</td>
<td>Transaction Line</td>
<td>Transaction &gt; Transaction Line</td>
<td>Main Line</td>
</tr>
</tbody>
</table>

**To recreate this search using SuiteAnalytics Workbook:**

Create a new workbook and select Transaction as the root record type. Then, set the following values in each tab of the SuiteAnalytics Workbook interface:

<table>
<thead>
<tr>
<th>Root Record Type</th>
<th>Joined Record Type(s)</th>
<th>Custom Formula Field(s)</th>
<th>Data Grid</th>
<th>Criteria</th>
<th>Pivot and Chart Tabs</th>
</tr>
</thead>
</table>
| Transaction      | Transaction Line      | N/A                     | Add the following fields to the grid from the Transaction record type:          | Set the following criteria on the DataSet tab using fields from the Transaction record type: | Pivot Tab
|                  |                       |                         | ■ Transaction  | ■ Type is Item Fulfillment |
|                  |                       |                         | ■ Date        |                        |
|                  |                       |                         | ■ Due Date    |                        |
|                  |                       |                         | ■ Type        |                        |
|                  |                       |                         | ■ Total Amount (Transaction Currency) |                        |
|                  |                       |                         | ■ Entity      |                        |
|                  |                       |                         | ■ Posting Period |                        |
|                  |                       |                         | Add the following field to the grid from the Transaction Line record type:     |                        |
|                  |                       |                         | ■ Location    |                        |
|                  |                       |                         |                        |                        |

**Number of Fulfillments Pivot Tables**

By recreating this saved search using SuiteAnalytics Workbook, you can pivot your source data to summarize the information using various dimensions. Create the following pivot table by setting the listed fields to the appropriate dimensions on the Layout panel:
Number of Fulfillments Per Customer

- **Rows:** Entity
- **Columns:** Date (Year)
- **Measures:** Transaction (Count)

After you set each field to the appropriate table dimension, click the Refresh icon to generate the table.

You can also customize the table and add totals and grand totals, or rename each table. For more information, see <Pivot Table Customization>.

Number of Fulfillments Chart

By recreating this saved search using SuiteAnalytics Workbook, you can chart your source data to visualize the information using different chart types.

Create the following chart by dragging the listed fields from the Fields list to the corresponding section of the Layout panel, and select the chart type.

- **Number of Fulfillments per Customer**
  - **X-Axis:** Entity
  - **Series:** Date (Year)
  - **Values:** Transaction (Count)
  - **Chart type:** Column chart

After you set each field, click the Refresh icon to generate the chart. You can also filter values, add a title and subtitle, and rename each axis. For more information, see Workbook Charts.

Journal Entry to Approve

**Important:** This workbook is only useful if you have enabled the Require Approvals on Journal Entries permission in your NetSuite account. For more information, see the help topic General Accounting Preferences.

**Note:** NetSuite Administrators can view a predefined version of this workbook by clicking the Journal Entry to Approve (DEMO) link in the Standard Workbooks list on the Workbook Listing Page. For more information, see Standard Workbooks.

This saved search shows the list of journal entries requiring approval. By recreating this saved search using SuiteAnalytics Workbook, you can use the workbook drill down capability to open and approve each journal entry directly from the Data Grid.

To perform this search using the Saved Search application, all required criteria and results fields are available through the Transaction record type. To recreate this search using SuiteAnalytics Workbook however, some required fields are only available through the Transaction Line and Transaction Accounting Line record types. You must therefore join these records to your workbook to recreate this search. Additionally, some required fields might have different labels in SuiteAnalytics Workbook. The following table lists key differences in fields between the saved search and the workbook:

**Key Field Differences in SuiteAnalytics Workbook**
<table>
<thead>
<tr>
<th>Field Name in Saved Search</th>
<th>Record Type in SuiteAnalytics Workbook</th>
<th>Required Join in SuiteAnalytics Workbook</th>
<th>Field Name in SuiteAnalytics Workbook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>Transaction</td>
<td>NA</td>
<td>Posting Period</td>
</tr>
<tr>
<td>Tax Period</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>This field has been deprecated in SuiteAnalytics Workbook</td>
</tr>
<tr>
<td>Name</td>
<td>Transaction Line</td>
<td>Transaction &gt; Transaction Line</td>
<td>Entity</td>
</tr>
<tr>
<td>Memo</td>
<td>Transaction Line</td>
<td>Transaction &gt; Transaction Line</td>
<td>Memo</td>
</tr>
<tr>
<td>Created From</td>
<td>Transaction Line</td>
<td>Transaction &gt; Transaction Line</td>
<td>Created From</td>
</tr>
<tr>
<td>Account</td>
<td>Transaction Accounting Line</td>
<td>Transaction &gt; Transaction Line &gt;</td>
<td>Account</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transaction Accounting Line</td>
<td></td>
</tr>
<tr>
<td>Amount</td>
<td>Transaction Accounting Line</td>
<td>Transaction &gt; Transaction Line &gt;</td>
<td>Amount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transaction Accounting Line</td>
<td></td>
</tr>
</tbody>
</table>

**Warning:** In this workbook you must add fields from the Transaction Line and Transaction Accounting Line record types. When you add fields from either the Transaction Line or Transaction Accounting Line record type to a Transaction workbook, data duplication can occur. For more information, see [Joining Transaction Line and Transaction Accounting Line to a Workbook](#).

**To recreate this search using SuiteAnalytics Workbook:**

Create a new workbook and select Transaction as the root record type. Then, set the following values in each tab of the SuiteAnalytics Workbook interface:

<table>
<thead>
<tr>
<th>Root Record Type</th>
<th>Joined Record Type(s)</th>
<th>Custom Formula Field(s)</th>
<th>Data Grid</th>
<th>Criteria</th>
<th>Pivot Tab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction</td>
<td>■ Transaction Line</td>
<td>NA</td>
<td>Add the following fields to the grid from the</td>
<td>Set the following criteria on the DataSet tab:</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>□ Transaction Accounting Line</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Guidelines for Joining Record Types in SuiteAnalytics Workbook

SuiteAnalytics Workbook enables you to add fields from multiple record types to a single workbook. This includes record types that are more than one join away from the root record type of a workbook, enabling you to compile workbook source data from a more diverse set of record types.

By default, the DataSet tab lists all joinable record types that you have access to. To complete a join, you must add fields from the desired record type to the Data Grid or create a Criteria filter on the DataSet tab.

If joining record types is a new concept for you, there are a number of considerations you should make before you attempt to join different record types in a workbook. To best take advantage of this powerful new capability, see the following topics:

- The data source used by SuiteAnalytics Workbook contains a variety of record types with predefined relationships to one another. Depending on the type of relationship between each record type that you add to a workbook, certain joins can cause unwanted duplication of your workbook source data. For more information, see Data Duplication Based on Record Joins.
- The Transaction and Transaction Line record types share a one-to-many relationship which can result in duplication of your workbook source data. Joining the Transaction Accounting Line record type to a Transaction workbook can also cause data duplication. For more information about using the Transaction record type in a workbook, see Joining Transaction Line and Transaction Accounting Line to a Workbook.
Based on the relationship between each record type that you add to a workbook, the order in which you join record types to a workbook can also impact your source data. For more information, see Join Order in SuiteAnalytics Workbook.

Data Duplication Based on Record Joins

The data source used by SuiteAnalytics Workbook contains different record types with predefined relationships to one another. In the SuiteAnalytics Workbook user interface, you can browse through these relationships in the Records list on the DataSet tab.

Note: The record types listed on the DataSet tab are based on the root record type of the workbook, the features enabled in your account, and the permissions assigned to the role you use to log in to NetSuite. If you do not see a record type that you think you should have access to, contact your NetSuite administrator.

There are two types of relationships that you should be cautious of when you join record types to a workbook: those with a one-to-many relationship with the source record type, and those with a many-to-many relationship with the source record type.

One-to-many relationships between record types are those in which the source record type can be associated to multiple iterations of the target record type. For example, consider the relationship between the Transaction and Transaction Line record types. For each transaction record there can be multiple transaction line records that are associated by common field values such as the transaction ID, and the transaction total. When records with a one-to-many relationship are joined in a workbook, the cardinality of the data from the source record type is duplicated for each instance of the target record type. This duplication can result in inaccurate data aggregations and summaries in your workbook.

To better understand the implications of joining records with a one-to-many relationship, consider the Total Amount field on the Transaction record type.

In a Transaction workbook, for each transaction record listed there is a single value for the Total Amount field.
However, if you join the Transaction Line record type to the workbook by adding a Transaction Line field to the Data Grid, notice that the number of values listed for the Total Amount field is multiplied by the number of associated transaction line records.

The result is that aggregations based on the duplicated source record fields are inaccurate. This includes the summaries displayed at the bottom of the Data Grid, and the totals and grand totals that you set up on the Pivot Tab.
This data duplication can also occur when you create criteria filters using fields from record types that have a one-to-many relationship, even if you do not explicitly add fields from the joined record type to the Data Grid.

For example, assume you are working on a Transaction workbook with only one transaction record that matches your selected criteria.

If you create an additional criteria filter based on the Transaction Line record type, the results are again multiplied in the Data Grid.
In record types with a many-to-many relationship, the same duplication can occur. Many-to-many relationships between record types are those in which multiple iterations of the source record can be associated to multiple iterations of the target record type. For example, in a multi-subsidiary account, each account record can be assigned to multiple subsidiaries and each subsidiary record can be associated with multiple accounts. Consequently, the Account and Subsidiary record types share a many-to-many relationship, and joining these record types in a workbook can also cause data duplication.

You should always be cautious when you create joins between record types that have a one-to-many or many-to-many relationship. If you do perform these types of joins, be aware of the impact they will have on your workbook source data, and conversely, your data aggregations.

### Joining Transaction Line and Transaction Accounting Line to a Workbook

In the Saved Search application, by default a Transaction saved search could include both accounting and operational data. In SuiteAnalytics Workbook however, transaction data is stored across three record types: Transaction, Transaction Line, and Transaction Accounting Line. Consequently, to include all transaction-related data in a single workbook, you might need to add fields from the Transaction Line or Transaction Accounting Line record types to your workbook. In some instances, you might even need to add fields from both record types.

If you need to join the Transaction Accounting Line record type to a workbook, you must use the join path **Transaction> Transaction Line> Transaction Accounting Line**. This join path prevents multiple instances of data duplication caused by the relationship between the Transaction, Transaction Line, and Transaction Accounting Line record types, which would occur if you used the join path **Transaction> Transaction Accounting Line**. For more information about data duplication based on specific record joins, see [Data Duplication Based on Record Joins](#).

If you have the Multi-Book Accounting feature enabled in your account and join the Transaction Accounting Line record type to a workbook, be aware that this can cause additional data duplication. This duplication occurs because each Transaction Accounting Line stores data for each accounting book in your NetSuite account. Consequently, joining the Transaction Accounting Line record type with the Multi-Book Accounting feature enabled in your account can cause inaccurate data aggregations and negatively...
impact the performance speed of your workbook. To limit this, consider creating a criteria filter so that
data from only one accounting book is included in your workbook.

To watch a video that demonstrates how data can be impacted by joining the Transaction Line and
Transaction Accounting Line record types in a workbook, click here.

Join Order in SuiteAnalytics Workbook

As specified in the Data Duplication Based on Record Joins topic, data duplication can occur when you join
record types with a one-to-many or many-to-many relationship in a workbook. We can also demonstrate
this duplication by examining the order in which record types are added to a workbook.

Consider the relationship between the Entity and Transaction record types: for each transaction record,
there can only be one associated entity or customer record. Each customer record however, can be
associated with multiple transaction records. This means that aggregations such as field counts can vary
from workbook to workbook even if they contain the same fields and record types, depending on the
order that they are added to the workbook.

For example, assume you want to see a list of customers and their associated transactions. If you create
a new workbook beginning with the Entity record type, you can then join the Transaction record type
to view each associated transaction. If you select the Entity field to view a count of the total number of
distinct customers, it is displayed at the bottom of the Data Grid.

If you create your workbook beginning with the Transaction record type and join the Entity record type
however, notice that the number of distinct customers decreases.
This discrepancy is another implication of the one-to-many relationship between specific record types. To avoid confusion over these discrepancies, make sure you join related record types in the correct order according to the type of workbook and results you want to generate.
Custom Workbooks

A workbook combines raw query data, complex filter definitions, pivot tables, and charts to give you a holistic view of your business data. Workbooks can be saved and shared with other users in your NetSuite account, enabling them to continue your analysis or create their own custom workbooks. You can also add workbook-based charts and pivot tables to your dashboards to provide users with high level data when they log in to their NetSuite accounts.

- To begin authoring a workbook, you need to define your source data by creating a query on the DataSet tab. For step-by-step instructions including how to add record types and fields to a workbook and for information about creating custom formula fields, see Defining Workbook Source Data.
- After you define your source data, you can filter your results by creating criteria filters on the DataSet tab. Criteria filters can be based on existing values in your source data, or custom values that you define. For more information, see Workbook Criteria Filters.
- When you are satisfied with your source data, you can use the Pivot tab to summarize and aggregate your data in a pivot table. You can also customize and add additional filters to your pivot table to best suit your needs. Additionally, you can add your workbook-based pivot tables to the Analytics portlet on any NetSuite dashboard. For more information, see Workbook Pivot Tables.
- To create visualizations of your data, you can create a chart on the Chart tab. There are multiple chart types you can choose from, and you can add your workbook-based charts to the Analytics portlet. For more information, see Workbook Charts.

Defining Workbook Source Data

After you select a root record type for your workbook, the DataSet tab appears enabling you to define your workbook source data by creating a query. Workbook source data can include fields from multiple record types, custom formula fields, and hierarchical fields.

On the DataSet tab, workbook source data is displayed in a tabular format in the Data Grid on the right. When you create a new workbook, the Data Grid is automatically populated with fields from the root record type that you select for the workbook. Joinable record types and fields that you can add to your source data appear in the Records and Fields lists on the left. Above the Records list, you can also create custom formula fields through the Formulas link. Only fields that you have added to the Data Grid can be used in workbook pivot tables and charts.

- To view the fields of a record type, click the name of the record type in the Records list to refresh the Fields list.
- To view related record types for each record type in the list, click the arrow next to the name of a record type. The Records list will expand with additional record types.
- To join a record type to a workbook, you must add fields from the record type to the Data Grid or create a criteria filter on the DataSet tab. For more information about workbook criteria filters, see Workbook Criteria Filters.

You can join any number of record types to a workbook, however more than ten joined record types can impact the performance of the workbook. Additionally, only record types and fields that you have access to based on the permissions assigned to your role and the features enabled in your account are displayed in the Records and Fields lists.

For more information about joining records to a workbook, see Guidelines for Joining Record Types in SuiteAnalytics Workbook.
For information about access to specific record types and fields in NetSuite, download the following worksheet: NetSuitePermissionsUsage.xls. If you do not have access to a field or record type in SuiteAnalytics Workbook, contact your NetSuite administrator.

To define your workbook source data:

1. Add fields from the root record type to the Data Grid. You have three options:
   - Drag the desired fields from the Fields list to the Data Grid.
   - Double-click the desired field names in the Fields list.
   - Type the name of the desired fields in the search bar above the Fields list, then drag or double-click them to add them to the Data Grid.
     
     Note: If you add a hierarchical field to the Data Grid, you are prompted to select whether to display the child values or the full hierarchy for each record type in the corresponding field column. For more information, see Hierarchical Fields.

2. Add fields from related record types to the Data Grid.
   a. Click the arrow next to any record type in the Records list to view additional related record types.
   b. Click the desired record type name to update the Fields list.
   c. Double-click or drag the desired fields to the Data Grid.

     Note: Certain record types in SuiteAnalytics Workbook have multiple variants. For example, there are multiple Customer record types such as Customer Created By, Customer Entity, and Customer Last Modified By. Make sure you select the correct record type depending on the type of data you want to include in your workbook.

3. Optionally, click the Formulas link to view, create, and add custom formula fields to the Data Grid. For step-by-step instructions on how to create a custom formula field, see Formula Fields.

4. Remove any fields you do not want to include in your workbook source data from the Data Grid.
   a. Click the Field Menu icon in the column you want to remove from the Data Grid.
   b. Select Remove Column from the dropdown list.

   Important: If you have previously created a workbook, pivot table, or chart using the source data presented in the Data Grid, removing a field from the grid also removes it from any associated workbooks and workbook components. This can cause workbook failures. Consequently, you should exercise caution when removing a field from the grid.

Formula Fields

In SuiteAnalytics Workbook, you can create custom formula fields to calculate values that are not available through standard record fields. You can add formula fields to your workbook source data on the Data Grid and use them to define criteria filters. You can also use them in your chart and pivot table layouts. The values of custom formula fields are updated each time you refresh the Data Grid, Pivot tab, or Chart tab. Currently, you cannot create custom formula fields based on existing formula fields.

To define a custom formula field, you combine NetSuite fields and SQL formula functions in a formula definition. You must also select an output type for the formula, depending on the fields and functions you include in your definition. SuiteAnalytics Workbook supports the following formula output types:
Defining Workbook Source Data

- **Boolean** - Returns True, False, or NULL values
- **Date** - Returns day, month, and year values
- **Datetime** - Returns day, month, year, hour, and minute values
- **Float** - Returns values that include a decimal, such as currency values
- **Integer** - Returns values that are in whole numbers only, such count values
- **String** - Returns fixed string character values, such as names
- **Clobtext** - Returns long unicode character strings, such as item descriptions
- **Percent** - Returns numeric values as percentages
- **Duration** - Returns hour and minute values, such as hours worked

Knowledge of SQL will help you to fully leverage the flexibility and power of SQL functions to define complex formulas. The following link provides access to a Microsoft Excel worksheet that describes every SQL function currently supported in the SuiteAnalytics Workbook formula builder. The information contained in this worksheet is also available on the Functions subtab in the Formula Field window. You can use this worksheet if you are not sure about which function to use in a formula definition.

To access the worksheet, click this link: SuiteAnalyticsWorkbookFormulaFunctions.xls.

For more information about SQL formula functions, see the help topic SQL Expressions.

For sample formulas you can create using some of the supported SQL functions, see Sample Formulas.

**To create a custom formula field in SuiteAnalytics Workbook:**

In the following example, you create a formula field that converts date values to a different format. Remember that the Formula Field window only includes fields from the root record type on the workbook and any fields from related record types that have been added to the Data Grid.

**Important:** Currency fields such as the Total Amount (Transaction Currency) field must be converted using the TO_NUMBER function in order to perform aggregations and other types of numeric manipulation. For more information, see Currency Conversion Using Custom Formula Fields.

1. Click the Formulas link above the Records list on the DataSet tab.
2. In the Fields list, click New Formula.
   - The Formula Field window appears.
3. Enter a Formula Field Name.
   For example, enter **Formatted Date**.

4. Select an Output Type for the formula field values.
   For the purposes of this procedure, select **String**.
5. In the Formula field, enter the field IDs and SQL formula functions to use in the formula expression. Alternatively, double-click the desired field IDs or formula functions from the Functions and Fields subtabs to add them to the expression.

For the purposes of this procedure, select the TO_CHAR function and replace the content in the brackets with `{trandate}`, `'Month DD, YYYY'`.

**Note:** Each output type only works with certain fields and formula functions. If you select an incompatible output type for the formula, the formula is invalidated. To view details about the validation error, click the error icon.

---

![Formula Field](image-url)

**FORMULA FIELD NAME**

- **Formatted Date**

**FORMULA**

-Type in your formula-

**CHOOSE OUTPUT TYPE**

- **STRING**
- **BOOLEAN**
- **DATE**
- **DATETIME**
- **FLOAT**
- **INTEGER**
- **CLOBTEXT**
- **PERCENT**
- **DURATION**

**Functions**

- Search functions
- Select a function

**Fields**

- MOST RECENTLY USED
- ALL
- ABS
- ACOS
- ADD_MONTHS
- ASCN

---

**Note:** Each output type only works with certain fields and formula functions. If you select an incompatible output type for the formula, the formula is invalidated. To view details about the validation error, click the error icon.

For the purposes of this procedure, select the TO_CHAR function and replace the content in the brackets with `{trandate}`, `'Month DD, YYYY'`.
6. To validate the formula, click **Validate**.

**Note:** If there are errors with the formula, click the error icon to view the details.

7. Click **Apply** to add the formula field to the workbook.

The field appears in the Field lists on the DataSet tab when you click the Formulas link. If you add the field to the Data Grid, it is also available on the Pivot and Chart tabs for use in your layouts.

### To create criteria filters using formula fields:

1. Create a valid formula field on the DataSet tab.
2. Double-click or drag the field from the Fields list to the Criteria Builder.
3. Set the desired filter conditions in the Filter window. For details, see Filter Types.

### To add formula fields to a pivot table or chart layout:

1. Create a valid formula field on the DataSet tab.
2. Add the field to the Data Grid so that it is included in your workbook source data.
3. On the Pivot or Chart tab, drag the field from the Fields list to the desired section of the Layout panel.
Sample Formulas

The SuiteAnalytics Workbook formula builder enables you to create custom formula fields using any of the formula functions listed in the SuiteAnalyticsWorkbookFormulaFunctions.xls spreadsheet. See the following sections for sample formulas you can create using the CAST_TO_DATE, and TO_NUMBER functions:

- Calculating DATE and DATETIME values using CAST_TO_DATE

For additional sample formulas, see the help topic Search Formula Examples and Tips.

Calculating DATE and DATETIME values using CAST_TO_DATE

Date and time values in NetSuite are stored using multiple formats. For example, the Transaction record type contains a Date field with values that are stored in the DATE format, and a Date Created field with values that are stored using the DATETIME format.

Currently, the SuiteAnalytics Workbook formula builder does not support the output type INTERVALDS. This means that if you want to calculate the amount of time that has elapsed between different DATE and DATETIME values, you must first normalize the values using the CAST_TO_DATE function.

For example, assume you want to know how many days have passed between the Date and the Date Created in each of the following transaction records:

To do so, you can use the formula definition CAST_TO_DATE({createddate}) – CAST_TO_DATE({trandate}), with an output type of FLOAT.
The resulting values display the number of days between each date, regardless of date formats used in the formula definition.
Hierarchical Fields

SuiteAnalytics Workbook supports hierarchical fields. Hierarchical fields behave similarly to standard record fields, except that you can choose to display the field values as hierarchies or child values. You can also create filter conditions at the parent or child levels of the hierarchy.

Display Options for Hierarchical Fields

When you add a hierarchical field to the Data Grid or to a pivot table or chart, you are prompted to select a display option for the field values.

On the Data Grid, you have the following options:

- Select **Show child level only** to display only the child-level values for the field.
- Select **Show hierarchy** to display the full hierarchy values for the field.

To change the hierarchy display after adding a field to the grid, click the Field Menu icon and select **Show Hierarchy**.

On the Pivot and Chart tabs, you have the following options:

- Select **Show child level only** to display only the child-level values for the field.
- Select **Show single-column hierarchy** to display the full hierarchy values for the field in a single column or chart measurement.
- Select **Show multi-column hierarchy** to display each level of the hierarchy in a separate table column or chart measurement. If you select this option and enable total or grand totals for the pivot table, totals are calculated for each hierarchy level.
For example, in the following table the Item field is displayed as a multi-column hierarchy. Consequently, the table calculates totals for each subscription type and for the Production (Subscription) parent level.

To change the hierarchy display for a field after adding it to a pivot table or chart, click the Field Menu icon in the Layout panel and select a new display option.

**Filter Conditions for Hierarchical Fields**

When you create a filter condition based on a hierarchical field, there is an additional Show Hierarchy option displayed in the Filter window.
When this option is enabled, the filter window displays only the parent values for the selected field. If you create a filter condition at the parent level, only records with fields that have the selected parent are included in your workbook. For example, assume your source data has two records with a class of New Customer but only one of those records has a parent class of Web Store Business. If you create a filter condition to exclude records that have a parent value of Web Store Business, one of the New Customer records is removed from your workbook.

Advanced Query Sorting

You can sort the values that are displayed in the Data Grid using the Advanced Sorting window. Sorting options that you apply to the Data Grid do not affect your workbook source data and should only be used to improve the readability of the values presented on the grid. To filter and sort the values included in your workbook source data, you must create filter conditions on the Criteria tab. For more information, see Workbook Criteria Filters.

To open the Advanced Sorting window, click the Advanced Sorting icon above the Fields list on the Data tab. Alternatively, click the Field Menu icon next to a column in the Data Grid and select Add Sort... from the menu.

In the advanced sorting window, you can set up sorting conditions for any field in the Data Grid. After you set up each condition, you can select the order in which each condition should be considered.

The elements of the Advanced Sorting window are identified in the following image:
Defining Workbook Source Data

1. **Up/ Down Arrows** — Click the arrows to change the order of the sorting conditions. Alternatively, click and drag the entire row to the desired location.

2. **Field list** — Select the field you want to create a sorting condition for.

3. **Sort** — Sort the result set in ascending or descending order, based on the values of the selected field.

4. **Options** — Click this icon to view the following options specific to the selected sorting condition:
   - **NULL First** — If checked, blank values for the selected field are listed first in the corresponding column in the Data Grid.
   - **Case Sensitive** — If checked, values beginning with capital letters are listed first in the corresponding column in the Data Grid.
   - **Language** — Sort the result set based on the alphabetic sequence of the selected language.

5. **Delete** — Remove the selected sorting condition.

6. **Add Sorting** — Add another sorting condition, for a different field.

7. **OK** — Apply the selected sorting conditions to the Data Grid.
   - **Cancel** — Close the Advanced Sorting window without making any changes to the existing sorting conditions.
   - **Remove All** — Remove all of the sorting conditions currently listed in the Advanced Sorting window.

Joining Records to Workbooks

SuiteAnalytics Workbook enables you to join multiple record types to a single workbook. This includes record types that are more than one join away from the root record type of a workbook, enabling you to compile workbook source data from a more diverse set of records.

To join a record to a workbook, simply click the Join Record icon on the Data tab next to the desired record on the Fields list. Record types joined on the Data tab are automatically added to the Fields list in the Criteria tab. Likewise, if you join records or remove joined records on the Criteria tab, those changes are reflected on the Data tab.

If joining record types is a new concept for you, there are a number of considerations you should make before you begin such as the effect of one-to-many relationships, and the direction and order of your joins. This is especially true if you are working on a Transaction workbook and want to join the Transaction Line and Transaction Accounting Line record types.
For more information, see Guidelines for Joining Record Types in SuiteAnalytics Workbook.

Currency Conversion

If you are in a NetSuite account with multiple currencies and your workbook contains fields with values in multiple currencies, you can apply currency consolidation or currency conversion to those fields. This is required for accurate data aggregations and other types of numeric manipulation for fields with values in multiple currencies. In SuiteAnalytics Workbook, currency consolidation enables you to convert the values of a field to the currency of the lowest level subsidiary that is a common parent to all the subsidiaries that you have access to in your account. Conversely, currency conversion enables you to convert the values of a field to any currency you have set up in your account.

To apply currency conversion to your workbooks, you must have the Multiple Currencies feature enabled in your account. To apply currency consolidation to your workbooks, you must be in a NetSuite OneWorld account. Additionally, you should make sure that your currency records, chart of accounts, currency exchange rates, and currency conversion rates are all set up correctly to ensure that the correct rates and accounting periods are used during conversion. For more information, see the topics:

- Currency Exchange Rates
- Consolidated Exchange Rates
- Multiple Currencies in OneWorld

In SuiteAnalytics Workbook, you can apply consolidation or conversion to an applicable field directly from the user interface on the Data Grid or Pivot Tab. You can also create custom formula fields to apply consolidation to a specific field using the SuiteAnalytics formula builder. Additionally, you can apply consolidation when you create workbook filter conditions based on a field that contains values with multiple currencies.

Consolidation and Conversion from the User Interface

To apply consolidation or conversion from the SuiteAnalytics Workbook user interface, click the Field Menu icon next to an applicable field in the Data Grid or Layout Panel, then select Currency. Depending on the field, you are presented with up to four options:

- **Display Original**: displays each amount in the original currency used for the transaction.
- **Apply Consolidation**: consolidates each amount to the currency of the lowest level subsidiary that is a common parent to all the subsidiaries that you have access to in your account. In SuiteAnalytics Workbook, the rate type used for the consolidation is based on the general rate type set up for each account in your chart of accounts: either Historical, Average, or Current. For more information about Consolidated Exchange Rates in NetSuite, see the help topic Consolidated Exchange Rates.

  **Note**: You cannot apply currency consolidation to Total Amount (Transaction Currency) values from the Data Grid or the Pivot Tab. To convert these values for use in data aggregations, use the currency conversion options or define a custom formula field. For more information, see Currency Conversion Using Custom Formula Fields.

- **Apply Conversion**: converts each amount using the currency and date selected on the Convert To window. By default, the Convert To window is set to the currency of the lowest level subsidiary that is a common parent to all the subsidiaries that you have access to in your account and the current date.

- **Conversion Options...**: opens the Convert To window. In the Convert To window, you select the currency and date to use when the Apply Conversion option is selected. The rates used in the conversion are drawn from the table of currency exchange rates set up in your account. For more information, see the help topic Currency Exchange Rates List Page.
Defining Workbook Source Data

Note: If you check the Anchor Relative to Today box, the current date will be used for the conversion each time the workbook is opened.

Currency Conversion Using Custom Formula Fields

You can create custom formula fields using the TO_NUMBER function to convert field values that are in multiple currencies. This is useful when you want to perform data aggregations between two fields that contain values in multiple currencies. For example, to create a formula that displays the remaining balances on the invoices in your account regardless of the original currency used on each invoice, you can create a custom formula field using the following definition: TO_NUMBER ({total#sign_consolidated}) - TO_NUMBER ({amountpaid#sign_consolidated}).

For some fields such as the Total Amount (Transaction Currency) field, you must create custom formula fields that apply currency conversion before you can perform any types of aggregation with these fields, or to use the values of these fields in the Pivot and Chart tabs. Use the following custom formula field definitions to create fields that convert your Total Amount (Transaction Currency) values using a specific currency ID, and date. The output type for each of these formulas is FLOAT:

Note: To use these formulas with other fields that contain values in multiple currencies, replace foreigntotal with the appropriate field ID.

- TO_NUMBER((foreigntotal#converted))
  - Converts the amounts using the currency of the lowest level subsidiary that is a common parent to all the subsidiaries that you have access to in your account, and today's date
- TO_NUMBER((foreigntotal#converted[1]))
  - Converts the amount using the currency ID specified in the square brackets [1] and today's date
- TO_NUMBER((foreigntotal#converted[1;2017-01-30]))
  - Converts the amount using the currency ID [1] and the date specified in the square brackets [2017-01-30]

Filter Criteria Based on Fields with Values in Multiple Currencies

When you create filter conditions based on fields with values in multiple currencies, the Filter window includes a Consolidate Field box. Check this box to apply the filter based on the consolidated values of the field.
Defining Workbook Source Data

Note: You cannot apply currency consolidation to fields such as the Total Amount (Transaction Currency) field from the Criteria tab. To create filter conditions based on the values of these fields, you must first define a custom formula field that applies currency conversion to the field, then create your filter conditions based on the custom formula field. For more information, see Currency Conversion Using Custom Formula Fields.

When you check the Consolidate Field box, the values of the field are consolidated before the selected filter conditions are applied. The currency used for the consolidation is that of the lowest level subsidiary that is a common parent to all the subsidiaries that you have access to in your account. The date used to calculate the rate of the consolidation is the current date.

Workbook Criteria Filters

The Criteria tab is where you set up filter conditions to refine the source data for your workbook. Unlike filters you create on the Pivot tab or sorting options you apply to the Data Grid, the filter conditions you create on the Criteria tab remove records and fields from your workbook source data. Filters are joined by AND/OR logic within the Criteria Builder and can be grouped so that multiple filter conditions are evaluated as one item within the list of filters. You can edit or delete filter conditions as necessary, or move each condition so that they are evaluated in a different order.

As with the Data tab, records and fields that you have access to appear in the Fields list on the left. Any filters you create are listed in the Criteria Builder on the right in the order that they are applied to the source data. When you create a new filter condition, your query results in the Data tab are automatically updated and a list of the applied filters are displayed in a Criteria Summary above the Data Grid. To apply
new filter conditions to any previously created pivot tables or charts in your workbook, you must manually refresh them.

Keep in mind that if you create a filter condition based on a joined record type that has a one-to-many or many-to-many relationship with the root record of the workbook, the cardinality of your data might change which can cause data duplication. For more information, see Data Duplication Based on Record Joins.

To create a workbook filter condition:

1. Click the Criteria tab from anywhere within the workbook application.
2. On the Criteria tab, double-click or drag the desired record field or formula field from the Fields list to the Criteria Builder.
   The Filter window appears.
3. In the Filter window, select the filter conditions you want to apply to the field. Up to four types of filters are available depending on the field you select. For more information, see Filter Types.
   **Note:** For hierarchical fields, you can set any filter type at the child or hierarchy level. For more information, see Filter Conditions for Hierarchical Fields.
4. Optionally, if you want to group your filter conditions, click New Group.
   Grouped filters are considered one item in the list of conditions and are evaluated in the order that they appear in the Criteria Builder. For more information, see Grouping Filters.
5. Repeat steps 1–4 for each filter or filter group you want to define.
   By default, filters are added using an AND operator. To change the relationship between filters and filter groups, click the AND link and select OR from the popup window.
6. Click the Data tab when you are finished defining your filters.
   The Data Grid displays only values that match your selected filter conditions, and a Criteria Summary is shown above the grid.

Filter Types

On the Criteria tab when you add a field from the Fields list to the Criteria Builder, the Filter window appears. Use the Filter window to set up specific filter conditions for a field. The types of filters you can set up depend on the values of the field, with each filter type represented by a different tab in the Filter window.
Important: The Filter window is also accessible from the Data Grid, however filter conditions set up from the grid only impact the values that are displayed there and do not affect the source data available for the workbook. Only filters you set up from the Criteria tab affect source data.

In each tab of the Filter window, you can define the values and expressions for the filter. You can only create one type of filter per field at a time however, unless you use a group of filters. For more information, see Grouping Filters. The available values and expressions in each tab of the Filter window depend on the type of field you select.

- Values: Create a filter condition based on existing values or dates in the source data, or custom values
- Ranges/ Date Ranges: Create a filter condition based on a range of values or dates available in the source data
- Relative Conditions/ Relative Dates: Create a filter condition relative to the existing values or dates in the source data
- Conditions/ Specific Dates: Create a filter condition using custom values or dates and an expression

Note: For hierarchical fields, filter conditions can be set at the parent or child level. For more information, see Hierarchical Fields.

If you are in a NetSuite OneWorld account and create a filter based on a field that contains values in multiple currencies, a Consolidate Field box is also displayed in the Formula window. Check the Consolidate Field box to apply the filter based on the consolidated values of the field. For more information, see Filter Criteria Based on Fields with Values in Multiple Currencies.

Grouping Filters

On the Criteria tab, you can click New Group in the Criteria Builder to create a group of filters.
Grouped filters are the same as parenthetical expressions in the existing Saved Search application. Use them to define a string of filter conditions connected by AND or OR operators, to be evaluated as one item within the list of filter conditions.

For example, if you set up the following filter criteria, SuiteAnalytics Workbook evaluates the entire set of grouped conditions (Status is Open AND Sales Rep is A Wolfe-admin) before the Start Date filter, and after the Date filter.

You can also create a group of filters within another group. If you do, SuiteAnalytics Workbook evaluates the conditions in order from inside-to-outside.

For example, in the following group of filters, (Status is Open AND Sales Rep is Ken Bones) is considered before (Status is Open OR Sales Rep is A Wolfe-admin). Moreover, because the entire group is placed before the Start Date filter, the grouped filters are evaluated first.
Workbook Pivot Tables

The Pivot tab is where you define your pivot table layout using your workbook source data. In addition to pivoting your data, the Pivot tab enables you to define multiple fields for each table dimension so that you can see different subsets of data. You can also refine the data that is displayed in your table by applying pivot table filters without having to change your source data or navigate back to the Criteria tab. There are many options you can use to customize the appearance of your table by formatting the numeric values that are presented, renaming your table rows and columns, or adding totals and grand totals to the table. Additionally, you can add the pivot tables to the Analytics portlet on any NetSuite dashboard.

On the Pivot tab, any fields that you added to the Data Grid appear in the Fields list on the left, including custom formula fields and fields from joined records. The Pivot Table Viewer on the right displays your completed table based on the fields you define as rows, columns, and measures in the Layout Panel. Each time you change or update your layout, you must click the Refresh icon to update the table. You must also refresh your table if you make changes to your workbook source data through either the Data or Criteria tabs.

To create a pivot table:

1. Click the Add Pivot link from anywhere within the application.
2. On the Pivot tab, drag the desired fields from the Fields list to the Rows, Columns, or Measures tabs in the Layout panel. Alternatively, drag the fields from the Fields list directly to the Pivot Table Viewer.

   **Note:** If you add hierarchical fields to the table, you are prompted to select a display type for the field values. Depending on where you add the field and the display type you select, you can also add additional subtotals to the pivot table for each level in the hierarchy. For more information, see Hierarchical Fields.

3. Select the summary type and format options for any date or numerical fields you add to the pivot table.
a. Click the Field Menu icon \( \text{Field Menu} \) next to the field you want to format in the Layout panel.

b. Select a summary type from the popup window.

The summary options vary depending on the type of field you select.

c. Optionally, select \textit{Currency...} to view the currency consolidation or conversion options for any fields with values in multiple currencies.

For more information, see \textit{Consolidation and Conversion from the User Interface}.

d. Optionally, click \textit{Format...} to customize the numeric values for a field.

For more information about numeric formatting options, see \textit{Customizing Numeric Values}.

4. Add totals and grand totals to the pivot table.

   a. Click the Totaling icon \( \Sigma \).

   b. In the Totaling window, select where you want the totals or grand totals for each applicable field to appear. If there are multiple fields that can be totalled in the rows or columns, check the \textit{Set Individually} box to select where the totals for each field will appear on the pivot table.

   c. Click \textit{OK}.

5. Click the Refresh icon \( \text{Refresh} \) to generate the pivot table.

\textbf{Important:} If you make any changes to your workbook source data on the Data tab, Criteria tab, or Pivot tab, you must click the Refresh icon in the Pivot tab to update the pivot table.

6. Optionally, filter the data displayed in the pivot table.

\textbf{Note:} Filter conditions created on the Pivot tab only impact the data displayed in the pivot table. No changes are made to the source data for the workbook.

   a. Drag the desired fields from the Fields list or Layout panel to the filter area above the Pivot Table Viewer.

   Alternatively, click the Field Menu icon \( \text{Field Menu} \) next to the field you want to create a filter for, then select \textit{Filter Values...} or \textit{Greater/Less Than...}.

   b. If you select \textit{Filter Values...} or drag a field to the filter area above the Pivot Table Viewer, select the values you want to use for your filter criteria in the Filter window, then click \textit{OK}.

   If you select \textit{Greater/Less Than...}, select the table measure and filter conditions to apply to the field, then click \textit{OK}.

   For more information, see \textit{Pivot Table Filters}.

   c. Click the Refresh icon \( \text{Refresh} \) to update the Pivot Table Viewer.

Only values that match the selected filter criteria are displayed.

**Pivot Table Customization**

SuiteAnalytics Workbook enables you to customize many aspects of your pivot tables. Click the following links for more information:

- Customizing Numeric Values
- Grouping Pivot Table Fields
- Compact and Expanded Mode
Other Customization Options

Customizing Numeric Values

You can customize the numeric values displayed in your pivot table using the Format window. To access the Format window, click the Field Menu icon next to the desired field in the Fields list or Layout panel and select Format... from the list.

The following options are available. To change the default settings, check the Override box. After you make a selection, the Preview field displays your changes. To apply your changes to the table, click OK and refresh the table. To define your own syntax, click the Special tab and enter the syntax in the field provided.

- **Settings Applied From**: Enables you to apply numeric formatting based on a specific language. To define each setting manually, select Custom. To use the numeric formatting set up in your NetSuite personal preferences, select User Preferences. For more information about personal preferences, see the help topic Setting Personal Preferences.
- **Decimal Places**: The number of decimal places to include for each value.
  - Select Per Currency/Unit to use the decimal places of the currency or unit of measure for each value.
  - Select Unbound to place no limits on the number of decimal places used for each value.
- **Negative Values**: The format to use for negative values.
- **Decimal Separator**: The punctuation to indicate the decimal place. Select Custom to define your own punctuation.
- **Thousands Separator**: The punctuation to separate groups of thousands. Select Custom to define your own punctuation.
- **Prefix**: Enables you to define a prefix for the values in the field.
- **Suffix**: Enables you to define a suffix for the values in the field.
- **Currency Symbol**: Enables you to define where the currency symbol appears for dollar values in the field.
■ **Units**: Enables you to abbreviate the values of the field by thousands, millions, or billions.

**Grouping Pivot Table Fields**

Grouping fields in the pivot table Layout panel changes the granularity of the data presented in the table. By defining multiple fields as rows or columns, you can display subsets of data in the table.

For example, in the following Sales Order table, only the Sales Rep field has been defined as a row. The pivot table therefore only displays the total sales orders for each sales representative.

If you also define the Customer field as a row however, the table displays the total sales orders per sales representative and customer.
Try grouping different fields in your pivot table layouts to analyze different subsets of data.

Compact and Expanded Mode

By default, if you group fields or include multicolumn hierarchical fields in your pivot table, the table expands horizontally which can make it difficult to view your data.

To display the table data vertically, click the Compact Mode icon and refresh the table.

Additional Pivot Table Customization Options

To further customize the appearance of your pivot tables, SuiteAnalytics Workbook offers the following options:

- To freeze column or row headers so that they are always visible as you scroll through your table, click the Freeze Column or Freeze Row icons.
- To enable row or column highlighting when you point to a specific part of the table, click the Highlight Column or Highlight Row icons.
- To rename a column or row, click the Field Menu icon and select Rename... from the menu.
Workbook Pivot Tables

- To resize a column or row, drag one of the column or row boundaries until it is the size you want.
- To change the width of a column based on its values, double-click the column header.
- To expand or minimize the number of rows displayed in a column, click the icons in the column header.
- To expand or minimize the number of values displayed for a row, click the icon in the row header.

Pivot Table Filters

After you set up a pivot table you can filter the data that is displayed using value-based or measure-based filters. Value-based filters are applied to every cell in the table and remove cells that do not match the selected filter criteria. Measure-based filters are applied to the row and column totals remove any columns or rows do not match the selected filter criteria. There is no limit on how many value-based filters you can apply to a pivot table, however you can only apply one measure-based filter per table.

Pivot table filters do not affect your workbook source data and only refine the values displayed in the table. To filter your workbook source data, you must create filter conditions from the Criteria tab. Additionally, if you are in a NetSuite account that has values in multiple currencies, you must consolidate or convert these values before you can use them in a measure-based filter condition.

For more information about filtering workbook source data, see Workbook Criteria Filters.

For more information converting or consolidating values, see Currency Conversion.

Value-based Pivot Table Filters

Value-based pivot table filters enable you to filter the data displayed in your table using values from any field that has been added to the Layout panel. Value-based pivot table filters are applied to every cell in the table remove cells that do not match the selected filter criteria.

To apply a value-based filter to your pivot table:

1. Drag the desired field from the Fields list or the Layout panel to the filter area above the Pivot Table Viewer. Alternatively, click the Field Menu icon next to any field in the Layout panel or Pivot Table Viewer and select Filter Values...
   The Filter window appears.
2. In the Filter window, select the field values and operator to use in the filter condition. Currently, only the operators none of and any of are supported.
3. Click OK.
   The selected filter criteria is displayed above the Pivot Table Viewer.
4. Click the Refresh icon to update the Pivot Table.

Measure-based Pivot Table Filters

Measure-based pivot table filters enable you to filter out entire columns or rows using filter conditions that are applied to the totals displayed in the table. For example, assume you have set up the following table and you only want to see customers with over sixty thousand dollars in total transactions:
To do so, you can apply a measure-based filter on the Entity field of **Entity by Total Amount (Transaction Currency) (Sum)** greater 60,000.00.

This filter removes all customers with less than sixty thousand dollars of total transactions from your table.

**Note:** If you are in a NetSuite account that has values in multiple currencies, you must consolidate or convert these values before you can use them in a measure-based filter condition. For more information about currency conversion in SuiteAnalytics Workbook, see [Currency Conversion](#).

To apply a measure-based filter to your pivot table:

1. Click the Field Menu icon next to any column or row field in the Layout panel or Pivot Table Viewer.
2. Select **Greater/Less than...** from the popup window.
3. In the Filter window, select the measure, operator, and value for the filter condition.
4. Click OK.
5. Click the Refresh icon to update the Pivot table.

Workbook Charts

The Chart tab is where you create visualizations of your source data. There are multiple chart types you can create, all of which you can add to the Analytics portlet on any NetSuite dashboard. You can also print or export your charts to an SVG file. Additionally, you can customize the appearance of your chart by adding a title and subtitle, or by renaming each axis. Basic filtering capabilities are also supported, enabling you to display only the most pertinent values in each chart.

As with the Pivot tab, the Chart tab displays any fields that you added to the Data Grid in the Fields list on the left, including custom formula fields and fields from joined records. Completed charts are displayed in the Chart Viewer on the right based on the fields you define as the x-axis, series, and measures in the Layout Panel. Each time you change or update your layout, you must click the Refresh icon to update the chart. You must also refresh the chart if you make changes to your workbook source data through either the Data or Criteria tabs.

You can create multiple charts using the same source data by clicking the Add Chart link.

To chart your source data:

1. Drag the desired fields from the Fields list to the X-Axis, Series/Color Stack, or Measures tabs in the Layout panel.
2. Select the summary type and format options for any date or numerical fields you add to the chart.
   a. Click the Field Menu icon next to the field you want to format in the Layout panel.
   b. Select a summary type from the popup window.
   c. Optionally, click Format... to customize the numeric values for a field.
      For more information about numeric formatting options, see Customizing Numeric Values.
   d. Optionally, select Currency... to view the currency consolidation or conversion options for any fields with values in multiple currencies.
      For more information, see Consolidation and Conversion from the User Interface.
3. In the Layout panel, select the type of chart you want to produce from the popup window.
   For information about each chart type, see the Chart Types topic.
4. Optionally, click the Properties subtab in the Layout panel to add a title and subtitle to the chart, or to rename each axis.
5. Click the Refresh icon to generate your chart.
6. Optionally, filter the data displayed in the chart:

   **Note:** Filters applied on the Chart tab affect only the data displayed in the chart. No changes are made to the source data for the workbook.

   - To filter values, click the corresponding color in the legend below the chart. The value is removed from the chart and the corresponding label in the legend is greyed out.
   - To remove the filter, click the grayed-out value in the legend.
Chart Types

There are multiple chart types you can use to visualize your data. To apply a chart type from either the Chart tab or the Analytics portlet, click the chart type dropdown and select an option from the popup window. Changing the chart type from the Analytics portlet does not affect the chart type selected for the corresponding workbook. Chart types let you compare values, show trends, or visualize parts to whole relationships. When you select a chart type, keep in mind the data included in the chart and the type of information you want to display. The following chart type options are available:

- **Column Chart** – Enables you to compare values for different categories or compare value changes over a period of time for a single category. For example, sales by period of time (weekly, monthly, quarterly, or yearly). You can also use column charts to display negative values and to show an overview of the highest and lowest categories.

- **Bar Chart** – Enables you to compare values offering the same capabilities of the column chart. You can use this chart type when the data labels are long as it improves readability. For example, when using regions or sales representatives as dimensions.

- **Area Chart** – Enables you to display trends and accumulative value changes over time, such as item stock, number of employees, or savings account.

- **Line Chart** – Enables you to display trends for a higher number of data points. For example, when showing more than 20 data points.

- **Stacked Column Chart** – Enables you to show the composition of the data, by displaying the proportion of each category to a whole. For example, you can use it to see the percentage of the base price and discount price by customer.

- **Stacked Bar Chart** – Enables you to display data in a bar chart emphasizing the composition, instead of comparison.

- **Stacked Area Chart** – Enables you to display data in an area chart showing how each category contributes to the total over a period of time.

To see some examples, see the following charts:

- [Open Sales Orders Lines Charts](#)
- [Number of Fulfillments Chart](#)
- [Value of Shipping Charges Charts](#)

Chart-based Portlets

You can see your workbook-based chart data on your home dashboard by adding the Analytics portlet. The portlet enables you to quickly see the workbook data on your dashboard and provides quick access to your workbook. Visualizing the data right on your dashboard enables you to spend more time learning from it and less time gathering it.

You can also choose how you want to visualize your chart-based workbook by setting layout options such as the portlet size and chart type. To identify the Analytics portlet on your dashboard, you can also enter a title. By default, the title displays the name of the workbook and the chart.

For more information on how to add and set up the Analytics portlet, see the help topic [Workbooks Overview](#).
Pivot-based Portlets

You can see your pivot-based workbook data on your home dashboard by adding the Analytics portlet. The portlet enables you to quickly see the workbook data on your dashboard and provides quick access to your workbook. Visualizing the data right on your dashboard enables you to spend more time learning from it and less time gathering it.

You can also choose how you want to visualize your pivot-based workbook by entering the number of visible rows you want to view at once. To identify the Analytics portlet on your dashboard, you can also enter a title. By default, the title displays the name of the workbook and the pivot table.

For more information about how to add and set up the Analytics portlet, see the help topic Workbooks Overview.
Standard Workbooks

SuiteAnalytics Workbook currently offers the following standard, out-of-the-box workbooks, each with predefined source data, criteria, pivot tables, and charts:

- Sales (Ordered) Workbook (Beta)
- Sales (Invoiced) Workbook (Beta)
- Open Sales Order Lines (DEMO)
- Number of Fulfillments (DEMO)
- Journal Entry to Approve (DEMO)

The Sales (Ordered) and Sales (Invoiced) workbooks are based on custom analytical record types designed specifically for SuiteAnalytics Workbook. These record types combine data from the Transaction, Transaction Line, and Transaction Accounting Line record types and are currently in a beta state. Consequently, the content of these workbooks is subject to change and is for test purposes only. Additionally, you cannot add charts from the Sales (Ordered) and Sales (Invoiced) workbooks to the Analytics portlet.

The Open Sales Orders Lines, Number of Fulfillments, and Journal Entry to Approve workbooks are based on some of the most commonly used Transaction saved searches and are for demonstration purposes only. Do not use these workbooks in your production accounts unless they are first reviewed by a NetSuite administrator.

By default, only users with the Analytics Administrator permission can access standard workbooks. If you do not have the Analytics Administrator permission, you can access the Sales (Ordered) and Sales (Invoiced) workbooks if another user with the Analytics Administrator permission shares them with you from the Workbook Listing Page. The Open Sales Orders Lines, Number of Fulfillments, and Journal Entry to Approve workbooks cannot be shared from the Workbook Listing Page, but users with the Analytics Administrator permission can save and share them from within each workbook.

If you have the Analytics Administrator permission, you can access the workbooks using the links in the Standard Workbooks list on the Workbook Listing Page.

For more information about the Analytics Administrator permission, see Analytics Administrator Permission.

Sales (Ordered) Workbook

The Sales (Ordered) workbook includes predefined criteria, pivot tables, and charts designed to show you all the sales orders and return authorizations in your account. These transaction types are grouped and pivoted by item, customer, and sales rep within the workbook pivot tables and charts. The root record for the workbook is the Sales (Ordered) record which combines data from the Transaction, Transaction Line,
and Transaction Accounting line record types. Only sales orders and return authorizations that meet the following conditions are included in the workbook source data:

- Total Amount (Transaction Currency) does not equal 0 (zero), except for work orders
- Field ID does not equal 0 (zero)
- Primary accounting book is not empty or transaction lines include a kit/package item. For more information, see the help topic Kit/Package Items
- Primary accounting book type is Income, Other Income, Defer Revenue, or Unbilled Rec

**Note:** If the Multi-Book Accounting feature is enabled in your account, only data for the primary accounting book is included in the workbook.

The following fields are included in the Sales (Ordered) workbook:

<table>
<thead>
<tr>
<th>Field</th>
<th>Source Record</th>
<th>Source Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique Key</td>
<td>Transaction Line</td>
<td>Unique Key</td>
</tr>
<tr>
<td>Date</td>
<td>Transaction</td>
<td>Date</td>
</tr>
<tr>
<td>Amount</td>
<td>Transaction Line</td>
<td>Net Amount</td>
</tr>
<tr>
<td>Quantity</td>
<td>Transaction Line</td>
<td>Quantity</td>
</tr>
<tr>
<td>Account</td>
<td>Transaction Accounting Line</td>
<td>Account</td>
</tr>
<tr>
<td>Transaction Line</td>
<td>Transaction Line</td>
<td>ID</td>
</tr>
<tr>
<td>Transaction</td>
<td>Transaction</td>
<td>Transaction</td>
</tr>
<tr>
<td>Item</td>
<td>Transaction Line</td>
<td>Item</td>
</tr>
<tr>
<td>Customer</td>
<td>Transaction Line</td>
<td>Entity</td>
</tr>
<tr>
<td>Subsidiary</td>
<td>Transaction Line</td>
<td>Subsidiary</td>
</tr>
<tr>
<td>Memo</td>
<td>Transaction</td>
<td>Memo</td>
</tr>
<tr>
<td>Partner</td>
<td>Transaction</td>
<td>Partner</td>
</tr>
<tr>
<td>Classification</td>
<td>Transaction Line</td>
<td>Classification</td>
</tr>
<tr>
<td>Department</td>
<td>Transaction Line</td>
<td>Department</td>
</tr>
<tr>
<td>Location</td>
<td>Transaction Line</td>
<td>Location</td>
</tr>
<tr>
<td>Sales Rep</td>
<td>Transaction</td>
<td>Sales Rep</td>
</tr>
</tbody>
</table>

**Sales (Invoiced) Workbook**

The Sales (Invoiced) workbook includes predefined criteria, pivot tables, and charts designed to show you all the sales transactions in your account. These transactions are grouped and pivoted by item, customer, and sales rep within the workbook pivot tables and charts. The root record for the workbook is the Sales (Invoiced) record which combines data from the Transaction, Transaction Line, and Transaction Accounting line record types. Only transactions that meet the following conditions are included in the workbook source data:

- Transaction lines post to the general ledger
Primary accounting book type is Income, Other Income, Defer Revenue, or Unbilled Rec

If the Bill Costs To Customers and Include Reimbursements in Sales and Forecast Reports features are enabled in your account, then transactions with a primary accounting book type of Expense and Other Expense are also included in the workbook.

**Note:** If the Multi-Book Accounting feature is enabled in your account, only data for the primary accounting book is included in the workbook.

Transaction type is none of the following:

- Any transaction type specified by the Transaction Types To Exclude From Sales Reports accounting preference
- Opportunity
- Estimate
- Sales Order
- Return Authorization
- Build
- Unbuild
- Vendor Payment
- Bin Transfer
- Bin Worksheet
- Commission
- Foreign Currency Revaluation
- Customer Deposit
- Customer Refund
- Deposit Application
- Inventory Transfer
- Item Shipment
- Item Receipt
- Customer Payment
- Year To Date Adjustment
- Purchase Order
- Tax Payment
- Tax Liability
- Transfer
- Transfer Order
- Vendor Authorization
- Work Order

The following fields are included in the Sales (Ordered) workbook:

<table>
<thead>
<tr>
<th>Field</th>
<th>Source Record</th>
<th>Source Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique Key</td>
<td>Transaction Line</td>
<td>Unique Key</td>
</tr>
<tr>
<td>Date</td>
<td>Transaction</td>
<td>Date</td>
</tr>
</tbody>
</table>
Open Sales Orders Lines (DEMO) Workbook

**Note:** The content displayed in this workbook is for demonstration purposes only and should not be used in production accounts unless it is first reviewed by a NetSuite administrator.

The Open Sales Orders Lines (DEMO) workbook includes predefined criteria, pivot tables, and charts designed to show you the items allocated to open sales orders in your account, so that you can better monitor your inventory. These transactions are grouped by item, date, and a custom formula field used to display item quantities as positive values within the workbook pivot tables and charts.

For details about the content of the workbook or for steps on how to recreate the workbook manually, see Open Sales Orders Lines.

Number of Fulfillments (DEMO) Workbook

**Note:** The content displayed in this workbook is for demonstration purposes only and should not be used in production accounts unless it is first reviewed by a NetSuite administrator.

The Number of Fulfillments (DEMO) workbook includes predefined criteria, pivot tables, and charts designed to show the number of items which have been fulfilled. These transactions are grouped by customer, date, and transaction within the workbook pivot tables and charts.

For details about the content of the workbook or for steps on how to recreate the workbook manually, see Number of Fulfillments.
Journal Entry to Approve (DEMO) Workbook

**Important:** This workbook is only useful if you have enabled the **Require Approvals on Journal Entries** permission in your NetSuite account. For more information, see the help topic **General Accounting Preferences.**

**Note:** The content displayed in this workbook is for demonstration purposes only and should not be used in production accounts unless it is first reviewed by a NetSuite administrator.

The Number of Fulfillments (DEMO) workbook includes predefined criteria to show the list of journal entries requiring approval in your account.

For details about the content of the workbook or for steps on how to recreate the workbook manually, see **Number of Fulfillments.**
Workbook-based Portlets

With the Analytics portlet, SuiteAnalytics Workbook enables you to view your workbook data on your dashboards. The Analytics portlet lets you add charts and pivot tables from workbooks listed in the My Workbooks and Shared with Me sections of the Workbook Listing Page. You can add up to 10 Analytics portlets to your dashboards, each with a unique chart and pivot table.

For more information, see the help topic Workbooks Overview.

Displaying Chart and Pivot Data in the Analytics Portlets

To display your chart and pivot data on your home dashboard, you can add and set up the Analytics portlet. The portlet enables you to quickly see the workbook data and provides quick access to your workbook. Visualizing the data right on your dashboard enables you to spend more time learning from it and less time gathering it.

You can also choose how you want to visualize the workbook data on your portlet. To identify the Analytics portlet on your dashboard, you can enter a title. By default the title displays the name of the workbook and the chart. Additionally, you can set layout options, such as the following:

- For chart-based portlets, you can set the portlet size and chart type.
- For pivot-based portlets, you can enter the number of rows you want to view at once when loading the pivot table.

For more information on how to add and set up an Analytics portlet, see the help topics Adding an Analytics Portlet and Setting Up the Analytics Portlet.
Use this tutorial to walk through the authoring process for SuiteAnalytics Workbook.

In this tutorial, you create a sample Transaction workbook that includes a pivot table and chart. The pivot table and chart display the total billed sales orders for each sales representative in your company, for the date range you choose.

The following table describes the steps to create this workbook. Each step builds on the previous step, so you must complete them in order:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Select a Root Record</td>
<td>Begin your workbook by choosing a root record type.</td>
</tr>
<tr>
<td>Step 2: Select Your Source Data</td>
<td>Choose the fields you want to include in your workbook.</td>
</tr>
<tr>
<td>Step 3: Filter Your Source Data</td>
<td>Apply filter conditions to refine the data included in your workbook.</td>
</tr>
<tr>
<td>Step 4: Pivot Your Source Data</td>
<td>Set up your table layout to create a pivot table using your source data.</td>
</tr>
<tr>
<td>Step 5: Chart Your Source Data</td>
<td>Set up your chart layout to create a chart using your source data.</td>
</tr>
</tbody>
</table>

**Note:** This tutorial assumes that you have the appropriate permissions and features enabled in your account view transaction and sales order data. If you are not sure about which permissions need to be enabled to view transaction records or fields, download the following worksheet: NetSuitePermissionsUsage.xls. If you do not have a specific permission enabled, contact your NetSuite administrator.

**Step 1: Select a Root Record**

The following steps show you how to select a root record for your workbook. The available records are based on the features enabled in your account and the permissions assigned to the role you use to log in to NetSuite. If you do not see the Transaction record, contact your administrator.

**To select a root record type:**

1. Click the Analytics tab in the NetSuite navigation menu.
2. On the Workbook Listing Page, click New Workbook.
3. Select a record from the list.

The Data tab opens with preselected fields on the Data Grid based on the record you choose.

For the purposes of this tutorial, select the Transaction record.

Continue to **Step 2: Select Your Source Data**.

**Step 2: Select Your Source Data**

If you have not already done so, complete **Step 1: Select a Root Record**.

The following steps show you how to select the source data for your workbook by creating a query. Only fields that are added to the Data Grid can be used to generate a pivot table or chart.
By default, the Data Grid displays preselected fields based on the root record selected for the workbook.

**To select your source data:**

1. **Add fields from the root record to the Data Grid.** You have three options:
   - Drag the fields from the Fields list to the Data Grid.
   - Double-click the fields in the Fields list.
   - Type the name of the fields in the search bar at the top of the Fields list, then drag or double-click them to add them to the Data Grid.

   For the purposes of this tutorial, add the Sales Rep, Amount (Transaction Total), and Status fields to the Data Grid.

   ![Image of Data Grid](image)

   **Note:** If you add a hierarchical field to the Data Grid, you are prompted to select whether to display the child values or the full hierarchy for each record in the corresponding field column. For more information, see [Hierarchical Fields](#).

2. **Add fields from a related record to the Data Grid.**
   - Click the Join Record icon in the Fields list and select a record from the popup window. Only records related to the root record are listed.
Step 2: Select Your Source Data

Note: Certain record types in SuiteAnalytics Workbook have multiple variants. For example, there are multiple Entity record types such as Entity (Customer), Entity (Vendor), and Entity (Employee). Make sure you join the correct record type depending on the type of data you want to include in your workbook.

b. The Fields list is updated to include the related record fields. Double-click or drag the desired fields to the Data Grid.

Note: By default, the Fields list only displays fields for one record at a time. To hide or display a record’s fields, click the record header in the Fields list.

For the purposes of this tutorial, no related record fields are required.

3. Create and add formula fields to the Data Grid.
   a. Click the Formula Fields subtab in the Fields List.
b. Click **New Formula**.

The Formula Field window appears.

c. Enter the formula field name.

d. Select an output type for the formula field values.
Step 2: Select Your Source Data

**Note:** Each output type only works with certain fields and formula functions. If you select an incompatible output type for the formula, the formula is invalidated.

e. In the Formula field, enter the field IDs and SQL formula functions to use in the formula expression. Alternatively, double-click the desired field IDs or formula functions from the Functions and Fields subtabs to add them to the expression.

**Note:** The Fields subtab only includes fields from the root record on the workbook and any previously joined related records. If you want to include fields from a related record in your formula expression, you must first join the related record to the workbook on the Data tab.

f. To validate the formula, click **Validate**.

g. If there are no errors, click **Apply** to add the formula field to the workbook.

For the purposes of this tutorial, no formula fields are required.

4. Remove any fields you do not want to include in the workbook.

a. Click the Field Menu icon in the column you want to remove from the Data Grid.

b. Select **Remove Column** from the dropdown list.

For the purposes of this tutorial, remove the Document Number/ID, Type, Memo, and Transaction fields.

**Warning:** If you have previously created a pivot table or chart using the source data presented in the Data Grid, removing a field from the grid also removes it from those tables and charts and can cause workbook failures. Consequently, you should exercise caution when removing a field from the grid.

Continue to **Step 3: Filter Your Source Data**.

Step 3: Filter Your Source Data

If you have not already done so, complete **Step 2: Select Your Source Data**.
Step 3: Filter Your Source Data

The following steps show you how to filter the source data for your workbook. Filters applied to the Data Grid from the Criteria tab determine the values that are available for the workbook. For example, if you create a filter to exclude any sales orders created in the last week, data from these sales orders is not presented on the Pivot or Chart tabs.

To filter your source data:

1. Click the **Criteria** tab.

2. On the Criteria tab, double-click or drag the desired record field or formula field from the Fields list to the Criteria Builder.

   The Filter window appears.

---

**Image 1:**
![Image of the Criteria tab in SuiteAnalytics Workbook](https://example.com/image1.png)

**Image 2:**
![Image of the Filter window](https://example.com/image2.png)
3. In the Filter window, select the filter conditions you want to apply to the field. Up to four options are available for filtering the data, depending on the type of field that is selected. For hierarchical fields, you can set any of the following filters at the child or hierarchy level:

- **Values**: Existing values or dates from the source data, or custom values
- **Ranges/Date Ranges**: Range of values or dates available in the source data
- **Relative Conditions/Relative Dates**: Conditions relative to the existing values in the source data
- **Conditions/Specific Dates**: Specific value or date and an expression

For the purposes of this tutorial, set the following filter conditions:

- **Date within X and Y**
- **Sales Rep any of [all sales reps]**
- **Status is Sales Order: Billed**

4. Repeat steps 1–3 for each filter you want to define.

By default, filters are added using an AND operator. To change the relationship between filters and filter groups, click the AND link and select OR from the popup window.

5. Click the Data tab when you are finished defining your filters.

The Data Grid displays only values that match your selected filter conditions, and a Criteria Summary is shown above the grid.
Step 3: Filter Your Source Data

Continue to Step 4: Pivot Your Source Data.

Step 4: Pivot Your Source Data

If you have not already done so, complete Step 3: Filter Your Source Data.

The following steps show you how to pivot your source data to create a pivot table.

To pivot your source data:

1. Click the Add Pivot link.

2. On the Pivot tab, drag the desired fields from the Fields list to the Rows, Columns, or Values tabs in the Layout panel. Alternatively, drag the fields from the Fields list directly to the Pivot Table Viewer.
For the purposes of this tutorial, add the Sales Rep field to the pivot table Rows, add two instances of the Date field to the pivot table Columns, and add the Amount (Transaction Total) field to the pivot table Values.

**Note:** If you add hierarchical fields to the table, you are prompted to select a display type for the field values. Depending on where you add the field and the display type you select, you can also add additional subtotals to the pivot table for each level in the hierarchy. For more information, see Hierarchical Fields.

3. Select the summary type and format options for any date or numerical fields you add to the pivot table.
   a. Click the Field Menu icon next to the field you want to format in the Layout panel.
   b. Select a summary type from the popup window.
   c. Optionally, select Currency... to view the currency consolidation or conversion options for any fields with values in multiple currencies.
Step 4: Pivot Your Source Data

For more information, see Consolidation and Conversion from the User Interface.

d. Optionally, click Format... to customize the numeric values for a field.

For more information about numeric formatting options, see Customizing Numeric Values.

For the purposes of this tutorial, select the following summary types. No numeric formatting is required:

- Date (Year)
- Date (Quarter)
- Amount (Transaction Total) (Sum)

4. Add totals and grand totals to the pivot table.
   
a. Click the Totaling icon \( \sum \).

b. In the Totaling window, select where you want the totals or grand totals for each applicable field to appear. If there are multiple fields that can be totalled in the rows or columns, check the Set Individually box to select where the totals for each field will appear on the pivot table.

   c. Click OK.

For the purposes of this tutorial, set the Row totals to appear on the bottom and the Column totals to appear on the right.

5. Click the Refresh icon \( \refresh \) to generate the pivot table.
Step 4: Pivot Your Source Data

Important: If any changes are made on the Data tab, Criteria tab, or Pivot tab, you must click the Refresh icon in the Pivot tab to update the pivot table.

6. Optionally, filter the data displayed in the pivot table.

   Note: Filter conditions created on the Pivot tab only impact the data displayed in the pivot table. No changes are made to the workbook source data.

   a. Drag the desired fields from the Fields list to the filter area above the Pivot Table Viewer.

   b. In the Filter window, select the values you want to use for your filter criteria then click OK.
c. Click the Refresh icon to update the Pivot Table Viewer. Only values matching the selected filter criteria are displayed. For the purposes of this tutorial, no pivot table filters are required.

Continue to Step 5: Chart Your Source Data.

Step 5: Chart Your Source Data

If you have not already done so, complete Step 4: Pivot Your Source Data.

The following steps show you how to create a chart using your source data.

To chart your source data:

1. Click the Add Chart link.
2. On the Chart tab, drag the desired fields from the Fields list to the X-Axis, Series, or Measures tabs in the Layout panel.

For the purposes of this tutorial, add the Sales Rep field to the X-Axis, add two instances of the Date field to the Series, and add the Amount (Transaction Total) field to the Measures.

**Note:** If you add any hierarchical fields to the chart, you are prompted to select a display type for the field values. Currently, only the **Show Child Level Only** and **Single-Column Hierarchy** options are supported in charts. For more information, see **Hierarchical Fields**.

3. Select the summary type and format options for any date or numerical fields you add to the chart.
   a. Click the Field Menu icon next to the field you want to format in the Layout panel.
   b. Select a summary type from the popup window.
   c. Optionally, select **Currency...** to view the currency consolidation or conversion options for any fields with values in multiple currencies.

For more information, see **Consolidation and Conversion from the User Interface**.
d. Optionally, click **Format...** to customize the numeric values for a field.

For more information about numeric formatting options, see **Customizing Numeric Values**.

For the purposes of this tutorial, select the following summary types. No numeric formatting is required:
- Date (Year)
- Date (Quarter)

4. In the Layout panel, select the type of chart you want to produce from the popup window.

For information about each chart type, see the **Chart Types** topic.

For the purposes of this tutorial, select the **Basic Column Chart**.

5. Optionally, click the Options subtab in the Layout panel to add a title and subtitle to the chart, or to rename each axis.

6. Click the Refresh icon to generate the chart.
7. Click the Workbook Menu icon and select **Save As**.

8. In the Save Workbook As window, enter a name and description for the workbook and click **Apply**. All selections made on the Data, Criteria, Pivot, and Chart tabs are saved.

9. Optionally, if you want to share the workbook with other users in your account, click the Workbook Menu icon and select **Share Workbook**.
Workbooks can be shared with individual users or groups of users on a role by role basis. For details, see [Accessing and Sharing Workbooks](#).
Navigating SuiteAnalytics Workbook

The SuiteAnalytics Workbook user interface is divided into five main sections. Click the following links to learn more about how to navigate the interface:

- Workbook Listing Page
- Data Tab
- Criteria Tab
- Pivot Tab
- Chart Tab

Workbook Listing Page

The Workbook Listing Page appears when you click the Analytics tab in the NetSuite navigation menu. The page displays all of your saved workbooks and any workbooks that have been shared with you by other users. If you have the Analytics Administrator permission, you can also access the Sales (Ordered) and Sales (Invoiced) workbooks, and view, edit, or delete workbooks created by other users in your NetSuite account. For more information about the Analytics Administrator permission, see Analytics Administrator Permission.

The elements of the Workbook Listing Page are identified in the image below:

1. **Search** — Search for saved workbooks using a field name, user name, filter condition, or any other workbook element. Searches are only executed across open workbook lists. For example to search your workbooks, make sure the My Workbooks list is open.

2. **New Workbook** — Click New Workbook to begin the workbook authoring process. You are prompted to select a record type for the workbook. For more information about the SuiteAnalytics Workbook authoring process, see Custom Workbooks.

3. **Give Feedback** — Click the Give Feedback link to provide feedback to the SuiteAnalytics Workbook development team.

4. **Documentation** — Click the Documentation link to view Help Center topics for SuiteAnalytics Workbook. This includes topics for the N/query Module, which enables you to create query scripts using the SuiteAnalytics engine. For more information, see the help topic N/query Module.

5. **Workbook lists** — All workbooks you have access to are listed in the following lists:
- Recently Opened — Your recently opened workbooks.
- My Workbooks — Workbooks that you have created.
- Shared with Me — Workbooks that have been shared with you by other users in your NetSuite account.
- Employee Workbooks — Workbooks that have been created by other users in your NetSuite account. This list is only displayed if you have the Analytics Administrator permission.
- Standard Workbooks — Workbooks with predefined source data, criteria, pivot tables, and charts. These workbooks use analytical record types created specifically for SuiteAnalytics Workbook. By default, only users with the Analytics Administrator permission can access these workbooks, however they can share them with other users in your account. For more information about Standard Workbooks, see Standard Workbooks.

For each workbook, the date, owner, and other information is displayed. If you have the Analytics Administrator permission, you can edit these values from the workbook lists.

- To view a summary of the source data and filter conditions in each workbook, click the Details link.
- To delete a workbook, click the Delete Workbook icon.
- To share a workbook with other users in your NetSuite account, click the Share Workbook icon.

**Note:** Unless you have the Analytics Administrator permission, you can only delete and share your own workbooks.

### Data Tab

The Data tab appears after you select a root record for your workbook. On this tab you can select the fields to include in the source data of your workbook by creating a query.

Source data is displayed in a tabular format in the Data Grid on the right. Records, fields, custom formula fields, and configuration options for your source data appear in the Fields list on the left. To build your source data, drag fields from the Fields list to the Data Grid. On the grid itself, you can sort and filter the values that are presented.

For information about how to use the Data tab to define your workbook source data, see Defining Workbook Source Data.

The elements of the Data tab are identified in the image below:
1 **Workbook Menu** — The Workbook Menu is available on every tab in the SuiteAnalytics Workbook interface. It lets you save or share your work, including any selections on the Data Grid, Criteria tab, Pivot tab, or Chart tab. For more information about sharing, see Accessing and Sharing Workbooks.

2 **Undo/Redo** — Click these icons to reverse your last action or reverse your last undo. If your last action was the creation of a filter condition, click Undo once to return to the Criteria tab and a second time to remove the filter. Up to 20 actions can be undone, however sharing and saving a workbook is irreversible.

3 **Navigation menu** — The Navigation menu lets you switch between the Data tab and Criteria tab, or create a pivot table or chart by clicking the **Add Pivot** or **Add Chart** links.

4 **Data Grid menu** — This menu contains display and export options for the Data Grid. The following options are available:
   - **Filter** — Hide or display the header filters created specifically for the Data Grid, or the filter criteria applied to the source data. If enabled, Filter and Criteria summaries are displayed above the grid.
     - **Filters**: A summary of the header filters set up on the Data tab, which only impact the values that are displayed in the grid.
     - **Criteria**: A summary of the filter conditions set up on the Criteria tab, which impact the source data available for the workbook.
   - **Advanced Sorting** — Sort the values displayed in the grid using multiple fields. For more information, see Advanced Query Sorting.
   - **Export** — Export the data presented in the Data Grid to a CSV file.

   **Note:** To use the export feature, you must have the Export Lists permission.

5 **Fields list** — The Fields list displays fields from the workbook root record, any joined related records, and, in the Formula Fields subtab, any custom formula fields created for the workbook. You can add fields to the source data by double-clicking them on the Fields list, or dragging them to the grid.
   - To change the display options for the Fields list, click the settings icon.
   - To display icons for each field type listed in the Fields list, select the **Data Types**, **Custom fields**, or **Polymorphic** options.
     - **Data Types**: Standard fields in NetSuite containing text, numeric, or date values, which may also be part of a defined parent-child relationship. These fields are denoted by the icons in the Fields list.
     - **Custom fields**: Fields that are specific to your business and have been created by a user in your NetSuite account. These fields are denoted by the icon in the Fields list. For more information about custom fields, see the help topic Custom Fields.
     - **Polymorphic**: Fields that contain values that exist on multiple record types. For example, the Customer field on the Sales Order record, which contains the same data as the Name/ID field in the Customer record. These fields are denoted by the icon in the Fields list.
     - **Hierarchical**: Fields that have a defined parent-child relationship in NetSuite. These fields have multiple display options and can be used to create filter conditions based on the parent or child values in each record. For more information, see Hierarchical Fields. These fields are denoted by the icon in the Fields list.
   - To collapse the Fields list and expand the Data Grid, click the double arrows.
To join a record to the workbook and add fields from the record to your source data, click the Join Record icon. Record types joined on the Data tab are automatically added to the Fields list in the Criteria tab.

After joining a record to the workbook, the Fields list only displays fields for one record at a time. To collapse or expand the available fields for each record, click the record header.

- Multi-level joins are supported in SuiteAnalytics Workbook. To join a record related to a joined record, click the Join Record icon in the related record header.

**Important:** If joining records is a new concept for you, there are a number of considerations you should make before attempting certain joins. For more information, see Guidelines for Joining Record Types in SuiteAnalytics Workbook.

- Use the search field to look for a specific field by name.
  - If you have joined a record to the workbook, the search is across all records in the workbook.
- To create and view custom formula fields for use with the workbook, click the Formula Fields subtab. For more information about formula fields, see Formula Fields.

**Time of last refresh** — Displays the time and date the Data Grid was last updated.

To manually update the values displayed in the grid, click the Refresh icon.

**Data Grid** — All workbook source data is displayed in the Data Grid. By default, the grid displays preselected fields based on the root record selected for the workbook. You can add fields to the grid by double-clicking them on the Fields list, or dragging them to the grid. The number of rows displayed on each page of the grid is based on the Number of Rows in List Segments setting in your NetSuite user preferences. Regardless of this setting, the data grid can display a maximum of 500 rows per page. On the grid itself, you can perform the following actions:

- To sort the values displayed in the grid, click the Field Menu icon in the column header and select Sort Ascending, Sort Descending, or Add Sort... to apply advanced sorting to the grid.
  - For more information, see Advanced Query Sorting
- To filter the values that are displayed in the grid, click the Field Menu icon next to the field you want to apply the filter to and select Filter... from the dropdown list. The filter window appears with up to four types of filters you can set depending on the values of the field. For more information about the Filter window, see Filter Types.

**Note:** Filter conditions and sorting options set up on the Data Grid only impact the values that are displayed in the grid itself and do not affect the source data available for the workbook. To filter the source data, you must set up filters on the Criteria tab. For more information, see Workbook Criteria Filters.

- If you are in a NetSuite account with multiple currencies and your workbook contains fields with values in multiple currencies, click the Field Menu icon next to an applicable column and select Currency... to apply currency consolidation or conversion. For more information, see Currency Conversion.
- If there is a hierarchical column in the grid, click the Field Menu icon next to it and select Show Hierarchy to display the values of the field as a full hierarchy. For more information, see Hierarchical Fields.
- To move a column, drag the column header to the desired location. Alternatively, click the Field Menu icon next to the column you want to move and select a move option from the list.
- To remove a column from the grid, click the Field Menu icon next to the column you want to delete and select Remove Column from the list.
- To rename a column, click the Field Menu icon next to the desired column and select Rename... from the list.
- To change the width of a column, drag the right boundary of the column header until it is as wide as you want.
- To view the records associated to any links displayed in the grid, click the link. The corresponding NetSuite record opens in a new browser tab.
- To view different pages, click the arrows at the bottom of the grid.
To view a summary of the values for any column in the grid, click the column header. The summary is displayed at the bottom of the grid.

Criteria Tab

The Criteria tab is where you set up filter conditions to refine the source data for your workbook. As with the Data tab, records and fields in the Criteria tab appear in the Fields list on the left. Any filters you create appear in the Criteria Builder on the right, in the order that they are applied to the source data.

For information about how to use the Criteria tab to refine and filter your workbook source data, see Workbook Criteria Filters.

The elements of the Criteria tab are identified in the image below:

1. Workbook Menu — The Workbook Menu is available on every tab in the SuiteAnalytics Workbook interface. It lets you save or share your work, including any selections on the Data Grid, Criteria tab, Pivot tab, or Chart tab. For more information about sharing, see Accessing and Sharing Workbooks.

2. Undo/Redo — Click these icons to reverse your last action or reverse your last undo. Up to 20 actions can be undone, however sharing and saving a workbook is irreversible.

3. Navigation menu — The Navigation menu lets you switch between the Data tab and Criteria tab, or create a pivot table or chart by clicking the Add Pivot or Add Chart links.

4. Criteria Builder menu — This menu contains options for the filters displayed in the Criteria Builder. The following options are available:
   - Criteria Summary icon — Hide or display a summary of the filters currently listed in the Criteria Builder.
   - Line Wrap icon — Enable line wrapping for filter conditions that are too long to display in the Criteria Builder.
   - Delete icon — Remove all filter conditions displayed in the Criteria Builder.
Fields list — The Fields list displays fields from the workbook root record, any joined related records, and, in the Formula Fields subtab, any custom formula fields created for the workbook. You can create filters for each field by double-clicking them on the Fields list, or dragging them to the Criteria Builder.

- To change the display options for the Fields list, click the settings icon.
- To display icons for each field type listed in the Fields list, select the Data Types, Custom fields, or Polymorphic options.
  - Data Types: Standard fields in NetSuite containing text, numeric, or date values, which may also be part of a defined parent-child relationship. These fields are denoted by the icons in the Fields list.
  - Custom fields: Fields that are specific to your business and have been created by a user in your NetSuite account. These fields are denoted by the icon in the Fields list. For more information about custom fields, see the help topic Custom Fields.
  - Polymorphic: Fields that contain values that exist on multiple record types. For example, the Customer field on the Sales Order record, which contains the same data as the Name/ID field in the Customer record. These fields are denoted by the icon in the Fields list.
  - Hierarchical: Fields that have a defined parent-child relationship in NetSuite. These fields have multiple display options and can be used to create filter conditions based on the parent or child values in each record. For more information, see Hierarchical Fields. These fields are denoted by the icon in the Fields list.
- To collapse the Fields list and expand the Criteria Builder, click the double arrows.
- To join a record to the workbook and create filters for the joined record fields, click the Join Record icon.

Important: Record types joined on the Data tab are automatically added to the Fields list on the Criteria tab. Likewise, if you join records or remove joined records on the Criteria tab, those changes are reflected on the Data tab.

After joining a record to the workbook, the Fields list will only display fields for one record at a time. To collapse or expand the available fields for each record, click the record header.

- Multi-level joins are supported in SuiteAnalytics Workbook. To join a record related to a joined record, click the Join Record icon in the related record header.

Important: If joining records is a new concept for you, there are a number of considerations you should make before attempting certain joins. For more information, see Guidelines for Joining Record Types in SuiteAnalytics Workbook.

- Use the search field to look for a specific field by name.
  - If you have joined a record to the workbook, the search is across all records.
- To create a filter condition based on a formula field, click the Formula Fields subtab. For more information about formula fields, see Formula Fields.

Criteria summary — A summary of the filters currently listed in the Criteria Builder, including the operators that connect them. Hide or display this summary by clicking the icon.

The order of the filters determines the order in which they are applied to the source data. For example, the summary “Cleared is true AND Status any of Open, Paid In Full” means the values of the Cleared field are evaluated first, followed by the values of the Status field.

Criteria Builder — The Criteria Builder displays the filters you have created for the workbook in the order that they are applied to the source data, as well as the operators that connect them. For example, the filters “Cleared is true AND Status any of Open, Paid In Full” means the values of the Cleared field are evaluated first, followed by the values of the Status field.

You can add filters to the Criteria Builder by double-clicking a field on the Fields list, then setting the filter conditions in the Filter window. For more information, see Workbook Criteria Filters. On the Criteria Builder itself, you can perform the following actions:
Criteria Tab

- To edit a filter, point to the filter and click the Edit icon.
- To delete a filter, point to the filter and click the Delete icon.
- To change the order of the filters, point to the filter you want to move and click the arrows.
- To create a group of filters, click New Group. For more information about grouping filters, see Grouping Filters.
- To change the operator between individual or grouped filters, click the AND or OR links and select a different operator from the popup window.

Pivot Tab

The Pivot tab is where you define your pivot table layout. Any fields that you added to the Data Grid appear in the Fields list on the left. To build your pivot table, drag fields from the Fields list to the Layout panel, then click the Refresh icon. The generated pivot table is displayed in the Pivot Table Viewer on the right.

You can create multiple pivot tables using the same source data by clicking the Add Pivot link.

For information about how to use the Pivot tab to pivot your workbook source data, see Workbook Pivot Tables.

The elements of the Pivot tab are identified in the image below:

1 Workbook Menu — The Workbook Menu is available on every tab in the SuiteAnalytics Workbook interface. It lets you save or share your work, including any selections on the Data Grid, Criteria tab, Pivot tab, or Chart tab. For more information about sharing, see Accessing and Sharing Workbooks.

2 Undo/Redo — Click these icons to reverse your last action or reverse your last undo. If your last action was the creation of a filter condition, click Undo once to return to the Criteria tab and a second time to remove the filter. Up to 20 actions can be undone, however sharing and saving a workbook is irreversible.

3 Navigation menu — The Navigation menu lets you switch between the Data tab and Criteria tab, or create a pivot table or chart by clicking the Add Pivot or Add Chart links.
4 **Pivot Table menu** — This menu contains additional formatting options for the pivot table. The following options are available:

- **Totaling icon** — Add totals and grand totals to your pivot table for any applicable fields. Totals for columns can be added to the right or left of the table. Totals for rows can be added to the top or bottom.
- **Highlight Rows icon** — When enabled, rows are highlighted when you move your cursor over them.
- **Highlight Columns icon** — When enabled, columns are highlighted when you move your cursor over them.
- **Row Lock icon** — When enabled, the top row is locked so that it remains visible while scrolling through the table.
- **Column Lock icon** — When enabled, the first column is locked so that it remains visible while scrolling through the table.
- **Compact Mode icon** — If you define multiple fields as rows or add a multi-column hierarchy to your table, turn on compact mode to condense the fields into a single column.

5 **Fields list** — On the Pivot tab, the Fields list displays any fields that were added to the Data Grid. To build your table, drag fields from the Fields list to the desired section of the Layout panel. Alternatively, click the Field Menu icon next to any field and select where you want it to appear in the table.

- To format the numeric values that are displayed in the table, click the Field Menu icon and select **Format...** from the list. For more information, see Customizing Numeric Values.
- To create a value-based filter for the table, click the Field Menu icon and select **Add as Filter...** from the list. Alternatively, drag the field to the filter area above the Pivot Table Viewer. You also create measure-based filters for the table. For more information, see Pivot Table Filters.
- To collapse the Fields list and expand the Pivot Table Viewer, click the double arrows.

6 **Layout panel** — The Layout panel displays the layout for your pivot table. For date and numeric fields, the summary type is also displayed next to the field.

- To add fields to the layout, drag them from the Fields list to the desired section of the pivot table. You can also group multiple fields within a section. For more information, see Grouping Pivot Table Fields.
- If you are in a NetSuite account with multiple currencies and your workbook contains fields with values in multiple currencies, click the Field Menu icon next to an applicable field and select **Currency...** to apply currency consolidation or conversion. For more information, see Currency Conversion.
- To create a value-based filter for the table, click the Field Menu icon next to the desired field and select **Filter Values...** from the list. Alternatively, drag the field to the filter area above the Pivot Table Viewer. You also create measure-based filters for the table if you select **Greater/ Less than...**. For more information, see Pivot Table Filters.
- To rename a field, click the Field Menu icon next to the desired field and select **Rename...** from the list.
- To format the numeric values that are displayed in the table, click the Field Menu icon next to the desired field and select **Format...** from the list. For more information, see Customizing Numeric Values.
- To change the summary type for dates and numeric values displayed in the table, click the Field Menu icon next to the desired field and select the preferred summary type.
- To collapse the Layout panel and expand the Pivot Table Viewer, click the double arrows.

7 **Pivot Table Filter** — Drag and drop fields from the fields list to this area to create a value-based filter for the table. Alternatively, click the Field Menu icon next to any field in the Fields list and select **Add as Filter...**.

To create a measure-based filter, you must click the Field Menu icon next to the desired field in the Layout panel or the Pivot Table Viewer and select **Greater/ Less than**.

For more information, see Pivot Table Filters.

8 **Refresh** — Click the Refresh icon to update the pivot table in the viewer with any changes you have made to the layout.
9 **Pivot Table Viewer** — The Pivot Table Viewer displays your generated pivot table after updating the layout and clicking the Refresh icon. As an alternative to dragging fields to the Layout panel, you can add them directly to the Pivot Table Viewer.

In the Pivot Table Viewer itself, you can perform the following actions:

- To resize a column or row, drag one of the column or row boundaries until it is the size you want.
- To change the width of a column based on its values, double-click the column header.
- To expand or minimize the number of rows displayed in a column, click the icons in the column header.
- To expand or minimize the number of values displayed for a row, click the icon in the row header.
- To add a total for a column or row, click the Field Menu icon next to the desired field and select **Show Grand Total**.
- To create a measure-based filter for the table, click the Field Menu icon next to the desired field and select **Greater/ Less than**.
- To create a value-based filter for the table, click the Field Menu icon next to the desired field and select **Filter Values...**. Alternatively, drag the field to the filter area above the Pivot Table Viewer.
  
  For more information, see **Pivot Table Filters**.

- To rename a field, click the Field Menu icon next to the desired field and select **Rename...** from the list.

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**Chart Tab**

The Chart tab is where you define the layout for presenting your source data as a chart. Any fields that you added to the Data Grid appear in the Fields list on the left. To build your chart, drag fields from the Fields list to the Layout panel, then click the Refresh icon. The generated chart is displayed in the viewer on the right.

You can create multiple charts using the same source data by clicking the **Add Chart** link.

For information about how to use the Chart tab to create a chart with your workbook source data, see **Workbook Charts**.

The elements of the Chart tab are identified in the image below:
1 **Workbook Menu** — The Workbook Menu is available on every tab in the SuiteAnalytics Workbook interface. It lets you save or share your work, including any selections on the Data Grid, Criteria tab, Pivot tab, or Chart tab. For more information about sharing, see Accessing and Sharing Workbooks.

2 **Undo/Redo** — Click these icons to reverse your last action or reverse your last undo. If your last action was the creation of a filter condition, click Undo once to return to the Criteria tab and a second time to remove the filter. Up to 20 actions can be undone, however sharing and saving a workbook is irreversible.

3 **Navigation menu** — The Navigation menu lets you switch between the Data tab and Criteria tab, or create a pivot table or chart by clicking the **Add Pivot** or **Add Chart** links.

4 **Chart name** — Double-click the chart name to change it. By default, each chart is numbered sequentially starting from Chart 1.

5 **Chart menu** — This menu contains additional options for the chart displayed in the viewer. The following options are available:
   - **Print** — Print the chart currently displayed in the viewer.
   - **Export** — Export an SVG file of the chart currently displayed in the viewer.

6 **Fields list** — On the Chart tab, the Fields list displays any fields that were added to the Data Grid. To build your chart, drag fields from the Fields list to the desired section of the Layout panel. Alternatively, click the Field Menu icon next to any field and select where you want it to appear in the chart.

   To collapse the Fields list and expand the Chart Viewer, click the double arrows.

7 **Layout panel** — The Layout panel displays the layout and customization options for your chart. For date and numeric fields, the summary type is also displayed next to each field.

   To select a chart type, click the chart type link and select an option from the menu. The following options are available:
   - **Column Chart**
   - **Bar Chart**
   - **Area Chart**
<table>
<thead>
<tr>
<th>Chart Types</th>
<th>Line Chart</th>
<th>Stacked Column Chart</th>
<th>Stacked Bar Chart</th>
<th>Stacked Area Chart</th>
</tr>
</thead>
</table>

For more information, see Chart Types.

- To add fields to the layout, drag them from the Fields list to the desired section of the chart. As with pivot tables, you can also group multiple fields within a section to change the granularity of information displayed in the chart. For more information, see Grouping Pivot Table Fields.

- To display the measures in the chart as a percentage of the totals for each record, click Show percentage. You can show percentages for stacked charts only.

- If you are in a NetSuite account with multiple currencies and your workbook contains fields with values in multiple currencies, click the Field Menu icon next to an applicable field and select Currency... to apply currency consolidation or conversion. For more information, see Currency Conversion.

- To change the summary type for dates displayed in the chart, click the Field Menu icon next to the desired field and select the preferred summary type.

- To create a title and subtitle for the chart or to add labels for the X and Y axes, click the Properties subtab and complete the appropriate fields.

- To collapse the Layout panel and expand the Chart Viewer, click the double arrows.

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8 Refresh — Click the Refresh icon to update the chart in the viewer with any changes you made to the layout.

9 Chart Viewer — The Chart Viewer displays your generated chart after updating the layout and clicking the Refresh icon.

In the Chart Viewer itself, you can perform the following actions:

- To view the exacts amounts for a specific measure, point to the desired bar or data point in the chart.

- To hide specific data points in the chart, click the corresponding color in the legend below the chart.