IBM Operations Analytics - Log Analysis
Version 1.3

User's Guide

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Note
Before using this information and the product it supports, read the information in "Notices" on page 17.

Edition notice

This edition applies to IBM Operations Analytics - Log Analysis and to all subsequent releases and modifications until otherwise indicated in new editions.

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Contents

About this publication

This guide contains information about how to use IBM® Operations Analytics - Log Analysis.

Audience

This publication is for users of the IBM Operations Analytics - Log Analysis product.

Publications

This section provides information about the IBM Operations Analytics - Log Analysis publications. It describes how to access and order publications.

Accessing terminology online

The IBM Terminology Web site consolidates the terminology from IBM product libraries in one convenient location. You can access the Terminology Web site at the following Web address:

http://www.ibm.com/software/globalization/terminology.

Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. In this release, the IBM Operations Analytics - Log Analysis user interface does not meet all accessibility requirements.

Accessibility features

This information center, and its related publications, are accessibility-enabled. To meet this requirement the user documentation in this information center is provided in HTML and PDF format and descriptive text is provided for all documentation images.

Related accessibility information

You can view the publications for IBM Operations Analytics - Log Analysis in Adobe Portable Document Format (PDF) using the Adobe Reader.

IBM and accessibility

For more information about the commitment that IBM has to accessibility, see the IBM Human Ability and Accessibility Center. The IBM Human Ability and Accessibility Center is at the following web address: http://www.ibm.com/able (opens in a new browser window or tab)

Tivoli technical training

For Tivoli® technical training information, refer to the following IBM Tivoli Education Web site at http://www.ibm.com/software/tivoli/education.

Providing feedback

We appreciate your comments and ask you to submit your feedback to the IBM Operations Analytics - Log Analysis community.

Conventions used in this publication

This publication uses several conventions for special terms and actions, operating system-dependent commands and paths, and margin graphics.

Typeface conventions

This publication uses the following typeface conventions:

Bold

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:**, and **Operating system considerations**:)
- Keywords and parameters in text

Italic

- Citations (examples: titles of publications, diskettes, and CDs
- Words defined in text (example: a nonswitched line is called a *point-to-point line*)
- Emphasis of words and letters (words as words example: "Use the word *that* to introduce a restrictive clause."; letters as letters example: "The LUN address must start with the letter *L*.")
- New terms in text (except in a definition list): a *view* is a frame in a workspace that contains data.
- Variables and values you must provide: ... where *myname* represents....

`Monospace`

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

Searching and visualizing data

This section outlines how to use the IBM Operations Analytics - Log Analysis Search workspace to search your indexed data and to display this data in charts and dashboards.

To find the root cause of a problem experienced by users such as slowness or a failure, you can search through data such as log files, traces, configuration information, and utilization data. This type of search is iterative because the results for one search might lead to a set of other searches. An example of iterative search is finding the connection timeout in the error logs, which could lead you find the connection pool utilization details.

Search UI

Use this reference topic to help you to navigate the Search user interface (UI).

Buttons and fields

Table 1. Buttons and fields on the Search UI

Button or Field	Description
Search button and field	Search for a keyword or enter a search query.
Data Sources icon	Filter the search for specific data sources or groups of data sources.
Time filter icon	Specify a relative or custom time filter.
Save Quick Search icon	Save the search query and results for later use. To view the saved searches, click the **Saved Searches** icon on the side bar.
Columns to be displayed icon	Filter the columns that are displayed in the Grid and Table views.
Plot chart icon	Select the columns that you want to graph and click the Plot Chart icon.
List or Grid View icon	To toggle between the List and Grid Views, click this icon.

Plot chart editor

Table 2. Buttons and fields on the Plot chart editor

Button or Field	Description
Generate Count check box	To generate a count of the selected columns, ensure that this check box is selected.
Selected Columns	A list of the columns that you selected in the Grid view.
Plot Chart (Current Page Data)	To create a chart of the data on the current page, click the **Plot Chart (Current Page Data)** button.

Table 2. Buttons and fields on the Plot chart editor (continued)

Button or Field	Description
Plot Chart (All Data)	To create a chart of all the data in the results, click the **Plot Chart (All Data)** button.

Render chart editor

Table 3. Render chart editor

Button or Field	Description
Clear All	To clear the graph and close the window, click **Clear All**.
Create New Dashboard	To create a new dashboard based on the data in the graph, click the **Create New Dashboard** icon.
Add Charts to Existing Dashboard	To add the chart data to a dashboard, click the **Add Charts to Existing Dashboard** icon.
Hide Portlet icon	To hide the graph, click the **Hide Portlet** icon.
Settings icon	To change the type of chart or the values displayed on the axes, click the **Settings** icon.
Close Portlet icon	To close the graph and delete the chart, click the **Close Portlet** icon.

Chart settings editor

Table 4. Chart settings editor

Button or Field	Description
Render	To create a chart, click **Render**.
Visualization tab	
Title	Enter a name for the chart.
Chart Type	Select the kind of chart that you want to use.
Parameters: x-axis	Select the value that you want to display on the x-axis.
Parameters: y-axis	Select the value that you want to display on the y-axis.
Query tab	
Query String	The query string used by the search that generated the results.
Time Filters	Select a time filter that for the chart.
Datasource Filters	Filter the chart data for specific data sources.
Selected Columns	The columns that the graph is based on.
Generate Count	Indicates whether a count was generated when the chart was plotted.

Time line graph

Table 5. Time line graph

Field, icon or button	Description
Time line slider icon	Filter the time that is displayed in the time line graph.
Y-axis	Shows the number of log events for each bar.
Bar	Shows the number of log events for the specific time. To view more details, click on a bar to drill down to more details about that time range.
Log Events Granularity	
Time Range	Describes the time range that is displayed in the time line.

Search and Discovered patterns

Grid and Table views

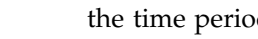
Searching log files

You can search the log files for keywords. Search results are displayed in a timeline and a table format.

Before you begin

To search a log file, you must first define a data source and ensure that the log file is configured for consumption using the IBM Tivoli Monitoring Log File Agent or the Data Collector client. For more information about defining a data source, see the *Administering IBM Operations Analytics - Log Analysis* section of the Information Center. For information about configuring the IBM Tivoli Monitoring Log File Agent or the Data Collector client, see the *Configuring IBM Operations Analytics - Log Analysis* section of the IBM Knowledge Center.

Procedure

1. From the Search workspace , click **Add Search** to create a new tab containing your search criteria.
2. Optional: You can filter data source by name, description, host name, log path, or tags or enter * to do a wildcard search. To limit the extent of the search to an individual data sources and any descendant data sources, select a leaf node from the Data Sources tree ().
3. In the **Time Filter** pane, click the **Time Filter** list () and select the time period for which you want to search. Select **Custom** to specify a start time and date, and an end time and date for your search.
4. In the **Search** field, type the string for which you want to search in the log files. To view distribution information for all logs, in the Search field, type the wildcard character (*).

   To search for a partial string, type an asterisk (*) at the start and end of your search string. For example, to search for strings that contain the phrase hostname, type `*hostname*`.

To narrow your search based on a service topology, type the service topology component on which you want to base your search, followed by a colon (:), followed by your search string. For example, `service:DayTrader`. For more information, see the *Appendix A: Query syntax* in the *Administering IBM Operations Analytics - Log Analysis* section of the IBM Knowledge Center.

5. Click **Search**. The first search you perform after the IBM Operations Analytics - Log Analysis processes have been restarted might take longer to complete than subsequent searches.

   The user interface refreshes every 10 seconds. The updated results are displayed in the **progress bar**.

   Maximum search results: The search returns a maximum of 1000 records by default. This limit applies only to raw searches and not facet queries. This limit can be configured in `unitysetup.properties` file property: `MAX_SEARCH_RESULTS=1000`. **Do not** to use a high value for the `MAX_SEARCH_RESULTS` parameter. When a large number of results are returned, it degrades search performance.

Results

A graph displaying the distribution of matching events in the log is displayed. Log records containing a match for your search term are also displayed in Table view.

When you search for a specific term, the term is highlighted within the individual log records to facilitate faster analysis. If you search for a partial term, each term that contains the search phrase is highlighted. Fields that contain only tagged values, in other words values that are contained within angled brackets (`<>`), are not highlighted. If a field contains values that are tagged and values that are not tagged, the tagged terms are removed and the remaining terms are highlighted as appropriate.

If your search spans data that is stored in the archive, IBM Operations Analytics - Log Analysis displays the initial results while it retrieves the rest of the data. You can interact with the initial search results while IBM Operations Analytics - Log Analysis generates the search results. The progress bar displays the search progress.

To display the latest results during the search, click **We have more results for you**. To stop the search, close the tab. To start another search while you are waiting for the first search to complete, click the **Add Search** tab.

What to do next

If you want to load data that contains tags and want to keep the tagging, you can disable highlighting. To disable highlighting:

1. Open the `unitysetup.properties` file.
2. Locate the `ENABLE_KEYWORD_HIGHIGHTING` property and set it to `false`.
3. Save the file.
4. To restart IBM Operations Analytics - Log Analysis run the following command from the <HOME>/IBM/LogAnalysis/utilities directory:

   ```
   ./unity.sh -restart
   ```

Query syntax

This section describes the combination of words, keywords, and symbols that you can use when searching for phrases using IBM Operations Analytics - Log Analysis.

The query syntax is based on the Solr query syntax. For more information, see:

https://wiki.apache.org/solr/SolrQuerySyntax

Solr uses a number of different query parser plug-ins. Log Analysis supports the Lucene query parser plug-in. For more information about the Lucene query syntax, see:

http://lucene.apache.org/core/5_1_0/queryparser/org/apache/lucene/queryparser/classic/package-summary.html

Standard keywords and operators

This topic lists the keywords and operators that you can use when searching in IBM Operations Analytics - Log Analysis.

OR This is the default operator. Either term or expression must be matched in the results. A variation to this keyword is `or`. For example, to search for a specific severity or message classifier, enter `severity:M OR msgclassifier:"WLTC0032W"`.

+ To get AND like functions, use the + operator. You must add + as a prefix to these queries. For example, to search for a specific severity and message classifier, enter `+severity:W +msgclassifier:"WLTC0032W"`.

AND As an alternative to the + operator, you can use the AND operator. For example, to search for a specific severity and message classifier, enter `severity:W AND msgclassifier:"WLTC0032W"`.

“” Enables you to group individual terms into phrases that are searched for as a unit. For example, “document clustering”.

() Enables you to group expressions to guarantee precedence. For example, document AND (cluster OR clustering).

***** Wildcard operator that can be replaced in the returned value with a number of characters. This can be either passed as an operator to the sources or expanded when the `meta.wildcard-expand` option is turned on. For example, `test*` might return test, tests or tester. You can also use the wildcard in the middle of the search term. For example, `t*est`.

Note: You cannot use this wildcard as the first character in a search. For example, you cannot use `*test`.

? Wild character operator that can be replaced in the returned value with a single character. This can be either passed as an operator to the sources or expanded when the `meta.wildcard-expand` option is turned on. For example, `te?t` might return `text` or `test`.

Note: You cannot use this wildcard as the first character in a search. For example, you cannot use `?test`.

+ Must operator. Forces the use of a keyword. For example `WAS +and DB2` searches for strings that contain the keyword `and`.

field: Enables you to restrict your query to a specific field. For example, `ID:123A` or `msgclassifier:"WLTC0032W"`. These operators are activated for every field defined in your syntax.

By default, the search engine supports the `title` field. When you are creating a search collection, you can extract any number of contents, for each document, and relate these contents to searchable fields. This is specified in the form of the source associated with each collection.

NOT The specified term or expression must not be matched in the search results. Variations to this keyword are `!` and `-`. For example, to search for log records that contain `WAS ID` but that do not contain `DB2 ID`, enter `"WAS ID" NOT "DB2 ID"`.

Note: You cannot use this operator for a single term.

Additional keywords and operators

This topic lists additional keywords that are more specific to the search and indexing operations performed by the search engine.

Range searches

To search for records in a range, use a range query. Range queries can include the terms in the range or they can exclude them. To include the query range terms, use brackets, for example:

`[<search term> TO <search term>]`

To exclude the query range terms, use braces, for example:

`{<search term> TO <search term>}`

Results are returned in lexicographical order.

For example, to search for all the log records modified on or between two dates, enter:

```
mod_date:[20020101 TO 20030101]
```

The search returns all the log records that have been modified in 2003, that is all the log records where the `mod_date` field is within the specified range.

You can also use range queries to search for fields that are not dates. For example, to search for all the log records that contain an ID between A to D but that do not include A or D, enter:

```
title:{A TO D}
```

DateMath queries

To help you to implement more efficient filter queries for dates, you can use DateMath queries.

For example, here are 4 possible DateMath queries:

- `timestamp:[* TO NOW]`
- `timestamp:[1976-03-06T23:59:59.999Z TO *]`
- `timestamp:[1995-12-31T23:59:59.999Z TO 2007-03-06T00:00:00Z]`
- `timestamp:[NOW-1YEAR/DAY TO NOW/DAY+1DAY]`

For more information, see the *DateMathParser* topic in the Lucene documentation at:

http://lucene.apache.org/solr/5_1_0/solr-core/org/apache/solr/util/DateMathParser.html

Escaping special characters

Regular expression or regex queries are supported by the query syntax.

Log Analysis supports escaping for the following special characters:

```
+ - && || ! ( ) { } [ ] ^ " ~ * ? : \ /
```

To escape a special character, use a back slash (\) before the special characters. For example, to search for the query (1+1):2, enter:

```
\(1\+1\)\:2
```

To find multiple terms, use brackets. For example, to search for moat and boat, enter:

```
/[mb]oat/
```

Example query: Search for a keyword in a specified range

This example search query searches for a keyword in a specified time range. You can use queries like this one to search for a keyword in a specified range.

You want to search for all the instances of the error code 6543 in the `SUMMARY` field with a response time less than 5 seconds. For example:

```
fieldName:SUMMARY

fieldContents: "Transaction 12345 has failed with response time of 10
seconds and error code of 6789."
```

You enter the following query. It specifies the summary field and a query for the time range:

```
"query" : "SUMMARY:/.*\\s([6-9]|\\d\\d+)\\ssecond.*6789\\./"
```

Search results timeline

The search results timeline displays a graph showing the distribution of log events over a time period.

You can use the timeline slider to view the logs for a specific duration. You can zoom in and out to change the range of the data displayed. If there are a large number of dates in the log file, the timeline might display them as *###* rather than displaying the dates. Use the timeline scroller to zoom in and display the appropriate date information.

The Timeline does not display data at the seconds level for data ingested using IBM Operations Analytics - Log Analysis Version 1.1. A message is displayed indicating that the data was indexed using a previous version of IBM Operations Analytics - Log Analysis. For this data, the Timeline cannot display information for multiple events that occur in time periods of less than one minute.

Table view

Log records are displayed in both in a grid view and a list view. The default view is the List view. Log records are displayed in the grid view can be ordered by column for easy analysis. This view can be customized and used to display information in a range of ways:

Sorting in Grid view

You can also sort the information in the table columns by clicking on the column header. Not all columns are sortable. The Index configuration determines the fields that can be sorted.

The `_datasource` field is an internal field and cannot be sorted or used for charting purposes. If you want to sort your data by data source or to create a chart, create a field in the Index configuration for this purpose. This field can be used for sorting and in charts. For more information about adding a field to the Index configuration, see the *Administering* section of the documentation on the IBM Knowledge Center.

Toggle views
Click **List View** or **Grid View** button to toggle between views. In each of these views, the button displayed allows you to toggle to the alternative view.

Customizing the columns displayed
To configure Grid view to display only the columns that you require, click the **Select Columns** icon on the Grid view toolbar, remove the columns that you do not want to display, and click **OK**.

Display a chart of your results
You can display the distribution of values for a number of the columns as a chart. To display the chart, select the column and click the **Plot Column** icon on the Grid view toolbar. The distinct values used to plot the chart can be viewed as hover help for each chart sector. The Plot feature is available for some values only. Where available, the **Plot Column** button is active when the columns are selected.

If the chart title contains a loading icon, the chart is loading data from the archive. The chart is automatically updated when all the searches are complete. If you log out before the search is completed, the search stops.

Executing a Custom App from the Grid view toolbar
If you have configured a shortcut to a Custom App, click the icon on the toolbar to launch the Custom App. For information about adding a Custom App shortcut, see the *Extending* section of the documentation on the IBM Knowledge Center.

Using a Custom App to display selected data from a column or cells
If you have created the required Custom App, you can select and display the contents of a column or individual cells. To display the data, select a column or individual cell in Grid view and then launch the application. If you select a column, only data from the currently displayed page is displayed by the application. For more information about creating the application to display this information, see the *Extending* section of the documentation on the IBM Knowledge Center.

Refining search results

You can refine the search results.

You can narrow your search, by adding additional criteria in the search field. For example, the string `severity : E` returns log lines that contain errors. Alternatively, you can perform a free text search for a value in a column. All of the log lines containing that text are returned. If more than 100 log lines returned, click the arrows to view more log lines.

Note: If a host file contains the character sequence `::1` next to the hostname, `::1` might be displayed as the value in the `sourceip` column.

You can also refine your search in these ways:

Search Patterns

Refine your search using the values in the Search Patterns pane. For each new search, the list of fields with which you can filter your search is updated and listed in the Search Patterns pane. The number of occurrences of each value found is displayed with each unique keyword added as a child node. Click a keyword to add it to the **Search** field.

The keyword is added in the format `field:"value"`. You can add multiple keywords to refine your search. If you want to run an `OR` query, type the word `OR` between each added keyword search string. When you have added all of the search criteria, click **Search** to return log lines that contain the values that you have specified.

Discovered Patterns

When you search a data source that has been configured with a Source Type that uses the Generic annotator, the results of the search are listed in the Discovered Patterns pane.

For each new search, the list of fields with which you can filter your search is updated and listed. The counts in the Discovered Patterns pane indicates the number of records that contain a specific key or key-value pair. A key-value pair might occur multiple times in a record, but the total reflects the number of records in which the key-value pair occurs. The count of the value of nodes in a key-value pair tree might exceed the key count when multiple values occur for the same key in a single record.

Click a keyword to add it to the **Search** field. The keyword is added in the format `field:"value"`. You can add multiple keywords to refine your search. If you want to run an `OR` query, type the word `OR` between each added keyword search string. When you have added all of the search criteria, click **Search** to return log lines that contain the values that you have specified.

Data Source filtering

Refine your search by selecting a **Data Sources** leaf node. When you select a leaf node in the **Data Sources** tree, your search is refined to search only that data source and any descendant data sources. The **Data Sources** tree is defined by selecting a service topology node when you configure your data source. For more information about defining and applying a service topology, see the *Administering* section of the documentation on the IBM Knowledge Center.

Time Filters

The **Time Filters** list allows you to refine your search based on a selected time period. Select a value from the list to limit the search period. The time period chosen limits the search time period based on the log entries. For example, choosing **Last Hour** limits the search to the final 60 minutes of log file entries.

Selecting a timeline value

Click a value in timeline to refine your search based on that value. Log events can be visualized up to second level granularity.

Saving a search

After you search for a keyword or series of keywords, you can save your search so that you can run it again at a later time. The searches you save are added to the Quick Searches pane.

About this task

Any directories that you created to organize your Quick Searches cannot be deleted. The directory structure is maintained.

Procedure

To save a search:

1. In the Search workspace, click the **Save Quick Search** icon. The Save Quick Search dialog box is displayed.
2. Enter a value in the **Name** and **Tag** fields. Adding a tag allows you to contain similar searches within a folder.
3. (Optional) Specify a time range as an absolute or relative time. The default option is relative time.
4. Click **OK**. The search is saved to the Save Quick Search pane.

What to do next

To use a saved search pattern, browse to the saved search in the Quick Searches pane and double-click the search pattern that you want to launch. You can also edit and delete the search from the right-click menu.

Visualizing data

You can create charts and graphs that help users to process information quickly and efficiently.

Creating charts and graphs

After you select one or more columns in the grid view, you can use the **Plot Column** button to create charts to display the results.

About this task

To create a chart that is based on a specific field, you can create a search query and plot a chart based on the results. If your query returns blank fields, the chart might not display. To ensure that this does not happen, use queries that return data for the specific field. For example, to search for the severity field, enter `severity:*TO*`.

Procedure

1. In the Search workspace, select **Grid view**.
2. Select one or more columns.
3. Click the **Plot Column** icon in the Grid view toolbar. The **Plot Chart** UI is displayed.
4. To display counts for the selected columns, select the **Generate Counts** check box.
5. If the columns that you selected contain dates or numeric values, you can use the **Granularity** field to specify the granularity. You can use this setting only for columns that contain dates or numeric values and can be filtered.

6. If the columns that you selected contain numeric values, you can also apply statistical functions on the values. You can use **sum**, **min**, **max**, **avg**, **count**, **missing**, **sumOfSquares**, and **stddev** functions.
7. To plot the chart on 100 or less of the records that you selected, click **Plot Chart (Current Page Data)**.
8. To plot the chart on all the indexed data, click **Plot Chart (All Data)**. If one or more of the fields in the selected columns is not filterable, the charts are only plotted if the total number of records is less than 1000. To change this setting, you must modify the `MAX_DATA_FACETS_IN_CHART` property in the `unitysetup.properties` file.

Results

The graph is rendered. To change the graph type, use the **Edit** icon.

If the chart title contains a loading icon, the chart is loading data from the archive. The chart is automatically updated when all the searches are complete. If you log out before the search is completed, the search stops.

Dashboards

You can use dashboards to collate multiple charts, which are created during problem diagnosis, on a single user interface (UI).

For example, imagine an organization uses IBM Operations Analytics - Log Analysis to monitor all the server logs that it generates. The system administrator wants to be able to view the most critical errors, the highest severity errors, and the total number of errors on a single UI. To facilitate this scenario, you create a dashboard that is called System Admin and you add the charts that show the required information to it.

The data that is displayed on the dashboards is based on charts. For more information, see the *Charts* topic under **Custom Apps** > **Steps to create a custom app** > **Application files** in the *Extending IBM Operations Analytics - Log Analysis* section.

Sample dashboards

Sample dashboards are included as part of the sample content for the following custom app samples:

- Sample_EventInsightpack_v1.0.0.0
- Sample_AppTransInsightpack_v1.0.0.0
- Sample_weblogInsightpack_v1.0.0.0
- WASInsightPack_v1.1.0.3

Creating dashboards

You can create a dashboard to visualize data from multiple sources on a single UI.

About this task

This procedure describes how to create a dashboard and chart. You can also add a chart to an existing dashboard. To add a chart to an existing dashboard, click **Add Charts to an Existing Dashboard**. Select a dashboard from the list.

Use the drill-down feature to search the data for records that correspond to the area of the chart that you select. When you drill down on a field in a chart, a new search is created that is based on the field that you selected.

The drill-down feature is only supported for dashboards that are created in the UI. The drill-down feature is not supported in some cases where the underlying chart query does not support it. For example, if the query searches two date fields.

Procedure

1. Open an existing search UI or click **Add New Search** to create a new search UI.
2. Switch to the Grid View and plot the charts that you would like to include in the dashboard. You cannot use more than eight charts in a single dashboard. For more information, see "Creating charts and graphs" on page 12.
3. To plot the charts that you would like to include in the dashboard, select the columns that you are interested in and click the **Plot column** icon. Click **Plot Chart (All Data)**.

   If you want to use the drill-down feature, you must click **Plot Chart (All Data)**. You cannot use the **Plot Chart (Current Page Data)** button. The drill-down function is not supported for this option.

   You can also run a number of statistical operations on the selected columns. Select one of the following functions from the **Summary Function** drop-down list.

   min The minimum values in a field.

   max The maximum values in a field.

   sum The sum of the values in a field.

   avg The average of the values in a field.

   count The count of the values in a field.

   missing
   The number of records for which the value for a field is missing.

   sumOfSquares
   Sum of the squares of the values in a field.

   stddev
   The standard deviation of the values in a field.
4. To create the dashboard, click the **Create New Dashboard** button. Enter a name and a tag. The tags are used to define groupings.
5. Save the dashboard.

What to do next

After the dashboard is created, a custom app is automatically generated that represents the dashboard. You can view the custom app and dashboard on the Search UI under **Search Dashboard** > **Dashboards**.

To view the visualization and query settings for the charts that you added to a custom dashboard, click **Search Dashboard** > **Dashboards** > *Dashboard name*. Select the required chart. Click the **Settings** icon. There are two tabs, the **Query** and the **Visualization** tabs.

Information about the query that provides the information that is visualized in the chart is displayed on the **Query** tab. This query is saved when the chart is created.

To change the time filter from the default relative setting to match the absolute time that is used by the Search UI, open the **Query** tab and select the setting from the list. To view the effect of changing this setting without changing the dashboard, click **Render**.

The chart type and parameters are detailed on the **Visualization** tab. These settings are the settings that you made when you created the chart. For more information about these settings, see the *Application files* and *Charts* topics in the *Custom Apps* section of the *Extending IBM Operations Analytics - Log Analysis* guide.

To ensure that your dashboard displays current information, you can use the auto-refresh feature to regularly refresh a dashboard at scheduled intervals. For more information on configuring automatic dashboard refreshes, see the Configuring automatic refreshes for new dashboards topic in the *Administering IBM Operations Analytics - Log Analysis* guide.

Deleting search dashboards

If you no longer need a dashboard, you can delete it.

About this task

There are two types of dashboard that is displayed in the **Search Dashboards** list on the UI, dynamic dashboards and custom apps. Dynamic dashboards do not contain any custom logic and the type value that is defined in the associated JSON file is `DynamicDashboard`. Custom apps are customized dashboards that are installed as part of an Insight Pack. They do contain custom logic.

The delete functions differently for each type. When you delete a dynamic dashboard, the dashboard and all related data are deleted. When you delete a custom app, the custom app file extension is changed to `.DELETED` for deletion by the IBM Operations Analytics - Log Analysis administrator.

Procedure

1. Open the Search UI.
2. Open the **Search Dashboards** list and select the dashboard that you want to delete.
3. Right-click the dashboard and click **Delete**. Confirm that you want to delete it when prompted.

Results

If the dashboard is a dynamic dashboard, the dashboard and associated data is deleted. If the dashboard is a custom app, the custom app file extension is changed to `.DELETED`. You can contact the IBM Operations Analytics - Log Analysis administrator and ask them to delete the custom app if appropriate.

Custom Apps

Custom Apps allow you to create and execute custom scripts and display the output of those scripts in a dashboard.

To generate a Custom App, you create a JSON application file in the `<HOME>/IBM/LogAnalysis/AppFramework/Apps` directory. You can create sub directories in this directory to organize your applications.

After you have created your Custom App, the Custom Apps pane, in the Search workspace, displays the list of Custom Apps in the folder structure that you have specified.

To run a Custom App, locate it in the Custom Apps, right-click and click **Execute**.

For information about developing and customizing Custom Apps, see the *Extending* section of the documentation on the IBM Knowledge Center.

Expert advice

Expert advice is a Custom App that provides links to contextually relevant information to allow you to quickly resolve problems. Using the Expert advice Custom App, you can select any column or cells in Grid view and launch a search of the IBM support portal (IBMSupportPortal-ExpertAdvice.app). The Custom App searches for matches to unique terms contained in the column that you have selected. This Custom App can be launched from the Custom Apps panel in the left navigation pane of the Search workspace.

To increases the likelihood of success, the Custom App removes data that is specific to your environment for each search term. For example, a log message that contained the search string `unable to access jarfile /myMachine/foo/bar/foobar.jar` is not likely to return a specific match as the server path is likely to be specific to a user. This is abbreviated to `unable to access jarfile` to ensure better search results. The criteria used to exclude data can be configured. For more information about configuring the Expert advice Custom App, see the *Configuring IBM Operations Analytics - Log Analysis* section of the IBM Knowledge Center.

To launch the Expert advice Custom App for the data returned by a search, select a column or cell of data in Grid view, right-click and click **Execute** to launch the IBMSupportPortal-ExpertAdvice.app Custom App.

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