# ScienceLogic

# **Skylar Analytics**

Version 1.4.0

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# Chapter

## **Introduction to Skylar Analytics**

#### Overview

*Skylar Analytics* contains a set of tools that lets you view, analyze, and use the data that SL1 gathers and sends to the Skylar AI engine. Skylar Analytics insights are presented in the SL1 user interface, in a ScienceLogic-hosted instance of Apache Superset, and in the Skylar AI API.

Skylar Analytics includes the following components:

- **Data Visualization** contains SQL-based dashboards and charts based on data gathered by Skylar AI and SL1. Data Visualization is achieved using a ScienceLogic-hosted instance of Apache Superset or with your own third-party tool.
- **Data Exploration** enables third-party tools that use the Open Database Connectivity (ODBC) interface to access the metric data from Skylar AI. This component lets you use ODBC to connect Skylar AI data with applications like Tableau, Microsoft Power BI, or other business intelligence tools.
- Anomaly Detection uses Skylar AI to identify unusual patterns that do not conform to expected behavior. Anomaly Detection provides always-on, unsupervised, machine-learning-based monitoring that automatically identifies unusual patterns in the real-time performance metrics and resource data that it observes. Anomalies do not necessarily represent problems or events to be concerned about; rather, they represent unexpected behavior that might require further investigation.
- **Predictive Alerting** helps to avoid problems such as file systems running out of space, hosts running out of memory, or issues with network reliability due to oversubscription. The alerts are generated in advance of the problem and can provide days, weeks, or months of notice depending upon the conditions.

IMPORTANT: Skylar Analytics requires SL1 12.3.0 or later.

This video provides an overview of the different features of Skylar Analytics: https://player.vimeo.com/video/990317575?h=74e1aca2bf

To view the latest Skylar Analytics release notes, see the Skylar Analytics Release Notes.

This chapter covers the following topics:

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### What is Skylar Al?

Autonomic IT leverages artificial intelligence (AI), automation, and data to intelligently self-manage an entire IT stack. Autonomic IT drives autonomous businesses with rapid decision-making, cost-optimized scalability, and innovative experiences that empower organizations to focus on core innovation. The ScienceLogic AI Platform, which includes Skylar Automated RCA, Skylar Analytics, and Skylar Advisor (coming soon), helps customers with their journey towards Autonomic IT.

*Skylar AI* is a software services suite powered by artificial intelligence (AI) that is designed to automatically manage and anticipate IT incidents. Skylar AI reasons over telemetry and the stored knowledge of an organization to deliver accurate insights, recommendations, and predictions.

SL1 collects data and leverages Skylar AI to learn the patterns for a particular device metric over a period of time. Skylar uses the resulting data to build a device metric-specific model that is used to define a scope of expected behavior as well as anomalous data points.

#### Features of Skylar AI

Skylar AI is the engine that powers several different software components. The components in the Skylar family of services share the following characteristics:

- **Reactive**. When something fails, Skylar AI tells you in plain language what happened and how to fix it with relevant context.
- Predictive. Skylar AI alerts you in advance to an expected out-of-capacity condition.
- **Proactive**. Skylar AI accurately answers any question asked of it with context drawn from company knowledge sources, such as bugs, support tickets, Knowledge Base articles, and Product Documentation, and recommends next steps.

Skylar Al integrates seamlessly with the SL1 platform and other IT management tools. You can interact with Skylar Al through these familiar environments, where it enhances existing workflows with Al-driven insights and automation capabilities. Skylar Al can send you alerts and notifications, which can be customized to suit individual preferences or organizational needs. These alerts help you stay informed about potential issues, ongoing incidents, or opportunities for optimization.

#### Components of Skylar AI

The Skylar AI family of services currently includes the three following components:

• Skylar Automated Root Cause Analysis (RCA), a log-based, root cause identification and analysis service powered by unsupervised AI.

- **Skylar Analytics**, an advanced reporting and custom analytics service that combines Al-powered analytics with deep data exploration and visualization.
- Skylar Advisor, a proactive IT problem-solving advisory service powered by human-centered Al.

#### Data Analyzed by Skylar Al

The following image shows the flow of data into and out of SL1 and the Skylar Al Engine:



The following list contains some of the types of data that SL1 can send to the Skylar AI engine, where the data is analyzed and used by Skylar Automated RCA, Skylar Analytics, and Skylar Advisor:

- Alert and event logs
- Availability data collected by SL1
- Business Service health, availability, and risk metrics from SL1
- Class-Based Quality-of-Service (CBQoS) metadata and CBQoS time series data
- Data from Gen 1 SL1 agents, which use the SL1 Distributed Environment
- Data from Gen 3 SL1 agents, which use the SL1 Extended Architecture
- Dynamic Application mapping and performance data
- Topology data for L2, L3, CDP, LLDP, and ad-hoc relationships between devices
- DCM(+R) relationships
- Metadata for web content, SOAP/XML transaction, and domain name monitors
- Process and service data

## What is Skylar Analytics?

The Skylar Analytics suite of services uses data gathered by SL1 to explore data, generate visualizations, and monitor IT infrastructure metrics. Skylar Analytics can also use Skylar AI to predict alerts before they happen, and detect anomalies that could become events that might disrupt your IT infrastructure and functionality.



Skylar Analytics includes the following components:

- **Data Visualization** contains SQL-based dashboards and charts based on data gathered by Skylar AI and SL1. Data Visualization is achieved using a ScienceLogic-hosted instance of Apache Superset or with your own third-party tool.
- **Data Exploration** enables third-party tools that use the Open Database Connectivity (ODBC) interface to access the metric data from Skylar AI. This component lets you use ODBC to connect Skylar AI data with applications like Tableau, Microsoft Power BI, or other business intelligence tools.
- Anomaly Detection uses Skylar AI to identify unusual patterns that do not conform to expected behavior. Anomaly Detection provides always-on, unsupervised, machine-learning-based monitoring that automatically identifies unusual patterns in the real-time performance metrics and resource data that it observes. Anomalies do not necessarily represent problems or events to be concerned about; rather, they represent unexpected behavior that might require further investigation.
- **Predictive Alerting** helps to avoid problems such as file systems running out of space, hosts running out of memory, or issues with network reliability due to oversubscription. The alerts are generated in advance of the problem and can provide days, weeks, or months of notice depending upon the conditions.

For more information about these components, see the following chapters.

## Getting Started with Skylar Analytics

Before you can start using Skylar Analytics, you will need to perform the following configurations in SL1 to enable the export of data from SL1 to Skylar:

- Run the Skylar SL1 Management Script
- Enable Skylar Analytics for one or more organizations

After you perform these configurations, you can access Skylar Analytics and other key Skylar Al components from the **Skylar Al** page (\*) in SL1.

#### Running the Skylar SL1 Management Tool

The Skylar SL1 Management Tool configures SL1 data and SL1 processes, and it starts monitoring the Skylar connection and configuration. The script is named sl-otelcol-mgmt.py, and it is included with Skylar Analytics in the sl-otelcol RPM package.

**NOTE:** For this release of Skylar Analytics, you will need to contact ScienceLogic for the API Key and AI Engine URL values to set up the Skylar connection.

To run the Skylar SL1 Management Tool:

- 1. Use one of the following commands to run the Skylar SL1 Management script on the Database Server (an SL1 Central Database or an SL1 Data Engine):
  - For SL1 12.3.0:

sudo sl-otelcol-mgmt.py -vv skylar --skylar-metrics --skylarconfig --skylar-endpoint "<URL\_for\_skylar\_system>" --skylar-apikey "<Skylar-API-Key>" --ap2-feature-flags

• For SL1 12.3.1 or later:

```
sudo sl-otelcol-mgmt.py -vv skylar --skylar-all --skylar-
endpoint "<URL_for_skylar_system>" --skylar-api-key "<Skylar-
API-Key>" --ap2-feature-flags
```

where *<Skylar-API-Key>* is the API key for Skylar AI. Ask your ScienceLogic contact for this value.

After successfully running the script, on the **System Logs** page (System > Monitor > System Logs), you will see "Info" messages for each configuration change (filter on sl-otelcol-mgmt). You will also see "Major" system log messages whenever connectivity fails for the Skylar endpoint or the OpenTelemetry Collector.

After data streams into the Data Visualization dashboards, they will populate with data. Please note that this process might take several minutes.

TIP: To check to make sure you have connected Skylar AI to SL1, go to the Skylar AI page in SL1. If the page loads, then the connection was successful. You can also go to the Service Connections page (Manage > Service Connections) and look for a service connection with a Type of "Skylar AI Engine" to verify that the connection was successful.

2. To check the status of the installation, run the following command:

```
sudo sl-otelcol-mgmt.py -vv status
```

You should look for the following messages in the output:

----- checking feature toggles SL\_EXPORT\_EVENTS = False SL\_EXPORT\_METRICS = True SL\_EXPORT\_CONFIG = True ----- checking services sl-otelcol is enabled and running ----- checking connectivity checking: Skylar endpoint is healthy checking: local OTELCOL endpoint is healthy

3. If you need to turn off the Skylar connection, run the following command:

sudo sl-otelcol-mgmt.py -vv skylar --skip-status-service

4. Continue to the next step to specify the organizations you want to use for exporting data to Skylar.

#### Enabling Skylar Analytics for One or More SL1 Organizations

In SL1, if you want to use Anomaly Detection and Predictive Alerting, you will need to select one or more organizations that will share data with Skylar AI. This data will come from all of the devices in a selected organization. By default, the Skylar AI features are disabled.

You can see which organizations are currently sending data to Skylar AI by going to the **Organizations** page (Registry > Accounts > Organizations) and looking at the **Skylar AI Status** column for the organizations.

To enable Anomaly Detection and Predictive Alerting:

- 1. In SL1, go to the **Organizations** page (Registry > Accounts > Organizations) and click the check box for one or more organizations.
- 2. In the **Select Action** drop-down, select Send Data from Selected Orgs to Skylar AI and click **[Go]** to start sending data about the selected organizations to Skylar AI. The **Skylar AI Status** column for the selected organizations changes to *Enabled*.

## Chapter

# 2

## Skylar Analytics: Data Visualization and Data Exploration

#### Overview

The **Data Visualization** component of Skylar Analytics contains dashboards and charts based on data gathered by Skylar AI. Data Visualization is achieved using a ScienceLogic-hosted instance of Apache Superset or with your own third party tool.

Currently, this data includes server-focused metrics and basic network interface metrics, with more metrics planned for future Skylarupdates.

IMPORTANT: The dashboards, charts, and reports in the Data Visualization component of Skylar Analytics are not compatible with SL1 dashboards, widgets, or reports.

The optional **Data Exploration** component enables third-party tools that use the Microsoft Open Database Connectivity (ODBC) interface to access the metric data from Skylar AI. This component lets you use ODBC to connect Skylar AI data with Tableau, Microsoft BI, and other business intelligence tools.

This chapter will provide a general overview of how to view the charts, graphs, and other reports in the Skylar Analytics user interface, along with tips and best practices for users of SL1 and Skylar Al.

This chapter covers the following topics:

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## What is Data Visualization?

Before the initial release of Skylar Analytics, SL1 stored data in a proprietary format that was not easily exported to other third-party applications for further research and insight. Skylar Analytics takes the data gathered by SL1 and Skylar AI, normalizes it, and makes it available in standard ODBC database format.

The data originates from SL1 data collectors, undergoes processing, and is then simultaneously transmitted to Skylar via API.

ScienceLogic hosts an instance of Apache Superset as an option for **Data Visualization** that lets you explore and view your data using business intelligence (BI) dashboards. You can also leverage the Data Visualization component with your existing BI tools for your company that support ODBC.



**NOTE:** Because ScienceLogic does not own the underlying framework for the Data Visualization and Data Exploration components, ScienceLogic is not responsible for maintaining or updating documentation for third-party open-source software, including Apache Superset. For the most current and accurate information, see Additional Resources for Skylar Analytics.

#### Viewing Dashboards and Charts in Data Visualization

The Data Visualization component of Skylar Analytics contains dashboards and charts based on data gathered by Skylar AI and SL1.

IMPORTANT: The dashboards in the Data Visualization component of Skylar Analytics are *not* compatible with SL1 dashboards, widgets, or reports.

When you log into the Data Visualization component of Skylar Analytics, the Home page appears:

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Home								
> Recents								
✓ Dashboards								
Favorite Mine All						+ DASHBOARD	) •	NEW ALL >
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✓ Charts								
Favorite Mine All						+ CHART	) v	NEW ALL >
Filesystem Utilization (AVG) ☆ : Modified 11 hours ago	Space Hogs (GiB) Modified a day ago	☆ :	Filesystem Usage Distribu 😭 🗄 Modified a day ago	Top 10 Filesystem Usage 🚖 🗄 Modified a day ago	Top-N Filesystem Usage ( 🏠 🗄			
> Saved queries								

This page contains links to the dashboards and charts that you have used the most, including those that you have marked as favorites (\*). You can also create a dashboard or a chart from this page, and you can view all dashboards and charts by clicking the **View All** link.

For Skylar Analytics, you will mainly use the following tabs to view SL1 and Skylar AI data visualizations:

- Dashboards
- Charts
- Datasets (for administrators)

#### Viewing and Customizing Skylar Analytics Dashboards

A **dashboard** in Skylar Analytics is similar to a dashboard in SL1, in that they both contain a number of graphical "widgets" that display data in a variety of ways, such as pie charts, line graphs, maps, bar charts, and other visualizations. In Skylar Analytics, a widget is called a "chart".

**NOTE**: Unlike dashboards in SL1, a dashboard in Skylar Analytics is used only for laying out the various charts that make up that dashboard. You can use charts to customize the data. One significant difference is that a chart, when modified, impacts all dashboards using that chart definition. Charts can be duplicated to be modified for different analyses on different dashboards.

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dvc_nme 0	fs_nme 0	Filesystem Used (GiB)	dvc_nme 0	fs_nme ©	Filesystem Utilization % 0	dvc_nme 0	fs_nme 0	GIB 🕆	<b>x</b> :-	dvc_nme 0	Filesystems	Total Space Used (GiB)	
dc3esgpu01	/data00	805	JKECK-10.100.100.241-DC	1	32.0	dc3esgpu01	/data00	805	8.50	dc3esgpu01	2	804.52	
JKECK-10.100.100.241-DC	1	6.45	JKECK-10.100.100.241-DC	/data.local/db	20.0	JKECK-10.100.100.241-DC	1	6.59	32.0	JKECK-10.100.100.241-DC	\$	13.74	
JKECK-10.100.100.241-DC	/data.local/db	4.94	JKECK-10.100.100.241-DC	/var/lib	18.0	JKECK-10.100.100.241-DC	/data.local/db	5.25	20.0				
JKECK-10.100.100.241+DC	/var/lib	1.83	dc3esgpu01	/data00	8.50	JKECK-10.100.100.241-DC	/var/lib	1.83	18.0				
JKECK-10.100.100.241-DC	/var/log	0.158613	JKECK-10.100.100.241-DC	/home	6.00	JKECK-10.100.100.241-DC	/var/log	169m	3.00				
JKECK-10.100.100.241-DC	/var	0.117544	JKECK-10.100.100.241-DC	/var/log/audit	4.00	JKECK-10.100.100.241-DC	/var	118m	2.00				
JKECK-10.100.100.241-DC	/var/log/audit	0.0829707	JKECK-10.100.100.241-DC	/var/log	3.00	JKECK-10.100.100.241-DC	/var/log/audit	87.7m	4.00				
		1 2			1 2			[	2				
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#### Default Skylar Analytics Dashboards

Skylar Analytics contains the following default dashboards:

- Filesystem Overview + Exploration (Sample).
  - Displays 95th percentile data, file system utilization distribution (as a percentage and Gigibit or GiB), and "Space Hogs" (the devices using the most file system space).
  - You can click a device name on the "Space Hogs" pie chart to display chart details specifically for that device.
  - Also includes the **[Ad-Hoc Comparative Analysis]** tab, which displays additional file system charts for all devices or selected devices from the **[Overview]** tab.
- Filesystem Statistics (Sample). Displays a pie chart of "Space Hogs" (the devices using the most file system space), file system utilization as a percentage, file system inventory by host, and file system usage distribution.
- Filesystem Usage (Sample).
  - Displays a set of file system usage, utilization, 95th percentile and Top-N inventory charts for all devices, including a pie chart of "Space Hogs" (the devices using the most file system space).
  - You can click a device name on the "Space Hogs" pie chart to display chart details specifically for that device.

- Interface Statistics (Sample). Displays interface traffic in a variety of charts, including active hosts, active interfaces, dropped packets, and 95th percentile for the last 30 days (as a percentage and MIBPs).
- Most Significant Resource Changes (Sample).
  - Displays devices with the highest delta of file system usage, along with average file system usage, Top-N interface usage delta, and interface traffic in the past seven days.
  - You can click a device name on the "Top-N Filesystem Usage" or the "Top-N Interface Usage" tables to display chart details specifically for that device.

#### • Visualization Variety Testing (Sample).

- Displays a variety of chart visualizations related to file system utilization, including a table, a "big number" with a line graph, a gauge, a set of tree maps, and a sunburst map.
- This table is not meant to be informational so much as an example of the types of visualizations you can use with Skylar Analytics

**NOTE:** Each default dashboard has the word "(Sample)" or "(Skylar)" at the end of its name to show that it is a ScienceLogic dashboard, and also to remind you to duplicate any of these dashboards or charts if you wish to make modifications. They are also owned by the System Administrator ("SA") user. These SA-owned dashboards and charts might be updated by ScienceLogic periodically.

#### Working with Skylar Analytics Dashboards

You can use the following tips to get more data from your Skylar Analytics dashboards:

- For most dashboards, you can click a single device or item in the first chart at the top left of the Dashboard page to view data specific to just that device. Click the device a second time to clear the filter.
- Hover over a graphical element in a chart, such as a piece of a pie chart or a colored metric in a tree map to view a pop-up with more information about that element.
- Click **[Edit Dashboard]** to make changes to the dashboard and the charts that comprise the dashboard. For more information, see <a href="https://docs.preset.io/docs/creating-a-dashboard">https://docs.preset.io/docs/creating-a-dashboard</a>.

The following image displays a dashboard with a device selected in the "Space Hogs" graph that forces the other graphs to only display data for that device:

F	ilesystem Statistics (Sample) 🏠 Published					EDIT DASHBOARD		
<del>기</del> 구	Space Hogs (GiB)	۸ :	Filesystem Utilization (>=65%)			₹ 🚺	÷	
				empty				
	dcleegpud1,/data0	0 ∢ 1/9 ▶ (All) (mr)		No results were returned for this query				
	Filesystem Inventory - By Host	₹0:	Filesystem Usage Distribution (GiB)					
	Host         Plasystems         Tr           dc3ksgpx01         1	otal Space Used (Oill) 3 804.51	G82 804.51	dc3ergov71804.51	dc3esgnx01/688000 804 51			

When viewing a dashboard, you can click the horizontal ellipsis button (\*\*\*) at the top right of the Dashboard page to open a menu with the following dashboard options:

- *Refresh dashboard*. Updates all of the charts in the dashboard to account for any changes you might have made.
- Enter fullscreen. Displays the browser window containing the dashboard display as full screen. Select Exit fullscreen from the menu to return to the previous setting.
- Save as. Lets you save a copy of the dashboard, with the option of overwriting the existing dashboard or changing the name to make a new dashboard (if you have appropriate permissions).
- Download. Lets you export the dashboard as a PDF or download the dashboard as an image.
- Share. Lets you copy a permalink to the chart to the clipboard of your computer, and also lets you share a chart using email.
- Set auto-refresh interval. Lets you choose how often you want Skylar Analytics to update the data for the dashboard. The default is Don't refresh.

On a Dashboard page, you can also click the vertical ellipsis button (1) at the top right of a *chart* on the dashboard to open a menu with the following chart options:

- Enter fullscreen. Displays the browser window containing just this chart display as full screen. Click the Exit fullscreen icon (X) or select Exit fullscreen from the menu to return to the previous setting.
- Edit chart. Opens the Edit Chart page so you can add metrics, edit queries, and make other updates to this chart. Click [Save] to keep your changes (if you have appropriate permissions).
- Cross-filtering scoping. Lets you add **cross-filtering**, which lets you apply a data element from a chart (like a table row or a slice from a pie chart) and then apply it as a filter across all eligible charts in the dashboard. For more information, see <a href="https://docs.preset.io/docs/cross-filtering#scoping-cross-filters">https://docs.preset.io/docs/cross-filtering#scoping-cross-filters</a>.
- View query. Displays the SQL query for that chart.
- View as table. Displays the chart in table format.

- Drill to detail. Displays all the data that makes up a chart. For more information, see <a href="https://docs.preset.io/docs/drilling-to-chart-details">https://docs.preset.io/docs/drilling-to-chart-details</a>.
- Share. Lets you copy a shareable chart link to your system's clipboard, or launches your system's default email client and composes a new message featuring the chart URL.
- Download. Lets you export the chart to .CSV or Excel, or you can download the chart as an image.

To customize a dashboard:

- 1. Select the dashboard from the **Dashboards** page. You can also hover over the dashboard and click the Edit icon.
- 2. On the Dashboard page, click [Edit Dashboard]. The Edit Dashboard page appears:

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									CHARTS	LAYOUT ELEMENTS
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				dc3esgpu01	bond0	b4:83:51:0b:b3:f4	26.3k	1.19M	Show only my charts	0
				dc3esgpu01	eno12399	b4:83:51:0b:b3:f4	26.3k	1.19M		
				dc3esgpu01	eno12409	b4:83:51:0b:b3:f4	11.63	0.1012	Filesystem Usage (AV	G) 7 Days
â				dc3esgpu01	eno12429	b4:83:51:0b:b3:f7	0	0	Viz type Dataset crucible giga1	Line Chart 72 crucibleGiga172Instance
0	Active Interfaces	Max Packet D Week	rop Rate Seen (%) - Last	dc3esgpu01	eno12419	b4:83:51:0b:b3:f6	0	0	Modified	4 days ago
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	0.5		900M 600M 300M			18 Nov 19 Nov Metric: Out P95	20 Nov 21 Nov 22 Nov 23	Nov 24 Nov 25 Nov	Max Re-Transmit Rate Viz type Dataset crucible_gigaT Modified	Big Number with Trendline 72_crucibleGigs172Instance 17 days ago

3. For more information, see <u>https://docs.preset.io/docs/creating-a-dashboard</u>.

**TIP**: To watch a related video, see <u>https://superset.apache.org/docs/using-superset/creating-your-</u><u>first-dashboard/</u>.

#### Viewing and Customizing Skylar Analytics Charts

A **chart** in Skylar Analytics works much like a "widget" in SL1, in that a chart in Skylar Analytics is a building block that makes up a dashboard, and a dashboard can contain many charts.

**TIP**: On the **Dashboards** tab in Skylar Analytics, the "Visualization Variety Testing (Sample)" dashboard contains a variety of chart visualizations related to file system utilization, including a table, a "big number" with a line graph, a gauge, a set of tree maps, and a sunburst map. You can use this dashboard to see how these different types of charts might work for your data.

For more information about the types of charts you can use in a Skylar Analytics dashboard, see <a href="https://docs.preset.io/docs/chart-walkthroughs">https://docs.preset.io/docs/chart-walkthroughs</a>.

#### Working with Skylar Analytics Charts

To create or customize a chart:

- 1. Select the chart from the **Charts** page, or edit the chart from an existing dashboard. If you are creating a new chart, click the **[+Chart]** button on the **Charts** page.
- 2. On the Chart page, click [Edit Chart]. The Edit Chart page appears:

skylar%analytics Home E	)ashboa	rds Charts Datasets SQL *		+ • Settings •
Filesystem Utilization	Gaug	e (MAX) 🖄 🛱 Added to 2 dashboards 🖇	Skylar Admin 🖉 17 days ago	SAVE
Chart Source	le-	DATA CUSTOMIZE		10 rows 08:08:08.59
crucible_giga172_crucible	-	💟 GAUGE CHART 🗠 🕍 📾 4k 🕑	50	
Search Metrics & Columns		View all charts	40	
Metrics	^	Query ^	30	
Showing 1 of 1		DIMENSIONS ()		
∫(x) COUNT(*) []		× abc dvc_nme >	20	
		× abc fs_nme >		
Columns	^	+ Drop columns here or click		
Showing 22 of 22		METRIC	10	
③ fsstat_ts		× fix) MAX(fsstat_used_pct) >		
# fsstat_used_mib_psec_p95d1		FILTERS		
# fsstat_used_mib_psec_p95h1		× 2024-11-24T19:13:37 ≤ fsstat_ts < 20 >	0	
# fsstat_used_pct_psec_p95d1	н	+ Drop columns/metrics here or click		
# fsstat_used_pct_psec_p95h1			dvc_nme: JKECK-10.100.100.241-DC, fs_nme: /	
# fsstat_used_mib_p95d1		10	32%	
# fsstat_used_mib_p95h1				
# fsstat_used_pct_p95d1		SORT BY METRIC	dvc_nme: JKECK-10.100.100.241-DC, fs_nme: /data.local/db	
# fsstat_used_pct_p95h1			20%	
# dvc_id			dvc nme: JKECK-10.100.100.241-DC, fs nme: /var/lib	
# fs_id			100/	
# fsstat_used_mib_psec			1876	
# fsstat_used_pct_psec			1 1.6 64.7 11.66	
# fsstat_used_mib			RESULTS SAMPLES	~
# fsstat_del_sec		UPDATE CHART		

3. You can drag and drop **Metrics** and **Columns** into the **Query** panel to configure your visualization. For more information, see https://docs.preset.io/docs/creating-a-chart.

#### Additional Tips for Creating and Customizing Charts

Each data type includes a small icon that conveys its type:

- **f**: Function used for metrics
- Clock: The time column for the data source
- ABC: Text data
- #: Numeric value data

#### Viewing Skylar Analytics Datasets

**Datasets** are curated representations of the data in your database that let you quickly create dashboards and charts in Skylar Analytics. These dashboards and charts are based on the metrics stored in the datasets. In Skylar Analytics, each dataset contains a set of related metrics, such as server reports, which you can use to build a custom dashboard or chart or to enhance an existing dashboard or chart.

You will not need to create new datasets for Skylar Advisor.

## Data Exploration: Exporting Data from Skylar AI

You can use the optional Data Exploration component of Skylar Analytics to enable Open Database Connectivity (ODBC) to connect Skylar AI data with third-party tools like Grafana, Power BI, Tableau, Cognos, Crystal Reports, SAP, Excel, and other business intelligence applications.

Data Exploration lets you view Skylar AI data alongside other business sources, offering a holistic perspective on your operations.

#### Configuring Skylar Analytics Data Exploration with Power BI

This section covers how to set up an ODBC connection for Skylar Analytics so you can use it with Power BI for data visualization. Other business intelligence applications will use a similar process to integrate with Skylar Analytics.

To install and configure the ODBC connection:

- 1. Go to the **ClickHouse ODBC driver releases** page at <u>https://github.com/ClickHouse/clickhouse-odbc/releases</u>.
- 2. Download the relevant version for your operating system.
- 3. Open the ODBC Data Source Administrator application.
- 4. On the [User DSN] tab, click [Add]. The Create New Data Source dialog appears:

	Name	Versi
	Click House ODBC Driver (ANSI)	1.03
0110	Click House ODBC Driver (Unicode)	1.03
	Microsoft Access dBASE Driver (*.dbf, *.ndx, *.mdx)	16.0
	Microsoft Access Driver (*.mdb, *.accdb)	16.0
	Microsoft Access Text Driver (*.txt, *.csv)	16.0
	Microsoft Excel Driver (*xls, *xlsx, *xlsm, *xlsb)	16.0
	SQL Server	10.0
	<	>

5. Select ClickHouse ODBC (Unicode) and click [Finish]. The Create data source for Clickhouse dialog appears:

Create data source for ClickHouse							
Name:	Mom36 ClickHouse						
Description:							
URL:							
	Or						
Host:	dv-crucible-mom36-odbc.stag						
Port:	443						
Database:							
SSLMode:	require						
User:	dataviz						
Password:	•••••						
Timeout:							
Cancel	Ok						

- 6. Complete the following fields with ODBC connection details from ScienceLogic SRE:
  - Name: Add a name to identify this connection. This will be used later in the BI tools.
  - Host: Specify the host URL, provided by SRE.
  - **Port**: 443.
  - Database: Leave blank.
  - SSLMode: Type the word "require".
  - User: dataviz
  - **Password**: Specify the password, provided by SRE.

To connect your BI tool, such as the Power BI Desktop:

- 1. Launch the Power BI Desktop and click [Blank Report].
- 2. Click Get data from another source, select Other, and then select ODBC.
- 3. Click [Connect].

- 4. In the pop-up window, click the drop-down menu and select the ODBC connection you just created in the previous procedure.
- 5. Click **[OK]**.
- 6. If prompted, re-enter your username and password, and then click [Connect].
- 7. After you are connected, a menu will appear displaying available datasets, which you can use to create dashboards in your BI tool:



To import data and create a dashboard with Skylar AI data in Power BI:

- **TIP**: When selecting datasets to import, choose only the necessary tables to optimize performance. The following procedure creates a sample dashboard in Power BI.
- 1. On the **Home** screen of the Power BI Desktop, click **[New Visual]**.
- 2. Select a Line Chart as an example.
- 3. To configure the X-Axis, expand the **fsstattab** dataset from the right-hand Data Column.
- 4. Drag **fsstat ts** (Timestamp) to the X-Axis in the **Visualizations** panel.

5. Remove the options for Year, Quarter, and Month, keeping only Day:



- 6. To configure the Y-Axis, drag **fsstat\_used\_pct\_psec** (Used Percentage Per Second) to the Y-Axis.
- 7. To customize the data fields, click the drop-down arrow next to the selected data field. You can rename the field or modify how the value is calculated:



8. Continue adding additional charts and visuals as needed to finish up your dashboard.

# Additional Resources for Skylar Analytics (Apache Superset Training)

This section has been provided as an independent study guide to help you identify and develop basic knowledge and skills to build data visualizations within Skylar Analytics user interface.

**NOTE:** Because ScienceLogic does not own the underlying framework for the Data Visualization and Data Exploration components, ScienceLogic is not responsible for maintaining or updating documentation for third-party open-source software, including Apache Superset.

Apache Superset-related documentation: https://superset.apache.org/docs/intro

ScienceLogic recommends the following resources for a deeper understanding of Apache Superset:

- https://www.udemy.com/course/apache-superset-for-data-engineers-hands-on/
- https://www.youtube.com/watch?v=znnmco3eK-M&list=PLzRV ObjEwmNhRjhMNcvcDP7ZDjOXtodd
- https://superset.apache.org/community

## Chapter



## **Skylar Analytics: Anomaly Detection**

#### Overview

The Anomaly Detection component of *Skylar Analytics* uses Skylar AI to identify unusual patterns that do not conform to expected behavior. Anomaly Detection provides always-on, unsupervised, machine-learning-based monitoring that automatically identifies unusual patterns in the real-time performance metrics and resource data that it observes.

Anomalies do not necessarily represent problems or events to be concerned about; rather, they represent unexpected behavior that might require further investigation.

You can configure anomaly alerts on the **Anomaly Detection** page of SL1, from a link on the Skylar Al page. You can also view anomalies on the **[Anomaly Detection]** tab on the **Device Investigator** page for each device, as well as corresponding **Service Investigator** pages.

**NOTE:** Anomaly Detection with Skylar Analytics works with all of the Performance Dynamic Applications in all SL1 PowerPacks.

This chapter covers the following topics:

What is Anomaly Detection?	. 22
Viewing Graphs and Data for Anomaly Detection	. 23
Enabling Anomaly Detection Events for Specific Metrics	25
Creating an Event Policy for Anomalies	. 27
Using Anomaly-related Events to Trigger Automated Run Book Actions	28

### What is Anomaly Detection?

**Anomaly detection** is a technique that uses machine learning to identify unusual patterns that do not conform to expected behavior. Anomaly detection provides always-on, unsupervised machine learning-based monitoring that automatically identifies unusual patterns in the real-time performance metrics and resource data that it observes.

Anomalies do not necessarily represent problems or events to be concerned about; rather, they represent unexpected behavior that might require further investigation.

Anomaly detection is calculated and displayed in the SL1 user interface for all Performance Dynamic Applications. This detection is enabled by default and cannot be disabled. You can control which device data gets sent to Skylar for analysis based on the organization aligned with the device or devices. All devices in the selected organization will get anomaly detection analysis.

For more information, see Enabling Skylar Analytics for One or More SL1 Organizations.

You can view a list of all devices that have metrics being monitored for anomalies on the **Anomaly Detection** page in SL1 (Skylar AI (\*) > [Visit] button for Skylar Anomaly Detection):

≡	Anomaly D	Detection				⑦ Help	Activity em7admin 🗸	ScienceL	ogic
命	Q, Type to	o search devices						=	٥
08									a •
		Device Name	Metric Type $\psi$	ML Enabled By U	Last Modified	Class	Category	Anomaly Count	
		Filter				Filter	Filter		
		SF-AIO-CLEONARD-1022321	Support: PT-DiskStats - Percent Busy Time - sda	em7admin	Oct 18, 2024, 2:10 AM	Linux Red Hat Enterprise	System.EM7		- :
3		SF-AIO-SINDE-1022323	Support: PT-DiskStats - Average MB Written/Sec - sda	em7admin	Oct 18, 2024, 2:10 AM	Linux Red Hat Enterprise	System.EM7		- E
		panderp-aio-ggroves-1022322	Host Resource: Storage - Storage Used - /var	em7admin	Oct 18, 2024, 2:10 AM	ScienceLogic, Inc. EM7 Data Collector	System.EM7		- 8
습	0 7	<table-row> pandas-aio-rparris-1022325</table-row>	EM7: DRBD Status Performance - Disk Read	em7admin	Oct 18, 2024, 2:10 AM	Linux Red Hat Enterprise	System.EM7		- 1
		🔁 pandas-aio-Ibijeau-1022324	-	-	-	Linux Red Hat Enterprise	System.EM7		- 1
5		Sdb-test-db-1022326	-	-	-	ScienceLogic, Inc. EM7 Database	System.EM7		- 1
		SF-AIO-MHASSELBERG-1022327	-	-	-	Linux Red Hat Enterprise	System.EM7		- 8
		<table-row> sdb-dist-ap-1022370</table-row>	-	-	-	ScienceLogic, Inc. EM7 Admin Portal	System.EM7		- 1
		SF-GM-TEAM-1022330	-	-	-	Linux Red Hat Enterprise	System.EM7		- :
ß		<table-row> sdb-dist-db-1022371</table-row>	-	-	-	ScienceLogic, Inc. EM7 Database	System.EM7		- 1
		D SF-AIO-TEAM-1022331	-	-	-	Linux Red Hat Enterprise	System.EM7		- :
		sdb-dist-cu-1022372	-	-	-	ScienceLogic, Inc. EM7 Data Collector	System.EM7		- 8
		Diana mud-aio-1022375	-	-	-	Linux Red Hat Enterprise	System.EM7		- :
		<table-row> sdb-aio-1022374</table-row>	-	-	-	Linux Red Hat Enterprise	System.EM7		- 1
		🔁 pandas-aio-testextra-1022377	-	-	-	Linux Red Hat Enterprise	System.EM7		- :
		MOSS-AIO-3-40	-	-	-	Linux Red Hat Enterprise	System.EM7		- E
		🔁 sdb-aio-team-1022378	-	-	-	Linux Red Hat Enterprise	System.EM7		- :
		noss-dist-3-41	-	-	-	ScienceLogic, Inc. EM7 Admin Portal	System.EM7		- 1
		<table-row> sdb-aio-team-1022379</table-row>	-	-	-	Linux Red Hat Enterprise	System.EM7		- :
		Diss-dist-3-44	-	-	-	ScienceLogic, Inc. EM7 Data Collector	System.EM7		- E
		TMOSS-DIST-3-43	-	-	-	ScienceLogic, Inc. EM7 Data Collector	System.EM7		- :
		MOSS-DIST-3-46	-	-	-	ScienceLogic, Inc. EM7 Database	System.EM7		- 1
		PMOSS-DIST-3-45	-	-	-	ScienceLogic, Inc. EM7 Message Collector	System.EM7		- :
		MICC.A10.2.40	-	_	-	Linux Red Hat Enternrise	Suctem FM7		_ 1
								1 4005 L @ 0004.5	· · · · ·

## Viewing Graphs and Data for Anomaly Detection

After SL1 begins performing anomaly detection for a device, you can view graphs and data about each anomaly. Graphs for anomalies appear on the following pages in SL1:

- The Anomaly Detection page (Skylar Al (\*) > [Visit] button for Skylar Anomaly Detection).
- The [Anomaly Detection] tab in the Device Investigator.
- The Anomalies tab in the Service Investigator for a business, IT, or device service.

You can view the anomaly detection graphs for the metrics by clicking the **Open** icon (2) next to the metric for the device. The **Anomaly Chart** modal appears, displaying the "Anomaly Score" chart above the chart for the specified metric you are monitoring.

The "Anomaly Score" chart displays a graph of values from 0 to 100 that represent how far the real data for a metric diverges from its normal patterns. The lines in the chart are color-coded by the severity level of the event that gets triggered as the data diverges further. The anomaly score is basically a running sum over a small window of time, so after anomalies stop, the score will drop to zero over that time.

You can define the thresholds for the "Anomaly Score" chart, and whether those values generate alerts, on the **Anomaly Detection Thresholds** page (Skylar Al (\*) > [Advanced: Adjust Thresholds] button). For more information, see *Enabling Alerts and Thresholds for the Anomaly Chart*.



The second graph displays the following data:

- A blue band representing the range of probable values that SL1 expected for the device metric.
- A green line representing the actual value for the device metric.
- A red dot indicating anomalies where the actual value appears outside of the expected value range.

You can hover over a value in one of the charts to see a pop-up box with the **Expected Range** and the metric value. The **Anomaly Score** value also displays in the pop-up box, with the severity in parentheses: Normal, Low, Medium, High, or Very High.

You can zoom in on a shorter time frame by clicking and dragging your mouse over the part of the chart representing that time frame, and you can return to the original time span by clicking the **[Reset zoom]** button.

#### Enabling Alerts and Thresholds for the Anomaly Chart

You can define the thresholds for the "Anomaly Score" chart on the **Anomaly Chart** modal, and whether those values generate alerts, on the **Anomaly Detection Thresholds** page (Skylar Al (\*) > [Advanced: Adjust Thresholds] button).

≡	Thresholds	⑦ Help	🔦 Activity	em7admin ~ ScienceLogic
ଜ	Anomaly Detection Thresholds			Edit
88	Enable alerts and set thresholds for Anomaly Score.			
▲				
GI	^ Low			
æ	Enabled greater than or equal to 20			
\$	∧ Medium			
****	Enabled 🗹			
Ø	greater than or equal to 40			
	∧ High			
	Enabled 🗹			
	greater than or equal to <b>60</b>			
	∧ Very High			
	Enabled 🗹			
	greater than or equal to 80			
			AP2   Versior	12.3.0 (i)   Build 4127   © 2024 ScienceLogic

You can view the alert levels when you hover over a value in one of the charts on the **Anomaly Chart** modal. The Anomaly Score severity level displays after the index value, in parentheses: Normal, Low, Medium, High, or Very High:



**NOTE:** An Anomaly Score severity level of Normal is assigned to a value in the chart that is *lower* than the lowest enabled alert level. For example, if the threshold for the Low severity is enabled and set to 20 or higher, an Anomaly Score of 16 would have a severity level of Normal.

To edit the Anomaly Score thresholds:

- 1. On the Anomaly Detection Thresholds page, click [Edit].
- 2. For each of the four severity levels, from Low to Very High, you can select **Enabled** to have SL1 generate an alert when the Anomaly value for a metric is equal to or greater than the threshold for that severity level.
- 3. You can edit the threshold value for each level if SL1 is generating too many (or not enough) anomalies of a certain severity level.
- 4. For example, if you want to enable a Low level alert when the Anomaly Score value is between 25 and 39, you would go to the **Low** panel, select **Enabled**, and update the value from "20" to "25".
- 5. Click [Save].
- 6. You can then edit an event policy that uses alerts based on the settings on this page to generate events in SL1. For more information, see Creating an Event Policy for Anomalies.

#### **Enabling Anomaly Detection Events for Specific Metrics**

You can set up anomaly detection events for specific metrics for devices and business services so that event policies are triggered when an anomaly is detected for that metric.

#### Enabling Anomaly Detection Events for a Metric on the Device Investigator Page

To enable anomaly detection events for a metric on the **Device Investigator** page:

1. On the **Devices** page (I), click the **Device Name** for the device on which you want to enable anomaly detection events. The **[Anomaly Detection]** tab for **Device Investigator** displays.

TIP: If the [Anomaly Detection] tab does not already appear on the Device Investigator, click the More drop-down menu and select it from the list of tab options.

- 2. On the **[Anomaly Detection]** tab, click the **Actions** icon (‡) for any of the listed metrics and select *Enable*. The **Select Available Metrics** modal appears.
- 3. In the **Select Metric** drop-down, click the name of the metric on which you want to enable anomaly detection events for the device.
- 4. For some metrics, a second drop-down field might display that enables you to specify the device directory. If this field appears, click the name of the directory on which you want to enable anomaly detection.
- 5. Click **[Enable]**. That metric is enabled for events for that device.

**TIP**: To disable anomaly detection events for a metric, click the **Actions** icon (‡) for that metric and select Disable.

#### Enabling Anomaly Detection Events for a Metric on the Service Investigator Page

On the **[Anomaly Detection]** tab on a **Service Investigator** page, you can enable anomaly detection events for additional metrics or disable anomaly detection metric events on which it is currently enabled.

**NOTE:** The **[Anomaly Detection]** tab appears only if you have at least one device in the selected service that has anomaly detection enabled.

To enable anomaly detection events for a metric on the **Service Investigator** page:

- 1. On the **Business Services** page (<sup>(a)</sup>), select a service from the list of business, IT, and device services by clicking its name. The **Service Investigator** displays.
- 2. On the Service Investigator page, click the [Anomaly Detection] tab.
- 3. On the **[Anomaly Detection]** tab, click the **Actions** icon (‡) for any of the listed metrics and select *Enable*. The **Select Available Metrics** modal appears.

- 4. In the **Select Metric** drop-down, click the name of the metric on which you want to enable anomaly detection events for the device.
- 5. For some metrics, a second drop-down field might display that enables you to specify the device directory. If this field appears, click the name of the directory on which you want to enable anomaly detection .
- 6. Click [Enable].
- **TIP**: To disable anomaly detection for a metric, click the **Actions** icon (‡) for that metric and select Disable. The metric is removed from the **[Anomaly Detection]** tab.

#### Creating an Event Policy for Anomalies

You can create additional event policies that will trigger events in SL1 when anomalies are detected for those devices.

**TIP**: Because anomalies do not always correspond to problems, ScienceLogic recommends creating an event policy only for scenarios where anomalies appear to be correlated with some other behavior that you cannot otherwise track using an event or alert.

**NOTE:** Because the anomaly detection model is constantly being refined as SL1 collects more data, you might experience a larger number of anomaly-related events if you create an event policy for anomalies soon after enabling anomaly detection compared to if you were to do so after SL1 has had an opportunity to learn more about the device metric's data patterns.

To create an event policy for anomalies:

- 1. Go to the **Event Policies** page (Events > Event Policies, or Registry > Events > Event Manager in the classic SL1 user interface).
- 2. On the **Event Policies** page, click the **[Create Event Policy]** button. The **Event Policy Editor** page appears.
- 3. In the **Policy Name** field, type a name for the new event policy.
- 4. Click the [Match Logic] tab.
- 5. In the **Event Source** field, select Internal.
- 6. In the Match Criteria field, click the [Select Link-Message] button.
- 7. In the Link-Message modal page, search for "Anomaly" to locate the message "Anomaly Detected: %V":

=				🗙 Activity Em7admin ~ 🗊 ScienceLogic
88	Policy Name	Enable Event Policy		Cancel Save
	Policy Descrip	Link-Message		×
i t	Event Source	Q Type to search internalMessages		≡ ♦
<b>(</b> )	MATCH CRITERIA	ф <sub>ID</sub>	MESSAGE	
000 0000	Link-Message 1770: Anomaly	<ul> <li>770</li> </ul>	Anomaly Detected: %V	Select
			Multi Match	

- 8. Click the radio button for the message "Anomaly Detected: %V", and then click [Select].
- Complete the remaining fields and tabs in the Event Policy Editor based on the specific parameters that you want to establish for the event. For more information about the fields and tabs in the Event Policy Editor, see Defining an Event Policy.
- 10. To enable the event policy, click the **Enable Event Policy** toggle so that it is in the "on" position.
- 11. When you are finished entering all of the necessary information into the event policy, click [Save].

#### Using Anomaly-related Events to Trigger Automated Run Book Actions

SL1 includes automation features that allow you to define specific event conditions and the actions you want SL1 to execute when those event conditions are met. You can use these features to trigger automated run book actions whenever an anomaly-related event is generated in SL1.

To use anomaly-related events to trigger automated run book actions:

- 1. Go to the Automation Policy Manager page (Registry > Run Book > Automation).
- 2. Click the [Create] button. The Automation Policy Editor page appears:

utomation Policy Editor   Creating No	ew Automation Po	licy				Reset
Policy Name Anomaly High Criteria Logic [Severity >=] ∨ ] [Minor,] ∨ [and Z minutes has elapsed] ∨ [since the first occurrence,] ∨ [and event is NOT cleared] ∨ and all times are valid ∨	Policy Type [Active Events] Match Logic [Text search] ~ Repea [Only once] Include events for	e ventities oth	Policy Sta [Enabled]	Policy Pri [Default Match Synta [Devices] ces (organizatio	ority Organi ] Sample ix Align With ons, assets, etc.)	ization ,
Trigger on Child Rollup						
Sample AWS: Service: test ScienceLogic, Inc.: EM7 Data Collector: mrk ScienceLogic, Inc.: EM7 Data Collector: mrk System	tng-dc1 tng-dc2	(All devic » «	es)			
Available Events		Aligned B	Events			
anom [1768] Critical: Anomaly Score Critical - ner [18] Minor: Anomaly Score Minor [17] Notice: Anomaly Score Notice	w york	[20] Crii [19] Ma	tical: Anoma jor: Anomaly	ly Score Critica / Score Major	1	
Available Actions		Aligned	Actions			
SNMP Trap [1]: SL1 Event Trap Snippet [5]: Automation Utilities: Calculate	Memory Size for Ea	» «				1

- 3. In the **Policy State** field, select Enabled.
- 4. In the **Available Events** field, search for and select an anomaly-related event policy, and then click the right-arrow icon to move it to the **Aligned Events** field. For more information about anomaly-related events, see **Creating an Event Policy for Anomalies**.
- 5. Complete the remaining fields on the **Automation Policy Editor** page based on the specific parameters that you want to establish for the automation policy. For more information about the fields on the **Automation Policy Editor** page, see **Automation Policies**.
- 6. When you are finished, click [Save].

# Chapter

# 4

## **Skylar Analytics: Predictive Alerting**

#### Overview

The Predictive Alerting component of Skylar Analytics helps to avoid problems such as file systems running out of space, hosts running out of memory, or issues with network reliability due to oversubscription. The alerts are generated in advance of the problem and can provide days, weeks, or months of notice depending upon the conditions.

For this release, the Predictive Alerting component monitors file systems (SNMP, PowerShell, SSH) and network interfaces (utilization, errors, discards).

This chapter covers the following topics:

Nhat is Predictive Alerting?	31
/iewing Predictive Alerts in SL1	31

## What is Predictive Alerting?

Predictive alerts help to avoid problems such as file systems running out of space, hosts running out of memory, or issues with network reliability due to oversubscription. The alerts are generated in advance of the problem and can provide days, weeks, or months of notice depending upon the conditions.

## Viewing Predictive Alerts in SL1

When your SL1 system is connected to Skylar AI, you can start viewing predictive alerts in SL1. No additional configuration is needed.

Predictive alerts display the Skylar icon (\*) to the left of the event message in the **Message** column of the **Events** page, and the message starts with the word "Prediction":

≡	Event												⑦ Help	🔦 Activit	y docs 🗸 💲	cienceL	ogic
命	Tota	al Eve	nts: <b>71 (</b>	Critical: 23	Major: 16	Minor: 15 Notice: 16 Healthy	:1 View	All									View
	Q	Type to	search ever													=	•
88																	
															© R	efresh: 5 Minutes	× 🗘
213			Organiz	Severity	Name	Message	Last Det	Age	Ticket ID	Count	Event Ty	Event N	Masked Events	Event So	Acknowledge	Clear	
G)			Filter	Filter 👻	Filter	Filter	Filter					Filter		F 🔻			
		7	Sample	Critical	mrktng-dc2	Host Resource: Storage Utilization (/var/log) of type Hr	Oct 8, 2024,	1 month 18 (	-	14274	Device	÷		Dynamic	<ul> <li>Acknowledge</li> </ul>	X Clear	:
ė		7	System	Critical	JKECK-10.1	Host Resource: Storage Utilization (/var/tmp) of type H	Oct 8, 2024,	1 day 22 hou	-	561	Device	Ð		Dynamic	Acknowledge	X Clear	:
			System	Critical	ISR-4331-R1	Fan problem, Fan (Fan 1 Critical) state: shutdown	Oct 8, 2024,	2 months 7 c	-	3310	Device	Ð	84	Dynamic	<ul> <li>Acknowledge</li> </ul>	X Clear	
\$		7	System	Critical	4948-5W-0.	Power supply problem, Power supply (Power Supply 1)	Oct 8, 2024,	2 months 2 c	-	3055	Device	±	040 Dh	Dynamic	Acknowledge	X Clear	:
		7	Sample	Critical	mrktng-dc2	/var/log: File system usage exceeded critical threshold:	Oct 8, 2024,	1 month 18 c	_	4732	Device	Ē	040	Internal	Acknowledge	X Clear	
		7	System	Critical	JKECK-10.1	/var/tmp: File system usage exceeded critical threshold	Oct 8, 2024,	1 day 22 hou	-	184	Device	F1		Internal	Acknowledge	) X Clear	
		7	System	Critical	JKECK-10.1	Prediction: File System JKECK-10.100.100.241-D	Oct 5, 2024,	2 days 9 hou	-	1	Device	÷		Skylar AI	<ul> <li>Acknowledge</li> </ul>	X Clear	÷
Ø		7	System	Critical	JKECK-10.1	Prediction: File System JKECK-10.100.100.241-D	Oct 4, 2024,	3 days 19 ho	-	1	Device	(±		Skylar Al	<ul> <li>Acknowledge</li> </ul>	X Clear	
		7	System	Critical	xdemo-vc1-c	Prediction: CPU Utilization will reach 100% in 5 da	Oct 1, 2024,	6 days 9 hou	-	1	Device	Ð		Skylar Al	<ul> <li>Acknowledge</li> </ul>	X Clear	- 1
		7	System	Critical	JKECK-10.1	Prediction: File System JKECK-10.100.100.241-D	Oct 1, 2024,	6 days 13 ho	-	1	Device	Ð		Skylar Al	<ul> <li>Acknowledge</li> </ul>	X Clear	
		7	System	Critical	JKECK-10.1	Prediction: File System JKECK-10.100.100.241-D	Oct 1, 2024,	6 days 13 ho	-	1	Device	÷		Skylar Al	<ul> <li>Acknowledge</li> </ul>	X Clear	
			System	Critical	linux-web02	Prediction: CPU Utilization will reach 100% in 3 da	Sep 30, 2024	7 days 9 hou	-	1	Device	Ð		Skylar Al	<ul> <li>Acknowledge</li> </ul>	X Clear	
		7	System	Critical	linux-web02	<ul> <li>Prediction: CPU Utilization will reach 100% in 3 da</li> <li>Prediction: CPU Utilization will reach 100% in 4 da</li> </ul>	Sep 30, 2024	7 days 11 ho	-	1	Device	±		Skylar Al	Acknowledge	X Clear	
		7	System	Critical	skylar-ai-der	Prediction: File System skylar-ai-demo:/home will	Sep 30, 2024	10 days 10 hb	_	1	Device	E		Skylar Al	Acknowledge	* Clear	
		7	System	Critical	JKECK-10.1	Prediction: File System JKECK-10.100.100.241-D	Sep 27, 2024	10 days 15 h	-	1	Device	F <sup>a</sup>		Skylar Al	✓ Acknowledge	X Clear	
		7	Sample	Critical	mrktng-dc2	Prediction: File System mrktng-dc2:/var/log will re	Sep 27, 2024	10 days 15 h	-	1	Device	Ð		Skylar Al	<ul> <li>Acknowledge</li> </ul>	X Clear	
		7	System	Critical	JKECK-10.1	Prediction: File System JKECK-10.100.100.241-D	Sep 23, 2024	14 days 22 h	-	1	Device	÷		Skylar AI	Acknowledge	) X Clear	
																Total R	ows: 71
													AP2	2   Version 1	2.2.2 (i)   Build 1	.877   © 2024 Sc	lenceLogic

To view details about a predictive alert:

- 1. On the **Events** page, click the message for a predictive alert with the Skylar icon (\*). The **Event Investigator** page for that alert appears.
- 2. On the **Event Investigator** page, the **Skylar Analytics Summary** panel displays a timeline of data from Skylar AI about a specific metric:

≡	vents            Image: Weight of the second
命	Event Overview Acknowledge X Clear :
88	EVENT MESSAGE
	Prediction: File System JKECK-10.100.100.241-DC;/var will reach 100% in 3 days.
G	Organization         Device Name         Severity         Event fyre         Event Source         First Objected         Occurrence Count         Last Detected         Event 10         Event 10         Event 10         Event 10           System         JKECK-10.100.100.241-DC         Critical         Device         Skylar AI         3 days 20 hours         1         3 days 20 hours         5 2919         Sternal Ticket ID
¢	\$ Skylar Analytics Summary
\$	FILE SYSTEM UTILIZATION (%) Threshold: 100%
	80%
Ø	60% 40% 20% 56p 03 56p 06 56p 07 56p 08 56p 09 56p 10 56p 11 56p 12 56p 13 56p 14 56p 15 56p 16 56p 17 56p 18 56p 20 56p 21 56p 22 56p 23 56p 24 56p 25 56p 26 56p 27 56p 28 56p 20 0.00 0.00 0.00 0.00 0.00 0.00 0.00
	Threshold - Observed - Predicted - Breached
	Event Policy Information
	EVENT POLICY NAME EVENT POLICY DESCRIPTION
	AP2   Version 12.2.2 ①   Build 1877   © 2024 ScienceLogic

The dotted line on the graph in the **Skylar Analytics Summary** panel represents a time frame in the future that Skylar Al is forecasting, based on pattern recognition.

The blue line represents the activity observed so far by SL1, and the gray dotted line represents the threshold set in SL1. The blue dotted line represents where Skylar Al is predicting a potential alert in the future, with the gray line representing a potential problem in the future, also predicted by Skylar Al.

In the example above, Skylar AI predicts that the file system utilization will hit the threshold of 100% in three days, on October 7th. By tracking the timeline on the graph, you can see when a potential event might happen, and you can take action now to prevent it.

In addition, if you have an event policy monitoring a metric that is now being tracked by Predictive Alerting, you can disable that event policy.

**NOTE**: Because the data for the chart on the **Skylar Analytics Summary** panel is coming from Skylar Al, you will not be able to use that data in an SL1 dashboard. Also, this chart is rendered at prediction time and is static, so that when opening an event, you can see the state and prediction at the time of prediction.

**TIP**: If the graph in the **Skylar Analytics Summary** panel does not load, open the **/opt/em7/nextui/nextui.conf** file and make sure the following line is included in the file: GQL USE AI EVENT VISUALIZATIONS=enabled

You can also review the logs for a specific device to view the history of the predictions:

- 1. On the **Devices** page or the **Events** page, select the device with the predictive alerts. The Device Investigator page for that device appears.
- 2. Click the **[Logs]** tab. A list of recent logs displays:

≡	Devices															🕐 Help	Activity	docs	~ Sci	enceLo	ogic
ŵ	☆	SL mrktng-d	lc2	Info													Re	port	Tools	Edit	
88	olds	Processes	Software	Ports I	Map 1	Fickets	Services	Notes	Redire	ects	Schedule	Relations	ships	Journals	Attribute	s Anon	naly Detecti	on	Logs	Q Mor	ne 🗸
▲	Q, Typ	pe to search device log	35															6		=	٥
G																			C Refres	h: 1 Minute	~ <b>o</b>
æ	Date/Tir	ne	Source		Event ID		Severity			Syslog Ser	verity	Message									
	Filter		Filter	*	Filter		Filter		*	·		prediction									×
\$	Nov 17, 3	2024, 9:17 PM	AlEngine			89455	Minor			-		Prediction: CPU Util	ilization will rea	ach 100% in 18 da	ns.						
	Nov 14, 3	2024, 9:21 PM	AlEngine			89455	89455 OMinor		-			Prediction: CPU Utilization will reach 100% in 17 days.									
	Nov 13, 3	2024, 9:18 PM	AlEngine			89455	Minor	inor		-		Prediction: CPU Utilization will reach 100% in 18 days.									
	Nov 12, 3	2024, 9:19 PM	AlEngine		89455		Minor		-			Prediction: CPU Utilization will reach 100% in 19 days.									
$\square$	Nov 11,3	2024, 9:20 PM	AlEngine		89455		Minor			-		Prediction: CPU Utilization will reach 100% in 18 days.									
	Nov 9, 21	024, 9:17 PM	AlEngine			93091	Notice			-		Prediction: CPU Ubl	lization will rea	sach 100% in 29 dar	a.						
	Nov 0, 21	024, 9:20 PM	AlEngine		93091 Notice			-				Prediction: CPO Oblization will reach 100% in 26 days.									
	Nev 4 2	024,9-22,954	AlEngine									Prediction: CPUI Hilitation will each 100% in 11 days									
	Nov 4, 21	024 7:35 PM	AlEngine			93939	Notice		- Predictio			Prediction: File System mrktng-dc2:/ will reach 100% in 28 days									
	Nov 3, 21	024, 9:28 PM	AlEngine			93091	Notice -					Prediction: CPU Utilization will reach 100% in 20 days.									
																AF	12   Version 12	20.01	Total	Rows: 11 of	10476

3. If needed, type "prediction" in the *Message* column to view only the predictive alerts.

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