Page Title: anomaly-metric-explorer

On this page

Anomaly Detection in Metric Explorer

Overview

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Anomaly detection is a powerful tool in the Metric Explorer that allows users to identify and investigate anomalous behavior or deviations from expected patterns in their metrics. By leveraging sophisticated algorithms and anomaly policies, the Metric Explorer automatically detects anomalies in metric values, highlighting them for further analysis.

The concept behind the anomaly detection feature involves analyzing historical metric data and identifying points that significantly deviate from the expected behavior. This can help users identify critical events, performance bottlenecks, or system failures that may have occurred within their infrastructure. By proactively detecting anomalies, users can swiftly address potential issues, minimize downtime, and ensure optimal performance.

Use-Case

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Let us suppose that you are

comparing a metric's value with its past values

to understand any infrastructural behaviour changes that you might have noticed recently. While doing so you feel the need to check if the current values of the metric is behaving normally or if it is showing anomalous behaviour, then you can use the anomaly metric explorer option to do so.

Some of the many use-cases for anomaly detection in metric explorer include the following:

Network Security: Anomaly detection can help identify unusual network traffic patterns, indicating potential security breaches or malicious activities.

Server Performance: Detecting anomalies in CPU, memory, or disk usage can help pinpoint performance issues, such as spikes in resource consumption or memory leaks.

Application Monitoring: Monitoring application metrics, such as response time or error rate, can reveal anomalies that indicate performance degradation or anomalies caused by bugs or coding errors.

Utilizing the Metric Explorer as a playground for metric analysis empowers users to take a deep dive into the intricacies of their metrics, spot anomalies, and uncover performance trends that might have otherwise gone unnoticed. It develops a proactive and exploratory approach to infrastructure management, enabling users to harness the full potential of their metrics and extract meaningful insights that drive operational excellence.

Navigation

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Go to Menu, Select

Metric Explorer

. The Metric Explorer Screen is displayed.

Detecting Anomaly

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Add the metric trend to the metric explorer for which you want to find the anomalous behaviour. After adding the metric to the metric explorer, click on

.

Select

Anomaly

to display the screen showing anomalous behaviour.

The Metric Explorer will apply anomaly detection to the selected metric and visually indicate any detected anomalies on the trend graph. You can hover over the anomaly points to view detailed information about the anomaly, such as the time and value of the anomalous metric value.

Page Title: Comparing%20Metric%20Value%20with%20its%20Past%20Values

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Comparing Metric Value with its Past Values

Overview

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Suppose you notice a spike in the CPU percentage values of an EC2 instance at a specific time and want to compare it with its values from a previous time interval to determine if the spike was abnormally high. Compare past and present metric values effortlessly using Motadata AIOps' powerful Metric Comparison feature.

Navigation

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Drag and drop the metric, CPU percentage in this case, for which you want to view the current values and compare it with the past values. After adding the metric to the metric explorer, click on

.

Now, Select

Compare

to start the comparison.

Example

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To understand the time frames of metric values, let us take an example.

Suppose, you start comparing metrics at 14:30 on 21st January. You have set the time frame as

Last 24 hours

. This will enable you to view the metric values for the past 24 hours i.e., CPU percentage values from 14:30, 20th January till 14:30, 21st January.

You can compare these CPU Percentage values with the CPU Percentage values of 24 hours before 14:30, 20th January in the panel below i.e, values from 14:30, 19th January till 14:30, 20th

January.

Here, you can see the CPU percentage values of the past 24 hours. You can compare these with the values of the CPU percentage of the 24 hours before that.

Using the

Compare

feature you can analyze the metric values from the selected time frame and compare these values with metric values from a similar window of time preceding the selected time frame.

Page Title: forecast-metric-explorer

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Forecasting in Metric Explorer

Overview

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Forecasting is a crucial capability offered by the Metric Explorer, allowing users to predict future values of metrics based on historical data. By analyzing past trends and patterns, the Metric Explorer provides insights into the expected behavior of metrics, empowering users to make informed decisions and take proactive actions.

The concept behind the forecasting feature involves utilizing statistical models, machine learning algorithms, and time series analysis to project the future trajectory of metrics. This enables users to anticipate trends, plan capacity, optimize resource allocation, and predict potential issues before they impact the system's performance.

Use-Case

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Practical Use Cases for Forecasting in Metric Explorer:

Capacity Planning: By forecasting resource utilization, organizations can estimate future capacity requirements and ensure sufficient resources are allocated to support anticipated workloads.

Service Level Management: Forecasting helps predict future service levels based on historical data, enabling proactive optimization to meet performance targets and ensure customer satisfaction.

Infrastructure Optimization: Predicting future metrics, such as network traffic or server loads, allows IT teams to optimize infrastructure configurations and fine-tune resource allocation for optimal performance.

Navigation

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Go to Menu, Select

Metric Explorer

. The Metric explorer screen is displayed.

Forecast using Metric Explorer

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Add the metric trend to the metric explorer for which you want to forecast the values. After adding the metric to the metric explorer, click on

.

Select

Forecast

to display the screen showing forecasted values.

The Metric Explorer will forecast the values for the selected metric and visually indicate the forecasted values on the trend. You can hover over the forecasted points to view detailed information about the forecast, such as the time and value of the forecasted points.

Page Title: Metric%20Explorer

On this page

Metric Explorer

Metric Explorer

Metric Explorer

 is an out-of-the-box tool to view, analyze, compare, and co-relate the metrics of the monitors in your infrastructure. This would help not only to analyze the performance of your infrastructure but also enable the root cause analysis of issues in your infrastructure.

Navigation

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Go to Menu. Select

Metric Explorer

. The Metric explorer screen is displayed.

Now, before we start using the

Metric Explorer

, let us understand what is a trend in metric explorer.

Trends

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In metric analysis, a trend refers to the pattern found in the graphical representation of any metric value against time. A trend shows the range of values that a metric takes over a period of time.

The above picture shows a trend of latency, that is, it shows a plot of the latency values for a monitor over a period of time.

Adding trends to the metric explorer

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In order to start analyzing the metrics, you need to start by adding a trend of a metric to the metric explorer. This allows you to view the values of a metric for a particular monitor over a period of time.

Navigate to the metric explorer screen to start creating a trend. Perform the following steps to

successfully set up a trend:

Select the monitor from the

Select Monitor

dropdown on the panel in the metric explorer screen to analyze its metric.

After selecting the monitor, a list of metrics appears on the panel.

From the list of metrics, drag & drop the metric you want to analyze onto the

Metric Explorer

screen. The metric trend is now visible on the screen. You can view and study the trend on this screen for your analysis.

The trend of bytes transferred into the network per second for a monitor can be seen in the picture above.

note

You can create as many as 10 sets of trends on the smart expansion screen. Drag & drop the metrics onto any of the 10 tiles titled

'Drop metric here to view trend'

as per your requirement. You can also add multiple metrics to a single trend in order to compare different metrics. This will be explained further in the section

Comparing Metrics

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Now that you have set up a trend, let's understand the various elements available on the Metric Explorer.

Compare two or more metrics on the same trend

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To compare two or more metrics on the same trend, you can use the drag-and-drop feature in the Metric Explorer. For example, we have already setup the value of bytes transferred IN the network per second for an AWS monitor on the metric explorer. If you want to compare the bytes transferred

IN and OUT of a network, you can drag and drop the relevant metrics onto the same trend.

The trend will now look as shown below.

You can view and compare the values of both metrics on the same trend and even hover over the trend to see the values at a specific point in time.

Comparing Metrics from different Monitors

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If you need to compare metrics from different monitors, you can add a new metric tab in the Metric Explorer.

Motadata AIOps provides the ability to add as many metric tabs as you need for this purpose.

Select

from the panel on the metric explorer. A new metric tab is now created.

The trends that were added by selecting the monitors in the first tab will also persist on the metric explorer for your reference. This will enable you to compare the trends from the previous monitor with trends of a different monitor which you can now add in the new tab.

Selecting Metrics based on their Instance type

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Suppose you have have setup a Citrix XenServer Cluster as a monitor. Metric Explorer allows you to select metrics on an instance level in such cases. In this case, you can select metrics at instance level such as 'Virtual Machine' and 'Node' for a Citrix XenServer Cluster.

Once you select a particular instance such as a 'Virtual machine', you can then select a specific virtual machine for which you want to view the metrics. In the image below, you can see that we have selected a virtual machine

CentOS 6_3

and the metrics relevant to the virtual machine are then available for selection. You can then drag and drop these metrics on the metric explorer and start using them.

Changing the Time frame of Metric values

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You can change the time frame for all the trends on the metric explorer from the time selector on the top of the screen.

Click on

Today

which is the default time frame of the metric explorer. A drop-down with different time frames is displayed.

Select the time frame for which you want to view the metric values. For example, Select

Last 48 Hours

to view the metric values for the last 48 hours.

You can even select a custom time frame to set the time as per your convenience.

Selecting the Granularity in Metric Explorer

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Granularity refers to the level of detail in the metric data. Metric Explorer allows you to select the granularity of the metrics you are viewing.

Navigate to the granularity selector at the top of the metric explorer screen. Choose the desired level of granularity, such as '1 minute', '5 minutes', '1 hour', etc.

Selecting a finer granularity (e.g., 1 minute) provides more detailed data points, while a coarser granularity (e.g., 1 hour) provides a broader overview. Adjusting the granularity helps in analyzing trends at different levels of detail, depending on your monitoring needs.

Take a Snapshot of the Metric Explorer

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Select

to take a snapshot of all the trends that you have created. This snapshot will be saved on the 'Downloads' folder on your system.

Clear all the trends on the Metric Explorer

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Select

to clear out all the trends that you have created.

Page Title: Overview

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Metric Analysis

Overview

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In today's IT and business landscape, machine learning plays a crucial role. However, many businesses and IT leaders find it challenging to develop a strategy to leverage these cutting-edge techniques to their advantage.

Motadata AIOps aims to improve the lives and businesses of others through their expertise in machine learning technology. By using machine learning technology, organizations can make data-driven decisions from complex data sources and enhance their capabilities.

Use-Case

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Motadata AIOps provides a powerful metric analysis tool that enables users to understand the data in a way that can drive better business relationships with their IT teams. By analyzing a certain set of metric values, users can check how they compare to other metrics, how their values have changed over time, when they are showing sudden changes in their values, and even predict their values and behavior in the future.

Here are some examples of how Metric Explorer can help users:

To reduce false positives, a user can configure an alert for anomalous behavior of one of the metrics for a monitor. The user can access a tool that enables them to understand historical metric patterns to identify the best possible algorithm to configure the policy and thus have a better alert posture.

A user can identify an anomaly in a specific application metric and wants to locate the root cause of the issue. They can use metrics correlation functionality to locate similar behavior in other infrastructure stacks and identify the probable root cause of the anomaly.

A user might want to do some analysis on a given set of data points for a metric. Before starting the

analysis, they might want to remove the outlier points to have a filtered dataset that enables more efficient and accurate analysis.

An IT admin preparing for a release wants to understand the infrastructure stack resource utilization from the past and then forecast future required resources based on the historical behavior.

These are some of the questions that call for a tool which enables you to view past, predict future, compare, co-relate, and find anomalous metric behaviour thus enabling a comprehensive metric analysis of the monitors in your infrastructure. Motadata AIOps enables you to acheive all this through

Metric Explorer

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Metric Explorer

is a metric exploration board which uses next-gen machine learning algorithms like anomaly, outlier, and forecast. This is one of the many ways in which Motadata AIOps provides value to the clients by lending machine learning expertise to answer client-specific questions.

This machine learning enriched dataset of metrics enables you to easily understand your IT infrastructure needs by comparing it to other similar datasets of metrics, the value of these metrics from the past, and even go on to forecast their values.

Let us explore this in more detail in the next section.