Create a Health Rule and Fine-tune Metric Evaluation

To ensure that you do not miss alerts or receive false alerts, you must configure alerts appropriately. Alert Sensitivity Tuning (AST) helps configure alerts with appropriate sensitivity by providing historical data for the metric or the baseline being configured. AST also visualizes the impact of the alert configuration.

Create a Health Rule and Fine-tune Metric Evaluation

You can create a health rule to monitor the parameters of an application entity and fine-tune the sensitivity of a health rule using Alert Sensitivity Tuning (AST).

> ⓘ
> - You must be a SaaS customer.
> - You must be monitoring a business transaction, a service endpoint, or a remote service (affected entity).

1. In the entity (BT, SEP, or remote services) UI, select an entity from the list.
2. Right-click the entity and click **Create new Health Rule**. The **Create Health Rule** UI is displayed.
3. Configure the health rule overview details. For more information, see Configure Heath Rule Details.
4. In the **Affected Entities** panel, select the entities to be monitored.
5. In the **Critical Criteria** panel, select **+Add Condition**.
6. Configure the health rule condition.
7. If required. select the **Warning Criteria** panel and define warning conditions as described in step 6.
8. Click **Save.** The health rule is saved.

Configure the Health Rule Condition

1. Enter a name for the condition in the first field of the condition row.
   This name is used in the generated notification text and in the AppDynamics console to identify the violation.
2. From the drop-down list next to the condition name field, select the single metric or metric expression to evaluate the condition.
   a. Single Metric:

Qualifier Type	Description
Minimum	The minimum value reported across the configured evaluation time length. Not all metrics have this type.
Maximum	The maximum value reported across the configured evaluation time length. Not all metrics have this type.
Value	The arithmetic average of all metric values reported across the configured evaluation time length. This value is based on the type of metric.
Sum	The sum of all the metric values reported across the configured evaluation time length.
Count	The number of times the metric value has been measured across the configured evaluation time length.
Group Count	The number of nodes contributing to a metric value, generally relevant for application or tier level metrics.
Current	The value for the current minute.

   i. From the **Value** drop-down list, select a qualifier for the metric from the following options:
   ii. Click **Select a Metric. Metric Selection** dialog box appears. The metric browser in the **Metric Selection** dialog box displays metrics appropriate to the health rule.
   iii. Select a metric from the list for the business transaction. Click **Select Metric**.
   A graphical view of the metric data for the last 8 hours appears.

Average CPU Used (ms)

> ℹ️ If you want to view the metric data for 1 day or 3 days, you can select the time period using the drop-down list.

iv. From the drop-down list after the metric, select the type of comparison to evaluate the metric.

- To limit the effect of the health rule to conditions during which the metric is within a defined range—standard deviations or percentages—from the baseline, select **Within Baseline** from the drop-down list. To limit the effect of the health rule to when the metric is not within that defined range, select **Not Within Baseline**. Then select the following:
  -baseline to use
  -numeric qualifier of the unit of evaluation
  -unit of evaluation
  For example:

```
Within Baseline of the Default Baseline by 3 Baseline Standard Deviations
```

- To compare the metric with a static literal value, select **< Specific value** or **> Specific Value** from the menu, then enter the specific value in the text field. For example:

```
Value of Errors per Minute > 100
```

- To compare the metric with a baseline, **select < Baseline** or **> Baseline** from the drop-down list, and then select the following:
  - baseline to use
  - numeric qualifier of the unit of evaluation
  - unit of evaluation.
  You can use the Baseline Standard Deviation or Baseline Percentage as the unit of evaluation. For example:

```
Maximum of Average Response Time is > Baseline of the Daily Trend by 3
Baseline Standard Deviations
```

See Dynamic Baselines for information about the baseline options.

> ℹ️ **Baseline Percentages**
>
> The *baseline percentage* is the percentage above or below the established baseline at which the condition will trigger. For example, if you have a baseline value of 850 and you have defined a baseline percentage of > 1%, the condition is true if the value is > `[850+(850x0.01)]` or 859.

To prevent health rule violations from being triggered when the sample sets are too small, these rules are not evaluated if the load—the number of times the value has been measured—is less than 1000. For example, if a very brief time slice is specified, the rule may not violate even if the conditions are met, because the load is not large enough.

Depending on the baseline configuration you define, a graphical view of the metric data for the given baseline configuration is displayed. The graphical view is instantly updated when you update any configuration. You can also view granular details by zooming in on the graphical view. The metric data presented in the graph helps you calibrate the sensitivity of the metric evaluation.
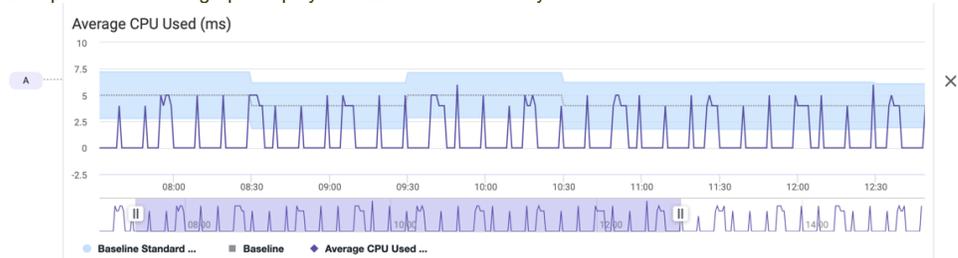
b. Metric Expression:

    i. Select the **Metric Expression** option from the drop-down list and click **Add Expression**. The **Metric Expression** window appears that allows you to construct a mathematical expression to use as a metric. For example, the following expression is created to measure the number of calls per CPU: `Value of {calls} / {cpu} > 1`.

    ii. In the **Variable Declaration** panel of the Mathematical Expression builder, click **+ Add variable** to add a variable.

    iii. In the **Variable Name** field, enter a name for the variable.

    iv. From the drop-down list next to the **Variable Name** field, select the qualifier for the metric from the following options:

| Qualifier Type	Description
Minimum	The minimum value reported across the configured evaluation time length. This qualifier is not available for all the metrics.
Maximum	The maximum value reported across the configured evaluation time length. This qualifier is not available for all the metrics.
Value	The arithmetic average of all metric values reported across the configured evaluation time length. This value is based on the type of the metric.
Sum	The sum of all the metric values reported across the configured evaluation time length.
Count	The number of times the metric value has been measured across the configured evaluation time length.
Group Count	The number of nodes contributing to a metric value, generally relevant for application or tier level metrics.
Current	The value for the current minute.

    v. Click **Select a metric** to open an embedded metric browser. To avoid erroneous evaluations, if any metric in the expression has a null value, the health rule is not evaluated.

Expression	Null Value	Evaluation
`a-b-c`	a	`entire expression is evaluated negative`
`a/b`	b	`the number 'a' is divided by zero, evaluates to an error`
`a*b`	a or b	`entire expression is evaluated as zero`

    vi. Repeat Steps I through V for every metric that you use in the expression. You can remove a variable by clicking the **Delete** icon.

    vii. In the **Expression** pane, build the expression by clicking **Insert Variable** to insert variables created in the **Variable Declaration** pane along with appropriate mathematical signs.

    viii. When the expression is built, click **Save**.

    ix. Back on the **Critical Criteria** tab, select **< Specific value** or **> Specific Value** from the menu to compare the value of the metric evaluation with a static literal value, then enter the specific value in the text field. For example:

```
Value of {calls} / {cpu} > 1
```

A graphical view of the metric data for the last 8 hours appears.
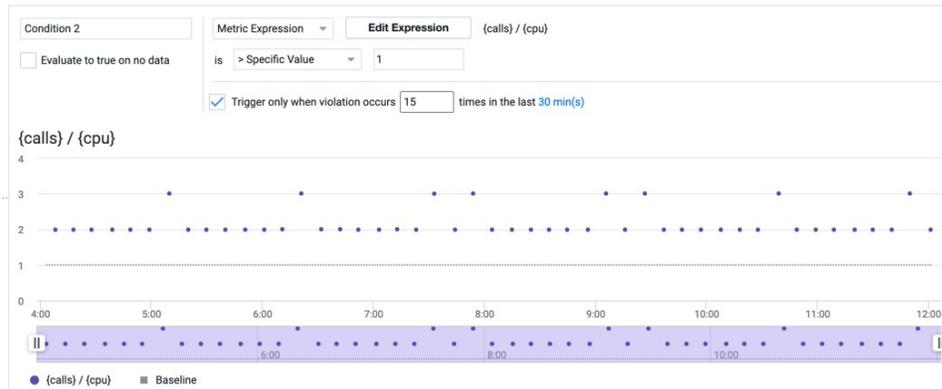
> (i) You can view the metric data for 1 day or 3 days by selecting the time period using the drop-down menu.

3. If you want the condition to evaluate to true when a configured metric does not return any data during the evaluation time frame, select the **Evaluate to true on no data** option.
   This option does not affect the evaluation of the unknown in the case where there is no enough data for the rule to evaluate. For example, if the health rule is configured to evaluate the last 30 minutes of data and a new node is added, the condition evaluates to unknown for the first 30 minutes even if the **Evaluate to true on no data** option is selected.
4. If you want to define a 'Persistence Threshold' for the condition to reduce false alerts:

   a. Select **Trigger only when a violation occurs __ times in the last __ min(s).**
   b. Define the number of times metric performance data should exceed the defined threshold to constitute a violation.
   c. If required, adjust the evaluation time frame by setting an alternate evaluation time frame.

> (i)
> - You can define a persistence threshold for a condition only if you have defined an evaluation time frame of 30 minutes or less.
> - If you define a persistence threshold for a condition, the metric data is plotted directly on the AST graph. If you do not define a persistence threshold, a 'moving average' for the selected metric is plotted. For more information, see Why Use Moving Average.

5. Specify the evaluation scope in the **Critical Criteria** and **Warning Criteria** panels, select the average of all nodes**.**

> (i) AST graphical view is displayed only when you set the health rule evaluation scope to the average for all nodes.