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Overview

KITT monitoring and alerting is backed by a number of different open source, purchased, and proprietary tools:

- Prometheus (in-cluster time series storage and monitoring)
- AlertManager (prometheus-based alerts detection) (in-cluster alerts detection)
- Spotlight (alerting distribution)
- Dynatrace (APM-related visibility and alerts)

Setup

To receive application-specific alerts from KITT managed applications, you must provide one or more email addresses and/or Slack channels in the kitt.yml alerts section.
Once provided, any relevant alerts issued from Dynatrace or Prometheus will be routed accordingly using Spotlight.

This native integration ensures that any relevant application alerts from any cluster are routed where they are most relevant. This helps to improve overall application operations and support.

Prometheus-Sourced Alerts

Prometheus tracks a number of metrics and provides many out-of-the-box alerts. The following table describes the subset of Prometheus alerts that are most useful to applications, including their severities and relevance to application health. Only the alerts listed here will trigger notifications. However, be aware that, depending on the kind of application being deployed, some alerts are not relevant and may never be encountered in practice for certain applications. For example, you will not see cronjob-related alerts for service-based applications.

Alert name	Description	Seve
Kube Deployment Replicas Mismatch	Deployment has not matched the expected number of replicas for longer than an hour.	criti
Kube Deployment Generation Mismatch	Deployment generation does not match. This indicates that the Deployment has failed, but it has not been rolled back.	criti
Kube Pod Not Ready	Pod has been in a non-ready state for longer than an hour.	criti
Kube Pod Crash Looping	Pod has been restarting frequently.	criti
Kube Stateful Set Generation Mismatch	StatefulSet generation does not match. This indicates that the StatefulSet has failed, but it has not been rolled back.	criti
Kube Stateful Set Replicas Mismatch	StatefulSet has not matched the expected number of replicas for longer than 15 minutes.	criti

Alert name	Description	Seve
Kube Stateful Set Update Not Rolled Out	StatefulSet update has not been rolled out.	criti
KubePodReachedMemoryLimit	Pod has reached its memory limit and was killed.	criti
Kube Persistent Volume Full In Four Days	Based on sampling of volume usage in the last 6 hours. The PV will be full in 4 days	criti
Kube Persistent Volume Usage Critical	The PV has less than 3% free space.	criti
Kube Cron Job Running	CronJob is taking more than 1 hour to complete.	warr
Kube Job Completion	Job is taking more than 1 hour to complete.	warr
CPU Throttling High	Container in a pod is being throttled 25% of the time.	warr
Kube Daemon Set Mis Scheduled	A daemon set either exists on nodes on which it isn't meant to exist, or vice-versa.	warr

Alert name	Description	Seve
Namespace resource usage more than 90% of it's allocated quota	Workloads running in specified namespace are using more than 90% of the allocated resources quota.	warr

Dynatrace-Sourced Alerts

TBD.

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