Kubernetes PowerPack Release Notes

Version 101

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Overview

Version 101 of the *Kubernetes* PowerPack includes support for Cloud Native Computing Foundation (CNCF), new Dynamic Applications, and new icons.

- **Minimum Required Platform Version**: 8.10.0
- **Support Status**: Beta

This document describes:

- *Pre-install information*
- *The installation process for the PowerPack*
- *The features included in version 101*
- *The enhancements and issues addressed in version 101*

Before You Install or Upgrade

Ensure that you are running version 8.10.0 or later of SL1 before installing or upgrading the *Kubernetes* PowerPack version 101.

> **NOTE**: For details on upgrading the ScienceLogic platform, see the appropriate ScienceLogic Release Notes.

In addition, before installing or upgrading the *Kubernetes* PowerPack version 101, you must first import and install the *Linux Base Pack* PowerPack version 101 or greater and the *Docker* PowerPack version 102 or greater. The *Kubernetes* PowerPack leverages both of these PowerPacks and will not work properly if they are not also installed.

Installation and Upgrade Process

To install version 101 of the *Kubernetes* PowerPack, perform the following steps:

1. If you have not done so already, upgrade your system to the 8.10.0 or later release.
2. If you have not done so already, install the *Linux Base Pack* PowerPack version 101 or greater and the *Docker* PowerPack version 102 or greater.
3. Download version 101 of the *Kubernetes* PowerPack from the Customer Portal to a local computer.
4. Go to the **PowerPack Manager** page (System > Manage > PowerPacks). Click the **[Actions]** menu and choose *Import PowerPack*. When prompted, import version 101 of the *Kubernetes* PowerPack.
5. After importing the PowerPack, you will be prompted to install the PowerPack. Click the **[Install]** button to install the PowerPack.
6. See the manual **Monitoring Kubernetes** for instructions on using the new PowerPack.

Included Features

The following features are included in version 101 of the *Kubernetes* PowerPack:

- Dynamic Applications to discover and monitor Kubernetes devices

> **NOTE:** The Dynamic Applications in the *Kubernetes* PowerPack also create device component map relationships between each controller device and its underlying Docker container.

- Device Classes for each of the Kubernetes devices the *Kubernetes* PowerPack can monitor

- Event Policies and corresponding alerts that are triggered when Kubernetes devices meet certain status criteria

- A Dashboard and Dashboard Widget that you must use to create Credentials for discovering Kubernetes devices

- An SSH/Key Credential that the Kubernetes Token Entry Dashboard uses as a template for creating additional SSH/Key Credentials for monitoring Kubernetes clusters

> **NOTE:** You must use the Kubernetes Token Entry Dashboard that is included in the *Kubernetes*PowerPack to create a master SSH/Key Credential, a node SSH/Key Credential, and a SOAP/XML Credential that enables you to specify the Kubernetes device topology that you want to discover. For more information, see the **Monitoring Kubernetes** manual.

> **NOTE:** You must not edit the SSH/Key Credential that is included in the *Kubernetes* PowerPack.

- Run Book Action and Automation policies that do the following:

  - Automatically create Kubernetes clusters whenever the ScienceLogic platform discovers a Kubernetes host
  - Align Dynamic Applications from the *Docker* and *Linux Base Pack* PowerPacks to Kubernetes nodes and report back to the ScienceLogic Data Collector or All-in-One Appliance if the Dynamic Applications were successfully aligned
  - Ensure that Namespaces (and their children) have a 1-hour vanishing timer, to properly reflect topology changes

Enhancements and Issues Addressed

The following enhancements and addressed issues are included in version 101 of the *Kubernetes*PowerPack:

- The PowerPack supports the Cloud Native Computing Foundation (CNCF) version of Kubernetes.

- The following Dynamic Applications were added to the PowerPack:

  - Kubernetes: Controller Pod Configuration
  - Kubernetes: Controller Pod Performance
  - Kubernetes: Events Configuration
  - Kubernetes: Persistent Volume Configuration
  - Kubernetes: Pod Configuration
  - Kubernetes: Self Monitoring Performance
  - Kubernetes: Service Configuration

- The new "Kubernetes: Events Configuration" is a Journal Dynamic Application that collects the events reported by Kubernetes. The "Kubernetes: Normal event" and "Kubernetes: Warning event" Event Policies are enabled by default. Users can opt to disable these Event Policies and enable specific Event Policies any of the disabled policies from the following list:

Event Policy	Device	Severity	State
Kubernetes: Normal event	Any	Notice	Enabled
Kubernetes: Warning event	Any	Major	Enabled
Kubernetes: Error Image Never Pull	Pod	Major	Disabled
Kubernetes: Failed to Create Pod Container	Pod	Major	Disabled
Kubernetes: Failed to Kill Pod	Pod	Major	Disabled
Kubernetes: Failed Start Hook	Pod	Major	Disabled
Kubernetes: Failed Sync	Pod	Major	Disabled
Kubernetes: Failed Validation	Pod	Major	Disabled
Kubernetes: Free Disk Space Failed	Pod	Major	Disabled
Kubernetes: Image Pull Backoff	Pod	Major	Disabled
Kubernetes: Pod Container Created	Pod	Notice	Disabled
Kubernetes: Pod Exceeded Grace Period	Pod	Major	Disabled
Kubernetes: Pod Failed	Pod	Notice	Disabled
Kubernetes: Pod Image Inspect Failed	Pod	Notice	Disabled
Kubernetes: Pod Image Pulled	Pod	Notice	Disabled
Kubernetes: Pod Image Pulling	Pod	Major	Disabled
Kubernetes: Pod Killing	Pod	Major	Disabled

Event Policy	Device	Severity	State
Kubernetes: Pod Network Not Ready	Pod	Major	Disabled
Kubernetes: Pod Preempting	Pod	Major	Disabled
Kubernetes: Pod Started	Pod	Notice	Disabled
Kubernetes: Pod Unhealthy	Pod	Major	Disabled
Kubernetes: Prestop Hook	Pod	Major	Disabled
Kubernetes: Probe Warning	Pod	Major	Disabled
Kubernetes: Already Mounted Volume	Node	Notice	Disabled
Kubernetes: Container GC Failed	Node	Major	Disabled
Kubernetes: Failed Attach Volume	Node	Critical	Disabled
Kubernetes: Failed Create Pod Sandbox	Node	Notice	Disabled
Kubernetes: Failed Map Volume	Node	Major	Disabled
Kubernetes: Failed Mount	Node	Major	Disabled
Kubernetes: Failed Node Allocatable Enforcement	Node	Major	Disabled
Kubernetes: Failed Pod Sandbox Status	Node	Notice	Disabled
Kubernetes: File System Resize Failed	Node	Major	Disabled
Kubernetes: File System Resize Successful	Node	Notice	Disabled
Kubernetes: Image GC Failed	Node	Major	Disabled
Kubernetes: Invalid Disk Capacity	Node	Major	Disabled
Kubernetes: Kubelet Setup Failed	Node	Critical	Disabled
Kubernetes: Node Allocatable Enforced	Node	Notice	Disabled
Kubernetes: Node Not Ready	Node	Major	Disabled
Kubernetes: Node Not Schedulable	Node	Major	Disabled
Kubernetes: Node Ready	Node	Notice	Disabled
Kubernetes: Node Schedulable	Node	Notice	Disabled
Kubernetes: Rebooted	Node	Critical	Disabled
Kubernetes: Sandbox Changed	Node	Notice	Disabled
Kubernetes: Starting	Node	Notice	Disabled
Kubernetes: Successful Attach Volume	Node	Notice	Disabled
Kubernetes: Successful Mount Volume	Node	Notice	Disabled

Event Policy	Device	Severity	State
Kubernetes: Volume Resize Failed	Node	Major	Disabled
Kubernetes: Volume Resize Successful	Node	Notice	Disabled

- The "Kubernetes Component" Device Class was added to the PowerPack.

- New icons for Device Classes were added to the PowerPack.

- Events are now raised when there is no response from the API.

- The "Kubernetes: Persistent Volume Status Healthy" and "Kubernetes: Persistent Volume Status Unhealthy" events have been added to the PowerPack.

- Device components now raise an event when issues are encountered with communication with a child component.

- The "Kubernetes: Controller Discovery" Dynamic Application was updated to only discover Replica Sets that are not linked to an existing deployment. Existing Replica Sets that don't meet this condition will change to *Unavailable* and vanish if enabled.

- An issue was addressed in the "Kubernetes: Node Configuration" Dynamic Application in which the "Unknown" node status was not correctly displayed.

- An issue was addressed in which cache time for Dynamic Applications was taking too long. The time was adjusted to match the Dynamic Application poll frequency or a maximum of 3 times that poll frequency.

- An issue was addressed in which the "Kubernetes: Persistent Volume Configuration" Dynamic Application was not aligning automatically in a patched environment.

- An issue was addressed in the "Kubernetes: Cluster Performance" Dynamic Application in which the % CPU Request Capacity Utilization metric was reporting abnormally high values.

- An issue was addressed in which AWS EKS Kubernetes clusters were given the incorrect name upon discovery.

Known Issues

The following known issue affects *Kubernetes* PowerPack version 101:

- Users can discover Elastic Kubernetes Service(EKS) and Google Kubernetes Engine (GKE) clusters with the *Kubernetes* PowerPack version 101, but full support and testing for EKS and GKE has not yet been implemented.