README.md

HCL Workload Automation Observability for Splunk

You can use the HCL Workload Automation (HWA) Observability for Splunk to monitor HCL Workload Automation metrics, events, audit and infrastructure logs.

Content

Prerequisites

Following prerequisites must be satisfied prior to deploy Splunk Solution:

- Kubernetes cluster(OCP V4.7 or above, GKE) with administrative access
- HWA v10.x installed on the Kubernetes cluster
- Tools & Packages
  - Helm3
  - Splunk OpenTelemetry Collector for Kubernetes

Note: To use the HWA Observability Dashboard for Splunk, HWA metrics must be available. For information about HWA exposed metrics, see Exposing metrics to monitor your workload.

Language support

For dashboards provided within HWA Observability for Splunk, the only supported language is English.

Installation

1. Installing and configuring splunk

1. From HCL License Portal download the appropriate HWA Observability installation package: HWA Observability for HWA Observability Add-on
2. Installation package for Splunk: HWA_OBSERVABILITY_APP_FOR_SPLUNK_10.x.tar.gz
3. Follow the below command to untar the gzip file

```
tar -xvzf HWA_OBSERVABILITY_APP_FOR_SPLUNK_10.x.tar.gz
```

4. Follow the steps mentioned in this ReadMe file to complete the solution setup.

2. Splunk installation

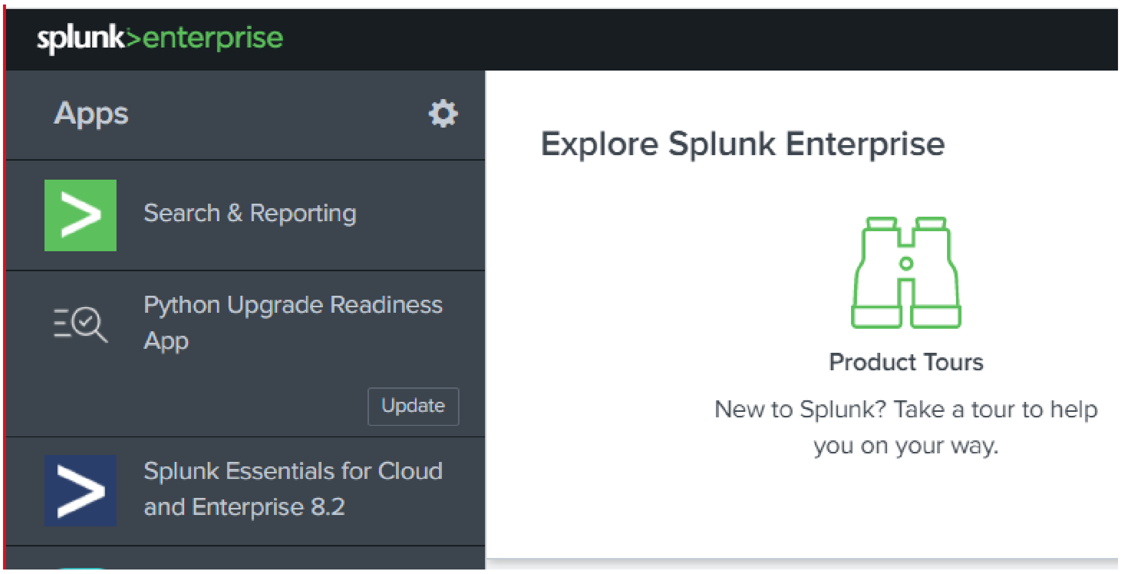
Splunk can be deployed on Kubernetes by using the official Splunk Operator for Kubernetes. Follow the steps mentioned in Splunk official documentation to setup Splunk by using Splunk Operator.

a. Install/Import HWA Monitoring App in Splunk

HWA monitoring application is available as .spl file.

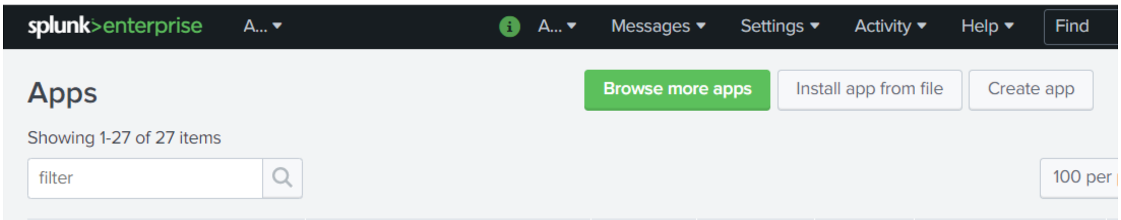
Importing application steps:

- Installing the HWA Monitoring App
  - Go to the Splunk console's home page by navigating to http://servername:8000 in your browser
  - Click on the gear icon:


splunk>enterprise
Apps
Search & Reporting
Python Upgrade Readiness App
Update
Splunk Essentials for Cloud and Enterprise 8.2
Explore Splunk Enterprise
Product Tours

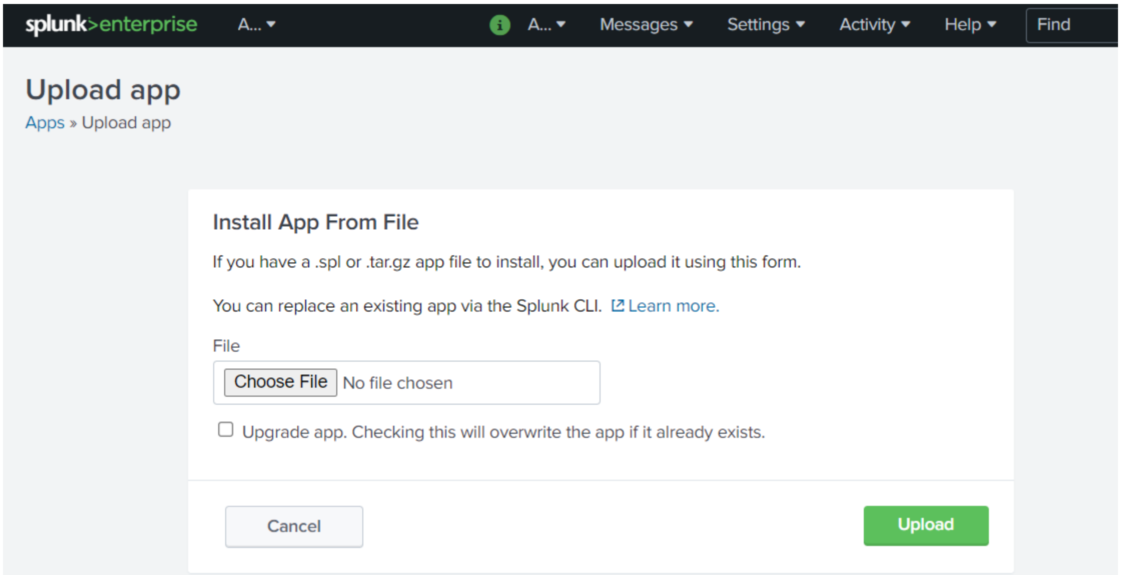
New to Splunk? Take a tour to help you on your way.

- Click Install app from file:



Showing 1-27 of 27 items

- Browse wa_monitoring_app.spl file and click Upload:



Install App From File

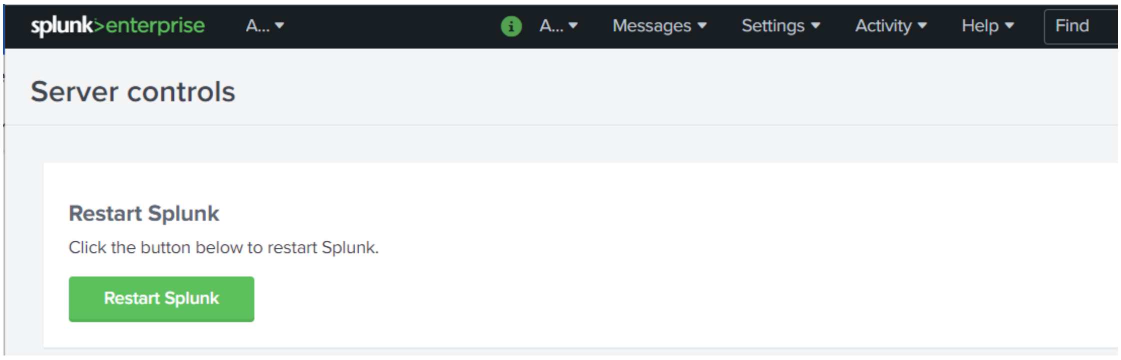
If you have a .spl or .tar.gz app file to install, you can upload it using this form.

You can replace an existing app via the Splunk CLI. Learn more.

File: No file chosen

□ Upgrade app. Checking this will overwrite the app if it already exists.

- Click Settings > Server controls > Restart Splunk:



Restart Splunk

Click the button below to restart Splunk.

For more information about installing app from file, refer to Splunk documentation.

b. Create HEC Token

- The HEC Token for this application is `hwa_hec_token`, if you need to create a new HEC Token follow the below steps.
- Create an HEC token in Splunk following the steps listed in this documentation.
- Configure HEC token to send data to "hwa-logs" index.

  > - Select "Settings"
  > - Go to "Data Inputs"
  > - Select "HTTP Event Collector"
  > - Edit HEC token which you just created
  > - Among the allowed indexes, select "wa-metrics" and "hwa-logs"
  > - Save it

NOTE : If you selected `Enable SSL` in Global Settings, use HTTPS for HEC endpoint.

3. Splunk Otel Collector for Kubernetes

Follow the below steps and install Splunk OpenTelemetry Collector for Kubernetes on your Kubernetes cluster.

a. Configuration for GKE cluster

1. Add the following Helm repo

```
helm repo add splunk-otel-collector-chart https://signalfx.github.io/splunk-otel-
```

2. Follow this Pod Security Policy documentation and run the step 1.

3. To install the Splunk OpenTelemetry Collector in a Kubernetes cluster, the splunkPlatform must be configured. Download and update the below steps in the values.yaml file.

4. Prepare thie following Values file. Provide the following inputs to the variables:

Variable name	Input to be given
clusterName	your clusterName
splunkPlatform.endpoint	your HEC endpoint
splunkPlatform.token	value of your HEC token
splunkPlatform.index	hwa-logs
splunkPlatform.metricsIndex	wa-metrics

Variable name	Input to be given
splunkPlatform.insecureSkipVerify	true
splunkPlatform.logsEnabled	true
splunkPlatform.metricsEnabled	true
cloudProvider	gcp
distribution	gke
autodetect.prometheus	true
autodetect.istio	true

NOTE : For openshift installation use input `openshift` for `distribution` variable

5. Replace your agent.config with the following configuration:

```
config:
    receivers:
      receiver_creator:
        watch_observers: [k8s_observer]
        receivers:
          prometheus_simple:
            rule: type == "pod" && annotations["prometheus.io/scrape"] == "true"
            config:
              endpoint: '`endpoint`:`31116`'
              metrics_path: '/metrics'
              collection_interval: 30s
              use_service_account: false
              tls:
                insecure: false
                insecure_skip_verify: true
```

6. Replace your logsCollection.containers.excludePaths with below excludePaths:

```
 excludePaths: ["/var/log/pods/*/*/*.log"]
```

7. Replace your fluentd.config.path with below path:

```
  path: /var/log/containers/*auditing*.log
```

8. Add the following custom ClusterRole rule in your values.yaml file along with all other required fields like clusterName, splunkPlatform.(Add this section at the bottom of the yaml file.)

```
rbac:
  customRules:
    - apiGroups:     [extensions]
      resources:     [podsecuritypolicies]
      verbs:         [use]
      resourceNames: [splunk-otel-collector-psp]
```

9. Run the below command:

```
helm install my-splunk-otel-collector --values values.yaml splunk-otel-collector-
```

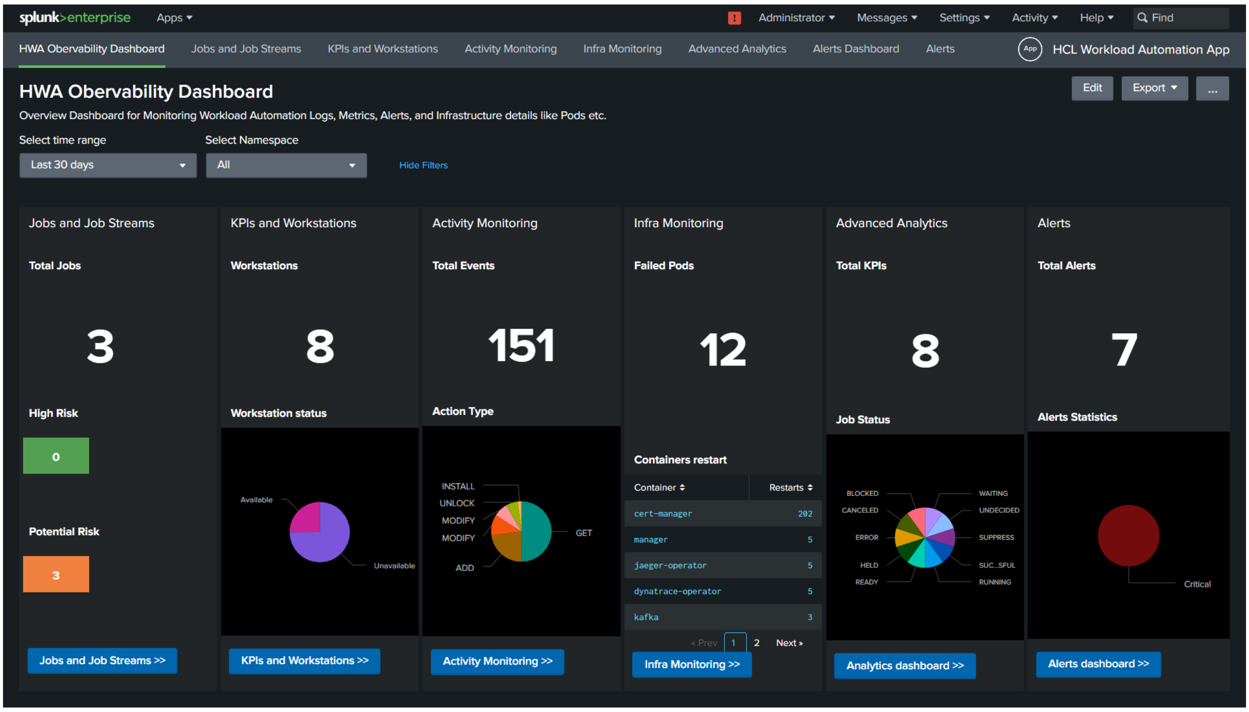
Getting Started with HCL Workload Automation Monitoring App

The HWA Monitoring overview dashboard provides a single, consolidated view for monitoring the workload status. By selecting the dashboard on the list, you can see the information related to that dashboard.

HWA Monitoring Overview Dashboard

In the HWA Monitoring overview Dashboard, you can view the whole status of your workload at a glance for one or more of the engines you have configured.

Overview Dashboard:



HWA Obervability Dashboard

Overview Dashboard for Monitoring Workload Automation Logs, Metrics, Alerts, and Infrastructure details like Pods etc.

Select time range: Last 30 days

Select Namespace: All

Jobs and Job Streams

Total Jobs: 3

High Risk: 0

Potential Risk: 3

KPIs and Workstations

Workstations: 8

Workstation status

Activity Monitoring

Total Events: 151

Action Type

Infra Monitoring

Failed Pods: 12

Containers restart

Container ⬍	Restarts ⬍
cert-manager	202
manager	5
jaeger-operator	5
dynatrace-operator	5
kafka	3

Advanced Analytics

Total KPIs: 8

Job Status

Alerts

Total Alerts: 7

Alerts Statistics

By clicking a button or menu option, you open a new tab displaying the selected dashboard information. The following dashboards are supported:

- **Jobs and Job Streams**. This dashboard shows the status of Jobs, Critical jobs and Job Streams.

  Source of Information: HWA Deployment events sidecar container and HWA server Logs.

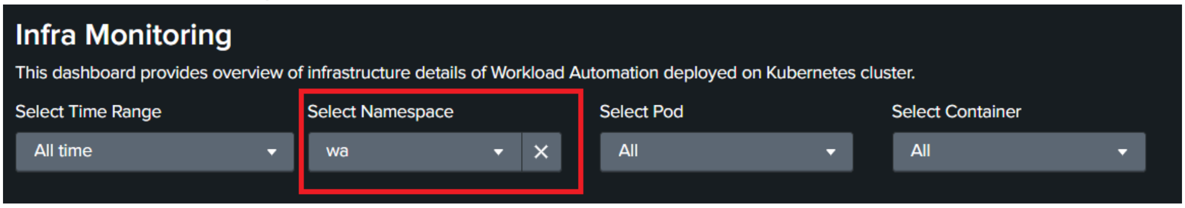
- **KPIs and Workstations**. This dashboard shows the HCL Workload Automation KPIs information for each host and allows drilldown to see the timeseries data in visual representation for defined KPIs.

  Source of Information : API exposed by HWA Server on port 31116.

- **Activity Monitoring**. This dashboard shows details of workstations and audit information such as user actions. Users can view audit information for selected time range, user and object.

  Source of Information: HWA Deployment sidecar audit containers, for example: waserver-db-auditing, waserver-plan-auditing etc.

- **Infra Monitoring**. This dashboard provides an overview of the infrastructure details of HCL Workload Automation deployed on Kubernetes cluster. Filter by your Kubernetes namespace and view the dashboard as shown below:

  Infra Monitoring

  This dashboard provides overview of infrastructure details of Workload Automation deployed on Kubernetes cluster.

  Select Time Range: All time

  Select Namespace: wa

  Select Pod: All

  Select Container: All

  Source of Information: Infrastructure Logs exposed by Kubernetes/Openshift cluster.

- **Alerts Dashboard**. The HWA monitoring application comes with predefined alerts configured as an example. User can navigate to alerts page and easily enable/disable these alerts when needed. The statistical reports and graphical visualizations of the alerts created for HWA application can be viewed in HWA Alerts dashboard. Follow this Splunk documentation to manage alerts (create new,enable & disable,etc...). in Splunk application. Follow this Splunk documentation to configure the email setting in the Splunk application.

The following table shows some of the out-of-the-box alert definitions that come with the HWA Monitoring Application:

Monitor Name	Severity	Trigger Condition
WA_Broker_Status	Critical	==0 (more than 5 minutes)
WA_server_link_status	Critical	==0 (more than 5 minutes)
WA_DB_connected	Critical	==0 (more than 30 sec)
WA_Agent_running	Critical	==0 (more than 5 minute)
WA_FINAL_Error	Critical	==1 (more than 30 sec)
WA_FINAL_Late	Critical	==1 (more than 30 sec)
WA_LicenseUncounted	Critical	> 0 (more than 1day)
WA_UI_Available	Critical	HTTP code != 200
WA_Master_Available	Critical	HTTP code != 200
WA_DB_connected_Warning	Low	==0 (more than 10 sec)
WA_LicenseUncounted_Warning	Low	> 0 (more than 70 min)

Note: By default, all the above alerts are disabled. You need to enable them based on your requirements.

The *WA_UI_Available* and *WA_Master_Available* alert definitions needs to be updated with your HWA Console and HWA Server environment URLs respectively. So, follow this Splunk doumentation to edit the alert definitions.

FAQs

1. Q: What are the Supported platforms?

   A: The solution can be deployed on OpenShift Cluster Platform (OCP) version 4.7 and above, Google Kubernetes Engine(GKE).

2. Q: Where to access the installation details?

   A: Installation steps are provided in this document. Also provided external links wherever applicable.

3. Q: Which Splunk product is supported? Splunk Enterprise, Splunk Cloud, or Splunk Observability?

   A: This solution can be deployed on Splunk Enterprise trial version 9.0.x. Support will be extended to other products like Splunk Cloud and Splunk Observability in the future releases.

4. Q: How to troubleshoot the Splunk OTel Collector?

   A: Follow this Splunk OpenTelemetry Collector troubleshooting documentation.

5. Q: How to increase the size of Splunk OTel Collector containers?

   A: Follow this Sizing Splunk OTel collector containers documentation.

6. Q: What are the indexes required by HWA Monitoring Splunk App?

   A: HWA Monitoring App utilizes 2 indexes: ***hwa-logs*** and ***wa-metrics***.

7. Q: Where I can find infrastructure details of Kubernetes cluster?

   A: The Kubernetes cluster infrastructure details can be found in Infra Monitoring dashboard. You can navigate to Infra Monitoring dashboard by either selecting menu item or click on button from overview page. Select HWA namespace from dropdown on Infra Monitoring dashboard to display PODS, CONTAINERS and DEPLOYMENT details.

8. Q: What insight is available about different audit types?

A: You can view the details of audit type and its insight in Activity Monitoring dashboard. There are various audit types where user interaction with the system; Database, Plan, Conman,Stageman etc.

9. Q: HWA Observability Dashboard doesn't show infrastructure details of your Kubernetes cluster?

   A: Filter by your Kubernetes namespace and view the infrastructure details.

10. Q: Can I view the workstations status?

    A: Yes, you can view the workstation status on ***KPIs and Workstations*** dashboard.

11. Q: How do I create a new alert?

    A: The Splunk documentation provides step by step procedure to create alerts in Splunk. You can follow this Splunk documentation to create new alert. For more details, see Alert Examples

12. Q: Can I modify/edit existing alert?

```
- Yes, you can modify an existing alert in two ways.
- Method 1:
    1. Select *Alerts* from the top bar of the home page.
    2. Find the Alert name, click the *Edit* button and edit the alert.
- Method 2:
    1. Select *Alerts Dashboard* from the top bar of the home page.
    2. Select Alerts Name from the *Alerts* section. A new tab will open.
```

13. Q: How can I update the alert search query?

    A: Splunk documentation provides the steps to update the alert search query. For more details, see this Splunk documentation

14. Q: Does Splunk support adding multiple severity for an alert? For example, an alert could be triggered as LOW severity based on some thresholds, and as HIGH severity based on other thresholds. Can I configure both conditions for the alert?

    A: No, Splunk does not support adding complex alerts and adding multiple severity for an alert. Alternatively, you can create two different alerts and add the severity based on its conditions.

15. Q: Alerts/Emails are triggered very frequently, sending emails repeatedly. How can I avoid this?

A: A frequently triggered alert indicates that alert is configured with a low throttle time (time interval). You can increase the throttle time by editing the alert, selecting the throttle checkbox, and entering *Suppress triggering for* the time interval needed between the subsequent triggers of the alert. For example, if *Suppress triggering for* is set to 1 hour, the alert triggers every hour.