Efficient OpenShift operations with Red Hat Insights

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Red Hat Insights focuses on 3 themes:

- **Business**: Track and optimize spending
- **Operations**: Improve stability and performance
- **Security**: Reduce risk
What we do?

Gathers configuration and utilization data from Red Hat® products

Analyzes the data based on Red Hat knowledge and expertise

Generates and prioritizes insights for you to take action

How we do it?

Thousands
Red Hat support, security, and product engineering experts

Hundreds of Thousands
Validated solutions, CVE, Erratas, and knowledge base articles

Millions
Customer support cases, threat feeds, and connected data points

Why it matters?

Operations, Performance, and Availability issues addressed at scale by proactively identifying, prioritizing and remediating risks

Reduce Support Costs by proactively identifying issues and feeding Red Hat BizIntel systems

Enhancing Subscription value through high value touch-points that differentiate Red Hat portfolio services
Red Hat Insights

Aligning themes to services across platforms

Business
- Track and optimize spending
  - Subscriptions
  - Resource Optimization

Operations
- Improve stability and performance
  - Advisor, drift, inventory, image builder, patch
  - Advisor, Clusters, Drift, Job Explorer, Reports

Security
- Reduce risk
  - Vulnerability, compliance, malware, policies
  - Vulnerability, Policies

Efficient hybrid-cloud scale

Insights analytics/Ecosystem

https://console.redhat.com/openshift/insights
Why OpenShift needs Insights?

**Insights adds value for OpenShift**
The services provide a differentiation from other Kubernetes distributions

**Insights increases OpenShift usage**
Through best practices and actionable actions that improve operations and reduce risks

**Insights improve the product quality**
Data from customers in a feedback loop on usage and errors to developers and product managers

**Insights is OpenShift**
Insights is included with the OpenShift subscription and is provided as part of the OpenShift console services.

console.redhat.com/openshift/insights
**Business**

Track and optimize spending

“FINsights”

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**Subscriptions**

- Frictionless cluster scaling & account-level visibility of multi-cluster usage
  - Account level view of subscription utilization
  - Automatic utilization reporting for connected clusters.
  - Simple cluster and multi-cluster scaling

**Cost Management**

- Helps you visualize and distribute Red Hat OpenShift costs into meaningful items.
  - Cost visibility and allocation
  - Report fully-loaded per-project cost to bill internal/external customers in your preferred currency
  - Change developers and operator behaviours on premise, on clouds, on demand, multicloud..

**Resource Optimization**

(future feature)

- Visualize resource utilization in Cost Management service
  - Actionable recommendations for optimized performance and cost
  - Capacity planning for OpenShift clusters
  - Best-sizing for pods, use your cluster to your desired maximum utilization
  - Machine Learning powered
Subscriptions: Awareness of subscription utilization across your entire estate

OpenShift Container Platform

Monitor your OpenShift Container Platform usage for both Annual and On-Demand subscriptions. Learn more about Subscriptions reporting.

On-Demand subscriptions

Current systems

Filter by name

Name: f5078ece-0fb6-4afe-bfbf-05b349edbee4
Cores: 16
Last seen: 15 hours ago

Filter by SLA

Cores

Subscription threshold

Current systems

Filter by name

Name: f5078ece-0fb6-4afe-bfbf-05b349edbee4
Cores: 16
Last seen: 15 hours ago

Filter by SLA

Cores

Subscription threshold
Cost management: Show how resources contribute to costs

Red Hat Insights for Red Hat OpenShift

Cost Management Overview

Perspective: All OpenShift

All OpenShift cost

$800.71

CPU usage and requests

Memory usage and requests

Volume usage and requests
Advisor

Identifies availability, performance, stability, and security risk analysis

- Analyzes Remote Health data (Insights + Telemetry) data to provide recommendations
- Recommendations cover the infrastructure and service layers of OpenShift.
- Provides predictive findings and prescriptive information on how to resolve.
- Integrates with Notifications, OpenShift Web Console and Advanced Cluster Manager

Remote Health Analytics

Improves Support efficiency, impacts Product decisions for connected clusters

- Faster support cycle - support has detailed cluster analysis data and fleet matching data for each support case
- Safer upgrades - remote health data used to analysis cluster upgrade edges and prevent potential upgrade failures
- Product decisions - product review fleet level analysis to prevent issues, improve product quality and prioritize new features
## Advisor: Availability, performance, stability, and security risk analysis

### Clusters Impacted: 1 or more

<table>
<thead>
<tr>
<th>Name</th>
<th>Added</th>
<th>Category</th>
<th>Total Risk</th>
<th>Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster upgrade will fail when default SCC gets changed</td>
<td>2 years ago</td>
<td>Service Availability</td>
<td>Important</td>
<td>1</td>
</tr>
<tr>
<td>Workloads are still using the deprecated APIs which will be removed in the next release</td>
<td>4 months ago</td>
<td>Service Availability</td>
<td>Important</td>
<td>3</td>
</tr>
<tr>
<td>SystemMemoryExceedsReservation alerts when the system daemons memory usage on nodes exceeds 90% of the reservation for them</td>
<td>3 months ago</td>
<td>Service Availability</td>
<td>Important</td>
<td>1</td>
</tr>
<tr>
<td>The running OpenShift version has reached its End of Life</td>
<td>2 years ago</td>
<td>Service Availability</td>
<td>Moderate</td>
<td>1</td>
</tr>
<tr>
<td>Prometheus metrics data will be lost when the Prometheus pod is restarted or recreated</td>
<td>1 year ago</td>
<td>Service Availability</td>
<td>Moderate</td>
<td>33</td>
</tr>
<tr>
<td>An OCP node behaves unexpectedly when it doesn’t meet the minimum resource requirements</td>
<td>2 years ago</td>
<td>Performance</td>
<td>Moderate</td>
<td>1</td>
</tr>
<tr>
<td>The authentication operator is unexpectedly degraded when cluster is configured to use a cluster-wide proxy</td>
<td>2 years ago</td>
<td>Security, Service Availability</td>
<td>Moderate</td>
<td>1</td>
</tr>
<tr>
<td>CVE-2021-30465: runc vulnerable to privilege escalation</td>
<td>8 months ago</td>
<td>Security</td>
<td>Moderate</td>
<td>1</td>
</tr>
<tr>
<td>Nodes will become Not Ready due to a CRI-O PID leak in the running OpenShift Container Platform version</td>
<td>5 months ago</td>
<td>Service Availability</td>
<td>Moderate</td>
<td>11</td>
</tr>
<tr>
<td>Pods could fail to start if openshift-samples is degraded due to FailedImageImport which is caused by a hiccup while talking to the Red Hat registry</td>
<td>2 years ago</td>
<td>Service Availability</td>
<td>Moderate</td>
<td>1</td>
</tr>
</tbody>
</table>
Support efficiency: Fast support turnaround for connected clusters

Problem Statement: kubelet degraded

Description:
What problem/issue/behavior are you having trouble with? What do you expect to see?
Recently we added infra nodes by using worker machine set and moved components like Router, image registry and monitoring after that some operators showing degraded.
cluster operator degraded, cluster operator down and kubelet .version this things are down

Where are you experiencing the behavior? What environment?
openshift container platform

Hello,

Welcome to Red Hat Technical Support.
My name is from the OpenShift group of Engineers and I'll be assisting you with this service request.

I understand you have some cluster operators in degraded state post adding infra nodes. From the telemetry data, I can see the issue is probably occurring due to wrong configuration done in cluster monitoring configmap.

---
Reason: InvalidConfiguration
- Message: Failed to rollout the stack. Error: the Cluster Monitoring ConfigMap could not be parsed: error converting YAML to JSON: yaml: line 27: did not find expected key
- LastTransition: 2021-05-24T15:10:05Z
Product decisions: Alerts on fleet issues, detailed platform information, immediate engineering response.
Security
Manage & reduce risk

Vulnerability

Identify common vulnerabilities and exposures (CVEs)

- Analyzes the infrastructure and service layers of OpenShift for Red Hat content
- Triage and prioritize CVEs that impact your OCP core infrastructure
- Identify which clusters are affected and exposed
- For workload security consider using Red Hat Advanced Cluster Security (also available asaaS)
## Vulnerability: Identify common vulnerabilities and exposures (CVEs)

<table>
<thead>
<tr>
<th>CVE ID</th>
<th>Publish date</th>
<th>Severity</th>
<th>CVSS base score</th>
<th>Exposed clusters</th>
<th>Exposed images</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVE-2022-28199</td>
<td>30 Aug 2022</td>
<td>Moderate</td>
<td>6.5</td>
<td>1</td>
<td>1</td>
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<tr>
<td>CVE-2022-2132</td>
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<td>Important</td>
<td>8.6</td>
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<td>1</td>
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<td>CVE-2022-2526</td>
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<td>9.8</td>
<td>7</td>
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<tr>
<td>CVE-2022-29164</td>
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<td>Important</td>
<td>7.4</td>
<td>7</td>
<td>121</td>
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<tr>
<td>CVE-2022-0670</td>
<td>21 July 2022</td>
<td>Moderate</td>
<td>8.1</td>
<td>1</td>
<td>4</td>
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<tr>
<td>CVE-2022-2067</td>
<td>05 July 2022</td>
<td>Moderate</td>
<td>5.3</td>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>CVE-2022-34903</td>
<td>30 June 2022</td>
<td>Moderate</td>
<td>5.9</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>CVE-2022-32206</td>
<td>27 June 2022</td>
<td>Moderate</td>
<td>6.5</td>
<td>6</td>
<td>108</td>
</tr>
<tr>
<td>CVE-2022-32208</td>
<td>27 June 2022</td>
<td>Moderate</td>
<td>5.3</td>
<td>6</td>
<td>108</td>
</tr>
<tr>
<td>CVE-2022-2068</td>
<td>21 June 2022</td>
<td>Moderate</td>
<td>6.7</td>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>CVE-2022-32250</td>
<td>31 May 2022</td>
<td>Important</td>
<td>7.8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CVE-2022-3997</td>
<td>25 May 2022</td>
<td>Moderate</td>
<td>7.8</td>
<td>4</td>
<td>29</td>
</tr>
<tr>
<td>CVE-2022-927</td>
<td>22 May 2022</td>
<td>Moderate</td>
<td>5.5</td>
<td>4</td>
<td>29</td>
</tr>
</tbody>
</table>
Insights Integrations
Additional features

**Full support for managed offerings**
- Recommendations specific to managed clusters (ARO/ROSA)
- Deployment validation and best practices for operators/workloads

**Simple Content Access**
- Access to Red Hat content from OpenShift Pipelines

**Support Case integration**
- Insights Recommendations for connected clusters when opening a new support case

**Notifications and events**
- Insights events available in notifications, emails, integration with Slack, Splunk, Snow, Grafana, ..
- ACM integration, OCP WebConsole widget
Integrations are available where you need them

Insights in your current workflows!

Integrate system data and Insights knowledge into your existing tools and processes.

Integrations make it easy to put events, reports, and inventory in front of decision makers where they work.

<table>
<thead>
<tr>
<th>Self-configured integration options</th>
<th>Certified marketplace integration options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Webhooks</td>
<td>splunk &gt;</td>
</tr>
<tr>
<td>“Push” events via HTTP</td>
<td>servicenow</td>
</tr>
<tr>
<td>Programmatic access</td>
<td></td>
</tr>
</tbody>
</table>

Integrations include:
- Slack
- Grafana
Boost your IT operations

Go to cloud.redhat.com today

Get access to our product page: http://redhat.com/insights

Read our blog: https://www.redhat.com/en/blog/channel/red-hat-insights

Go to Red Hat Insights: cloud.redhat.com
Thank you

linkedin.com/company/red-hat

facebook.com/redhatinc

youtube.com/user/RedHatVideos
twitter.com/RedHat
You remain in complete control of your data
Before data is sent, you have the option to inspect and redact information

Red Hat Insights relies only on high-level metadata
Only the minimum system metadata needed is collected to analyze and identify issues for supported platforms.

Example types of data used

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic system facts</td>
<td></td>
</tr>
<tr>
<td>Uptime</td>
<td></td>
</tr>
<tr>
<td>Architecture</td>
<td></td>
</tr>
<tr>
<td>Image SHAs</td>
<td></td>
</tr>
<tr>
<td>Alerts</td>
<td></td>
</tr>
</tbody>
</table>

Common security questions, answered:
https://cloud.redhat.com/security/insights
UI Feedback gets captured in Jira and creates a trackable artifact.