

Red Hat Advanced Cluster Management for Kubernetes

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Product overview

Question: What is Red Hat Advanced Cluster Management for Kubernetes?

Answer: Red Hat Advanced Cluster Management for Kubernetes provides end-to-end management visibility and control to manage your clusters and application life cycle, including security and compliance for your entire Kubernetes domain across multiple datacenters and public clouds.

It provides a single view to manage your Kubernetes clusters. Easily provision new Red Hat OpenShift clusters across: Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP), bare metal and vSphere . In addition, existing Red Hat OpenShift clusters can be imported and managed, like Red Hat OpenShift on IBM Cloud , Azure Red Hat OpenShift , OpenShift Dedicated, Red Hat OpenShift on OpenStack, Red Hat OpenShift on IBM Z, as well as public cloud Kubernetes clusters like EKS, IKS, AKS, and GKE.

Question: What are the key use cases of Red Hat Advanced Cluster Management?

Answer:
Unified multicluster management

- Centrally create, update, and delete Kubernetes clusters across multiple private and public clouds.
- Search, find, and modify any Kubernetes resource across the entire domain.
- Quickly troubleshoot and resolve issues across your federated domain.

Policy-based governance, risk, and compliance

- Centrally set and enforce policies for security, applications, and infrastructure.
- Quickly visualize detailed auditing on configuration of applications and clusters.
- Gain immediate visibility into compliance posture based on your defined standards.

Advanced application life-cycle management

- Easily deploy applications at scale.
- Deploy applications from multiple sources.
- Quickly visualize application relationships across clusters.

Multicluster observability for health and optimization

- Get an overview of cluster health and optimization using customized and out-of-the-box dashboards that can store long-term data.
- Easily sort, filter, and scan health and performance for individual clusters or aggregated multiclusters.
- Troubleshoot faster using the dynamic search and visual web terminal capabilities.

Question: How does Red Hat Advanced Cluster Management extend the value of Red Hat OpenShift Container Platform?

Answer: OpenShift Container Platform is the proven Kubernetes platform. Red Hat Advanced Cluster Management adds more value to OpenShift Container Platform by extending your OpenShift Container Platform applications into a multicluster environment. Together, OpenShift Container Platform and Red Hat Advanced Cluster Management deliver the platform and capabilities that are critical to addressing the challenges organizations face as they work across a range of environments, including multiple datacenters and private, hybrid, and public clouds.

Red Hat OpenShift focuses on the single cluster application model and provides an excellent framework for continuous integration/continuous delivery (CI/CD). Red Hat Advanced Cluster Management models applications for multicluster deployment with enterprise features that help ensure both the rapid deployment of an application and the resilience of your infrastructure. Stand up new clusters and let the subscription framework handle the continuous delivery of your applications across all your environments.

Question: What is the latest version of Red Hat Advanced Cluster Management?

Answer: The latest version is 2.2, which went live in March 2021.

Question: What are the key features in the 2.2 release?

Answer:
Manage Red Hat OpenShift everywhere

- Import and fully manage your managed OpenShift Container Platform clusters such as Azure RedHat OpenShift and OpenShift Dedicated and run the Red Hat Advanced Cluster Management hub on them.

Multicluster observability

- Import custom metrics with enhanced multicluster metric aggregation with the customized allowlist.
- Customize metrics based on predefined metrics and metrics you define.
- Use customized Grafana dashboards.
- Customize your own Grafana dashboards for fleet management.

Expand and embrace open source

- Contribute to and ship Open Policy Agent (OPA) as part of Red Hat Advanced Cluster Management.
- Support OPA policies by distributing the OPA engine to the fleet. There are new policies that will deploy OPA or placement rules.
- Get compliance operator support. Run OpenSCAP scans (via compliance operator) against the fleet, and surface the compliance results in Red Hat Advanced Cluster Management.
- Get integration with Argo CD. Use the fleet information from Red Hat Advanced Cluster Management and feed it to Argo CD, providing your applications a compliant and more secure cluster fleet. Red Hat Advanced Cluster Management integration with Argo CD allows you to easily expand your applications' cluster footprint quickly and more securely.

Question: What were the key features in the 2.1 release?

Answer:

- Red Hat OpenShift management everywhere. We are expanding our cluster life-cycle management footprint to go beyond the currently supported public cloud providers (AWS, Microsoft Azure, and Google Cloud Platform) by providing Red Hat OpenShift cluster deployments on bare metal (both physical and virtual) and on VMware vSphere virtualized infrastructure.
- Automation with Red Hat Ansible® Automation Platform. For the release of Red Hat Advanced Cluster Management 2.1, we will be integrating Ansible Automation Platform for the application life-cycle management as a technology preview. For example, an application deployment or update will call Ansible Automation Platform before or after the Kubernetes update to configure a load balancer, update a database, or open port in a firewall to make the application ready for use.
- Enhanced observability. We are enhancing the site reliability engineering experience. By collecting Prometheus metrics in a scalable architecture and providing out of the box multicluster dashboards, you can store long-term historical data to get an overview of multicluster health and optimization. Within the cluster view, integration with Grafana will enable ad hoc exploration of all your clusters. Integration with Red Hat Advanced Cluster Management will give you access to over a hundred metrics for an in-depth look at cluster health and optimization.
- Simplified application creation experience. Version 2.1 improves the application creation experience by making it more efficient to create and deploy applications from your development toolchains. Version 2.1 lets you create an app using an intuitive form with contextual help so you can define all of your application components without dealing with YAML. You can find which applications are using which placement rules and what channels they are subscribed to more effectively. Version 2.1 also enhances the cluster topology view by adding a visual cluster topology resource status to identify the status of any resources associated with your application.

- More out of the box (OOTB) security policies. Version 2.1 includes more OOTB security policies such as certificate manager to distribute the certificates to the cluster fleet and capture information that the certificate has expired.

Packaging

Question: Is Red Hat Advanced Cluster Management included as part of the OpenShift Container Platform subscription?

Answer: No, it is not part of the OpenShift Container Platform subscription. It is offered separately via standalone SKU.

Question: Will Red Hat Advanced Cluster Management be bundled with other subscriptions from Red Hat?

Answer: It is not bundled with any other subscriptions at this time.

Question: What is the pricing for Red Hat Advanced Cluster Management subscriptions?

Answer: Pricing uses the same metric as OpenShift Container Platform, per core pair, and similarly, only the worker nodes are licensed. For example, if a client is buying 2,000 core pairs of OpenShift Container Platform, adding Red Hat Advanced Cluster Management to the entire fleet requires 2,000 core pairs of Red Hat Advanced Cluster Management. The same concept applies to renewals.

Question: When can I purchase Red Hat Advanced Cluster Management subscriptions?

Answer: Red Hat Advanced Cluster Management is now generally available. Please contact your account rep for more details.

Question: Can I evaluate Red Hat Advanced Cluster Management for Kubernetes?

Answer: You can request for an evaluation through [this link](#).

Technical details

Question: Does Red Hat Advanced Cluster Management run as a service (e.g., cloud.redhat.com) or on-premise?

Answer: Red Hat Advanced Cluster Management installs and runs on Red Hat OpenShift, so customers can take advantage of it wherever they run their OpenShift clusters.

Question: How is Red Hat Advanced Cluster Management deployed?

Answer: Red Hat Advanced Cluster Management is deployed via an operator and runs on OpenShift Container Platform 4.5.x and above and manages 3.11, 4.5.x, and above.

Question: What are the technology specifications for installing Red Hat Advanced Cluster Management?

Answer:
Hub cluster

- Operator-based installation
- Requires Red Hat OpenShift Container Platform 4.5.x and above

Managed clusters

- Full life-cycle management: OpenShift Container Platform 4.5.x and above. Import and manage: OpenShift Container Platform 3.11.
- Limited life-cycle support for managed Kubernetes clusters:
 - Red Hat OpenShift on IBM Cloud
 - Azure Red Hat OpenShift
 - OpenShift Dedicated
 - Red Hat OpenShift on IBM Z
 - Red Hat OpenShift on OpenStack®
 - Amazon Elastic Kubernetes Service (EKS)
 - Azure Kubernetes Service (AKS)
 - IBM Cloud Kubernetes Service (IKS)
 - Google Kubernetes Service (GKE)
- Red Hat Advanced Cluster Management provides observability, application life-cycle management, and policy-based management of imported managed clusters.
- In addition, Red Hat Advanced Cluster Management provides full cluster life-cycle management (create, upgrade, destroy) with additional security compliance capability for OpenShift Container Platform clusters.

High availability

- Supports OpenShift Container Platform availability zone

Resource requirements

- 3 master nodes, 3 infrastructure nodes, 6vCPU, and 16GB RAM

Question: Can Red Hat Advanced Cluster Management compare application versions across different clusters and environments?

Answer: Yes, using the application topology view, customers can compare application resources that have been deployed using Red Hat Advanced Cluster Management gitops via subscription and channel. For example, customers can compare how an application is configured in development (cluster A) compared to quality assurance (cluster B).

Question: Does Red Hat Advanced Cluster Management integrate with any other Red Hat solutions?

Answer: Yes, we now support pre- and post hooks to Ansible Automation Platform inside the application builder engine. This feature is currently in technology preview.

Question: Does Red Hat Advanced Cluster Management have an alert system or advanced monitoring for clusters?

Answer: Yes, with the integration of Grafana and Alertmanager on the centralized hub cluster, you can create alerts that trigger based on specific issues defined by the user. For monitoring, we use Grafana and the Thanos integration to query the object store and provide visibility into clusters.

Question: Will Red Hat Advanced Cluster Management work in a disconnected environment?

Answer: Yes, Red Hat Advanced Cluster Management runs as an operator on Red Hat OpenShift and can be deployed wherever OpenShift runs, which includes disconnected environments.

Question: Can Red Hat Advanced Cluster Management run behind an HTTP proxy (i.e., not disconnected but connected to the internet via a proxy)?

Answer: Generally, customers will configure a global load balancer that may incorporate the proxy configuration therein. There are some additional steps for HTTP proxy configuration that are documented as well.

Question: Are Red Hat OpenShift-managed services (Red Hat OpenShift Dedicated, Microsoft Azure Red Hat OpenShift) supported as well?

Answer: Yes, they are. Red Hat Advanced Cluster Management manages Red Hat OpenShift but not any of the underlying infrastructure.

Question: Does Red Hat Advanced Cluster Management support any Kubernetes clusters, even those not based on OpenShift Container Platform?

Answer: In the latest Red Hat Advanced Cluster Management 2.2 release, it can support the import and management of managed clusters like Red Hat OpenShift on IBM Cloud, Azure Red Hat OpenShift, OpenShift Dedicated, Amazon Elastic Kubernetes Service (EKS), Azure Kubernetes Service (AKS), IBM Cloud Kubernetes Service (IKS), and Google Kubernetes Service (GKE). We can create, upgrade, and destroy OpenShift Container Platform clusters on AWS, Google, Microsoft Azure, bare metal, and VMware vSphere.

Question: Does the interface support role-based access control (RBAC) and filtered views? (e.g., split environments into different groupings and the ability to allow a specific user or group of users to manage those objects and only those objects)

Answer: Red Hat Advanced Cluster Management is backed by OpenShift Container Platform for RBAC. Any permissions set through OpenShift Container Platform will cascade down to Red Hat Advanced Cluster Management.

Question: Red Hat Advanced Cluster Management will also cover multicluster life-cycle management, including cluster installation. What role, if any, will Hive play? Or will this product replace Hive?

Answer: [Hive](#) is the application programming interface (API) that Red Hat Advanced Cluster Management will include and use to deploy OpenShift Container Platform clusters on infrastructure—Amazon AWS, Google Cloud, Microsoft Azure, bare metal, and VMWare vSphere.

Question: Can Red Hat Advanced Cluster Management *discover* what a cluster looks like and take control of its resources? Or must everything always be deployed, controlled, and managed from Red Hat Advanced Cluster Management?

Answer: Yes, you can import existing clusters, and Red Hat Advanced Cluster Management can *discover* the cluster resources. There is no need to synchronize or update a managed cluster—the spoke controllers run automatically to ensure the state is always current on the hub.

Question: What is the deployment model of Red Hat Advanced Cluster Management? Does it install on top of OpenShift Container Platform or Kubernetes public? What is the additional infrastructure that a customer must add?

Answer: Red Hat Advanced Cluster Management runs only on OpenShift Container Platform. It installs as an operator via Operator Hub. Red Hat Advanced Cluster Management will run on a three master, two worker cluster with minimum node sizing at 6 vCPU and 16GB RAM.

Question: Considering deployment architecture, will Red Hat Advanced Cluster Management need to exist in a central cluster? Or can it be deployed in two or three different sites and clustered so that it withstands any disruption to one cluster?

Answer: The hub (OpenShift Container Platform cluster running Red Hat Advanced Cluster Management) is configured to be highly available for disaster recovery with a minimum configuration of three master nodes. There is not currently any hub failover implemented out of the box, but various methods are available to recover and failover an Open Shift Container Platform cluster.

Question: How easy is it to install and configure Red Hat Advanced Cluster Management?

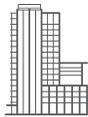
Answer: You can complete an end-to-end installation in a matter of minutes. It is installed as an operator (via the Operator Hub) on top of Red Hat OpenShift 4.5.x and above.

Question: What about connectivity? What is needed?

Answer: Red Hat Advanced Cluster Management uses an https-based web interface. The remote-managed clusters communicate with the hub over a Transport Layer Security (TLS)-secured channel in its own namespace with its own certificates.

Question: Where do I go for more information on Red Hat Advanced Cluster Management?

Answer: To learn more about Red Hat Advanced Cluster Management and request access for a tech preview, visit our website at redhat.com/clustermanagement.



About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



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