

**Red Hat**





# OpenShift

Day Two Operations

# Day Two Operations Overview

## Enabling

Persistent Storage for the internal Registry  
and Prometheus

## Usermanagement

Connect to an User Repository  
Configuring RBAC

## Patching

Updating the Cluster

## Scaling

Adding / Deleting Nodes  
Autoscaling

# Enabling persistent storage

For Prometheus and the internal registry

⚙️ Administrator

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PersistentVolumes

PersistentVolumeClaims

StorageClasses

VolumeSnapshots

VolumeSnapshotClasses

VolumeSnapshotContents

### PersistentVolumes

Name

Search by name...

/

Name	Status	Claim	Capacity
pvc-acbd5fad-ebe3-41cc-9c55-8667f3965bcf	Bound	crc-image-registry-storage	30Gi

Expand all

Collapse all

Registry

1. OpenShift Container Platform registry overview

2. Image Registry Operator in OpenShift Container Platform

3. Setting up and configuring the registry

3.1. Configuring the registry for AWS user-provisioned infrastructure

3.1.1. Configuring a secret for the Image Registry Operator

3.1.2. Configuring registry storage for AWS with user-provisioned infrastructure

3.1.3. Image Registry Operator configuration parameters for AWS S3

3.2. Configuring the registry for GCP user-provisioned infrastructure

3.3. Configuring the registry for OpenStack user-provisioned infrastructure

3.4. Configuring the registry for Azure user-provisioned infrastructure

3.5. Configuring the registry for

## Chapter 3. Setting up and configuring the registry

### 3.1. Configuring the registry for AWS user-provisioned infrastructure

#### 3.1.1. Configuring a secret for the Image Registry Operator

In addition to the `configs.imageregistry.operator.openshift.io` and ConfigMap resources, configuration is provided to the Operator by a separate secret resource located within the `openshift-image-registry` namespace.

The `image-registry-private-configuration-user` secret provides credentials needed for storage access and management. It overrides the default credentials used by the Operator, if default credentials were found.

For S3 on AWS storage, the secret is expected to contain two keys:

- `REGISTRY_STORAGE_S3_ACCESSKEY`
- `REGISTRY_STORAGE_S3_SECRETKEY`

**Procedure**

- Create an OpenShift Container Platform secret that contains the required keys.

```
$ oc create secret generic image-registry-private-configuration-user --
```

# User Management

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User Management

Administration

Cluster Settings

Namespaces

ResourceQuotas

LimitRanges

CustomResourceDefinitions

Configuration > OAuth details

cluster

Details

YAML

OAuth details

Name

cluster

Labels

No labels

Annotations

5 annotations

Access token max age

Created at

7. Dez. 2022, 06:40

Owner

CV version

Identity providers

Identity providers determine how users log into the cluster.

Add

Basic Authentication

GitHub

GitLab

Google

HTPasswd

Type

HTPasswd

Add Identity Provider: HTPasswd

HTPasswd validates usernames and passwords against a flat file generated using the htpasswd command.

Name

IAM-Local

Unique name of the new identity provider. This cannot be

HTPasswd file

users.htpasswd

Upload an HTPasswd file created using the htpasswd co

deve loper: \$2y\$05\$CkpjhWIZ46d3xu0igEsq2uH  
e  
admin: \$2y\$05\$ip/Ch45B4wbvQHk/pzRJQuRqy24  
alfbach: \$2y\$05\$1JbyWvzJKB4PKLEVqwh1QeXjK  
wpernath: \$2y\$05\$Z9w8MTwzPW0rbJ.J2cZAR.UJ  
ast: \$2y\$05\$4/VuIwPJ970NXVH0XLgkteIpngGFA  
user1: \$2y\$05\$GhN2X3SfnZoX.sZIuhw9BucNoXM  
user2: \$2y\$05\$u7X7CRrSGcBWYePtP90//u4Ee2y  
user3: \$2y\$05\$pbU0Yt9Th0pCwE8hP8fH30oNzhx

Add

Cancel

Create Group

Create by manually entering YAML or JSON definitions, or by dragging and dropping a file into the ed

apiVersion: user.openshift.io/v1  
kind: Group  
metadata:  
 name: admins  
users:  
 - alfbach  
 - admin

# OpenShift RBAC

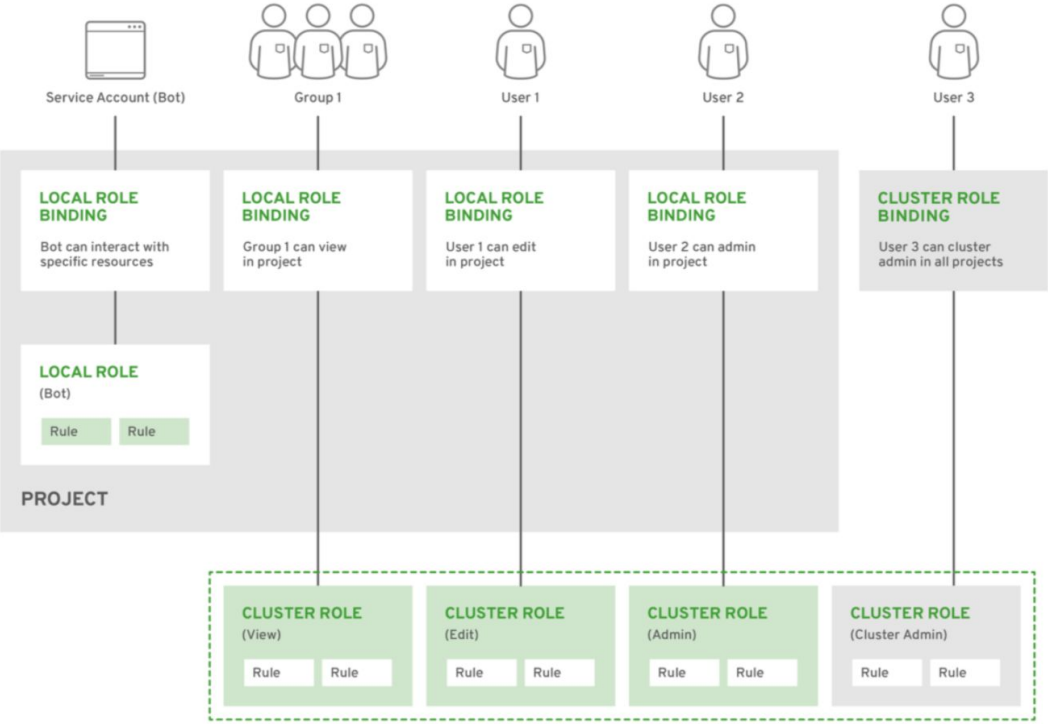
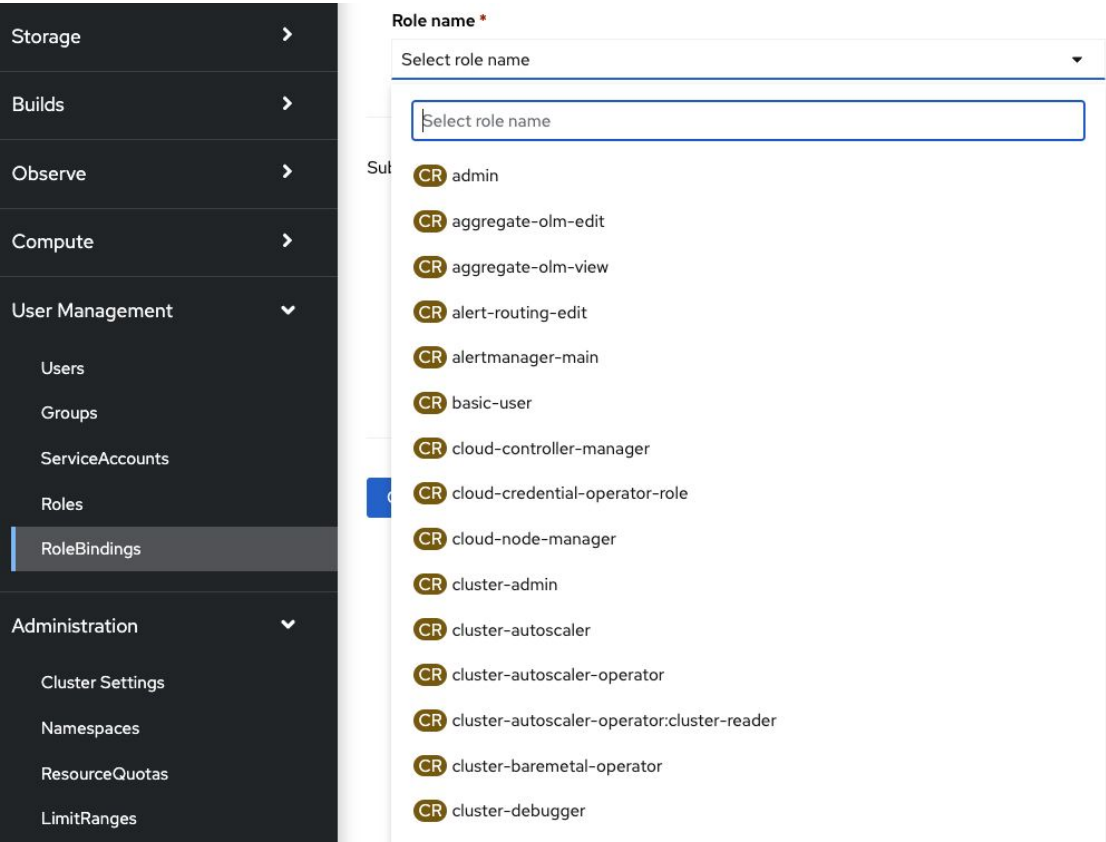


Figure 12 - Authorization Relationships



[RBAC DOCU](#)

# Updating

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Cluster Settings

DetailsClusterOperatorsConfiguration

This cluster should not be updated to the next minor version.

Cluster should not be upgraded between minor versions for multiple reasons: ClusterVersionOverridesSet, AdminAckRequired

Disabling ownership via cluster version overrides prevents upgrades. Please remove overrides before continuing.

Kubernetes 1.25 and therefore OpenShift 4.12 remove several APIs which require admin consideration. Please see the knowledge article <https://access.redhat.com/articles/6955381> for details and instructions.

Current version

4.11.18

[View release notes](#)

Update status

Available updates

Channel

stable-4.11

Select a version

4.11.18

+ More

4.11.22

stable-4.11 channel

Subscription

[OpenShift Cluster Manager](#)

Service Level Agreement (SLA)

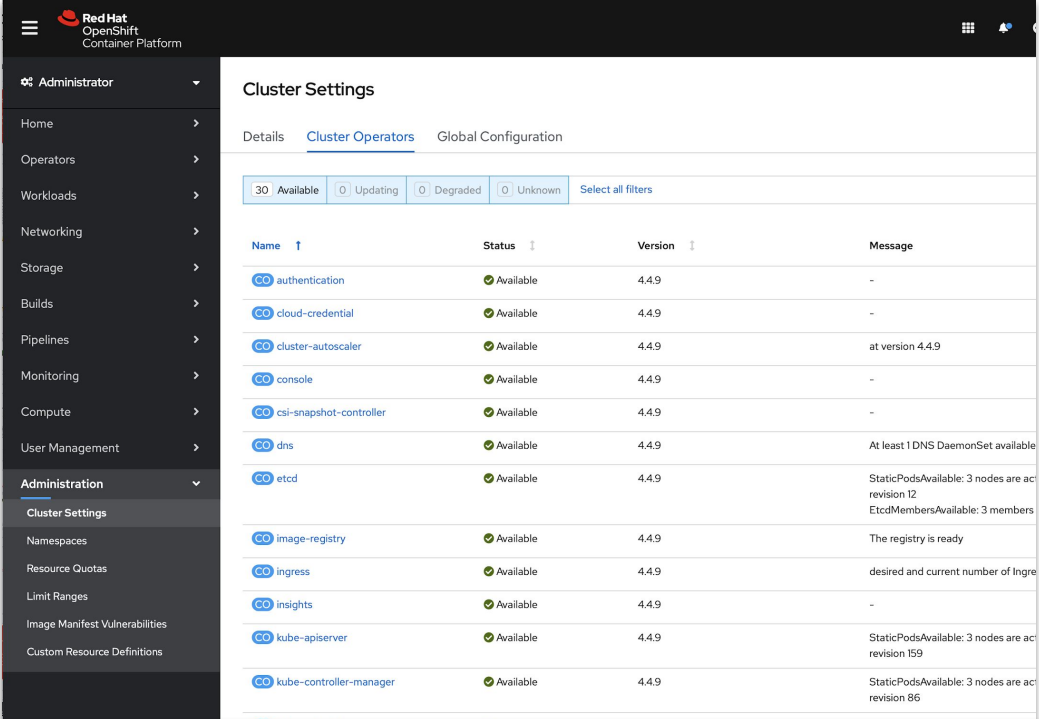
Self-support, 60 day trial

59 days remaining

[Manage subscription settings](#)

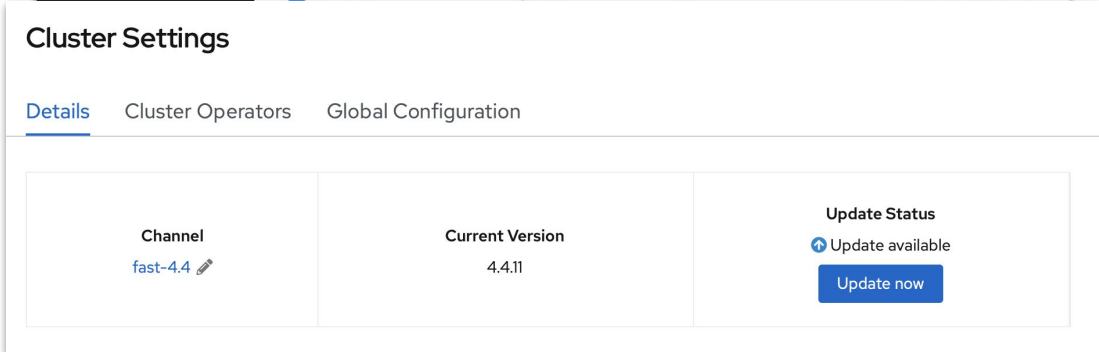
# Each OpenShift release is a collection of Operators

- 100% automated, in-place upgrade process
- 30 Operators run every major part of the platform:
  - Console, Monitoring, Authentication, Machine management, Kubernetes Control Plane, etcd, DNS, and more.
- Operators constantly strive to meet the desired state, merging admin config and Red Hat recommendations
- CI testing is constantly running install, upgrade and stress tests against groups of Operators



The screenshot shows the OpenShift Cluster Settings page. The left sidebar contains navigation links: Administrator, Home, Operators, Workloads, Networking, Storage, Builds, Pipelines, Monitoring, Compute, User Management, Administration, Cluster Settings, Namespaces, Resource Quotas, Limit Ranges, Image Manifest Vulnerabilities, and Custom Resource Definitions. The main content area is titled 'Cluster Settings' and has tabs for Details, Cluster Operators, and Global Configuration. Under the 'Cluster Operators' tab, there is a filter bar showing 30 Available, 0 Updating, 0 Degraded, and 0 Unknown operators. Below this is a table listing operators with columns for Name, Status, Version, and Message.

Name	Status	Version	Message
authentication	Available	4.4.9	-
cloud-credential	Available	4.4.9	-
cluster-autoscaler	Available	4.4.9	at version 4.4.9
console	Available	4.4.9	-
csi-snapshot-controller	Available	4.4.9	-
dns	Available	4.4.9	At least 1 DNS DaemonSet available
etcd	Available	4.4.9	StaticPodsAvailable: 3 nodes are ac revision 12 EtcdMembersAvailable: 3 members
image-registry	Available	4.4.9	The registry is ready
ingress	Available	4.4.9	desired and current number of Ingre
insights	Available	4.4.9	-
kube-apiserver	Available	4.4.9	StaticPodsAvailable: 3 nodes are ac revision 159
kube-controller-manager	Available	4.4.9	StaticPodsAvailable: 3 nodes are ac revision 86

This screenshot shows a detailed view of the Cluster Settings page, specifically the 'Details' tab. It displays three main sections: Channel, Current Version, and Update Status.

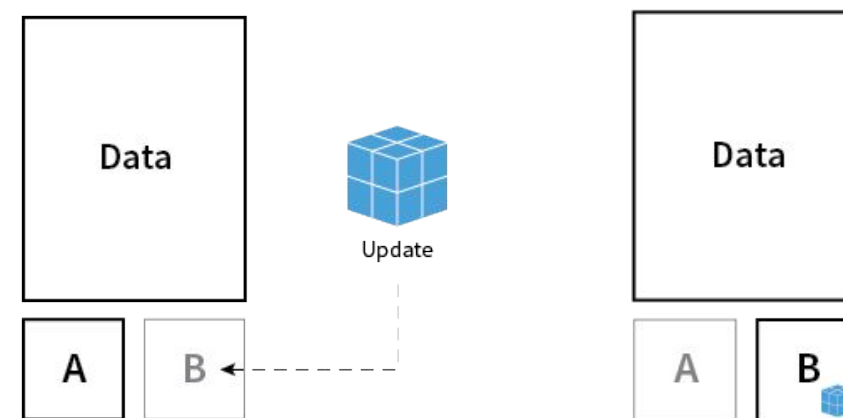
Channel	Current Version	Update Status
fast-4.4	4.4.11	Update available Update now



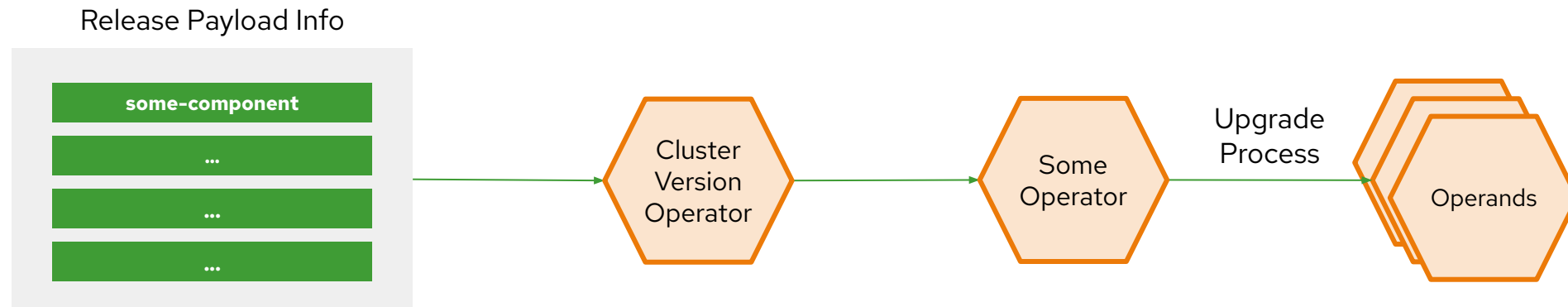
# Transactional updates with rpm-ostree

Transactional updates ensure that RHEL CoreOS is never altered during runtime. Rather it is booted directly into an always “known good” version.

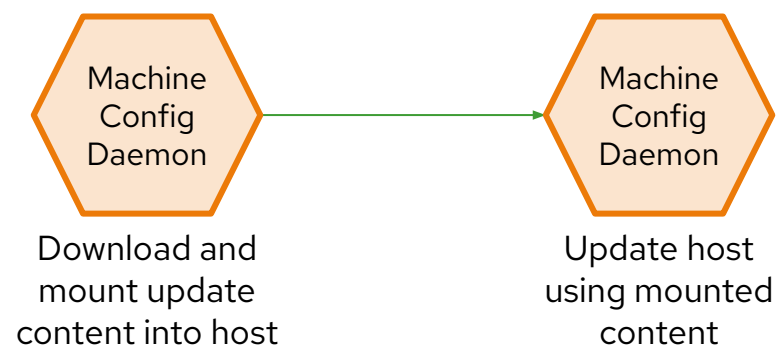
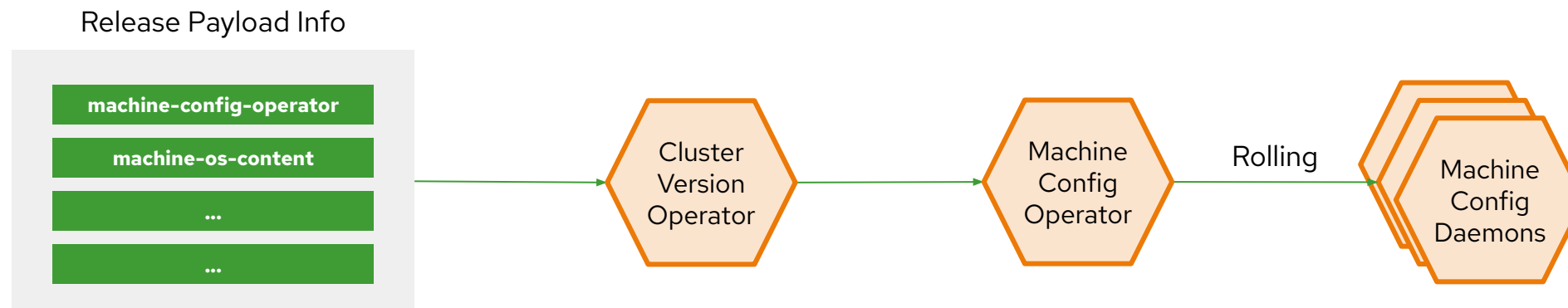
- ▶ Each OS update is versioned and tested as a complete image.
- ▶ OS binaries (/usr) are read-only
- ▶ OS updates encapsulated in container images
- ▶ file system and package layering available for hotfixes and debugging



# Over-the-air updates: Cluster Components



# Over-the-air updates: Nodes



# OpenShift Upgrades and Migrations

## Happy path = upgrade through each version

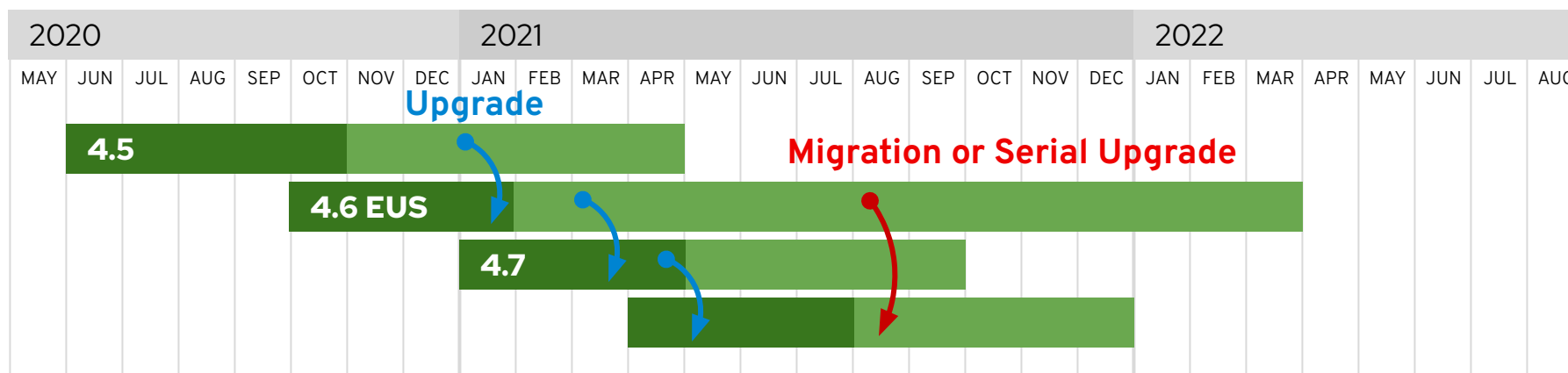
- On a regular cadence, upgrade to the next supported version.

## Optional path = migration tooling

- To skip versions or catch up, use the application migration tooling to move to a new cluster.

## What is Extended Update Support (EUS) ?

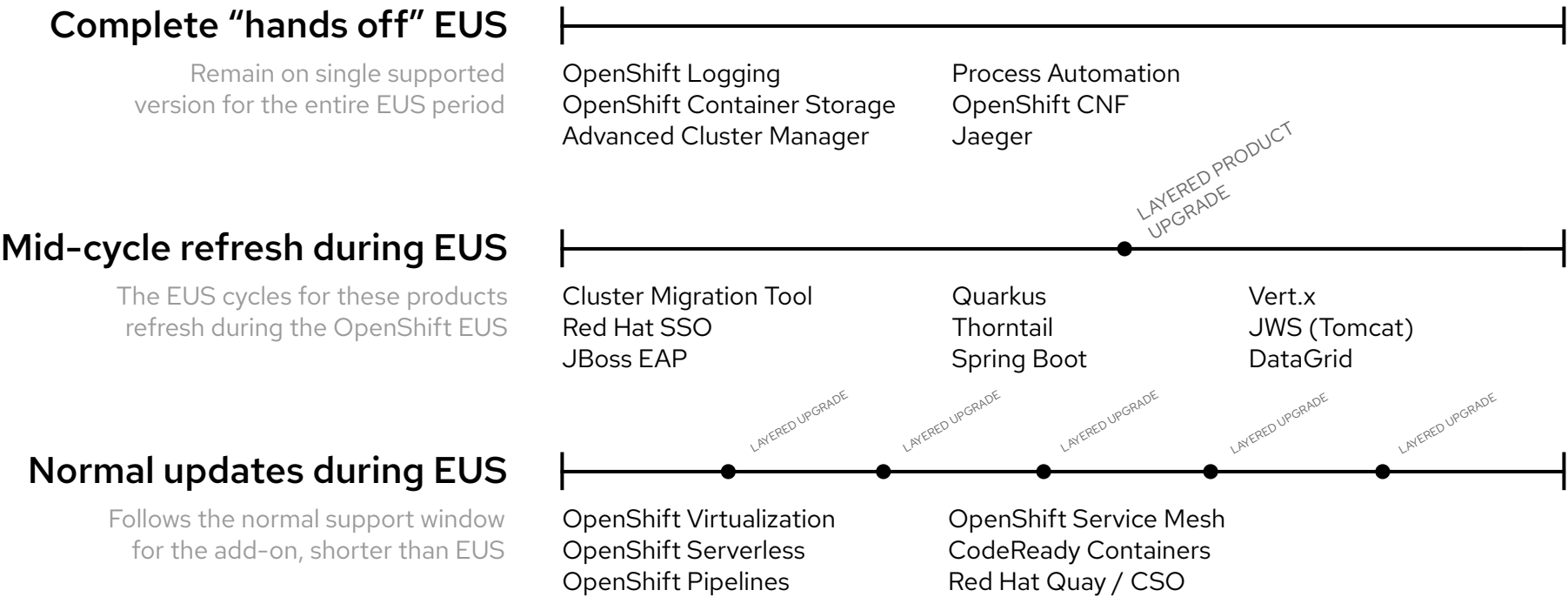
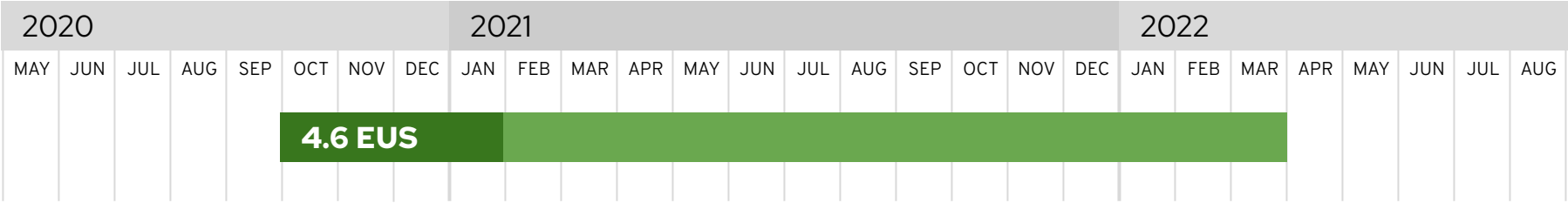
- Extended timeframe for critical security and bug fixes
- Work within a customer's release management philosophies
- Goal to provide a serial pathway to update from EUS to EUS
  - Augmented by Migration Tool and/or Advanced Cluster Management (ACM) based on use-case



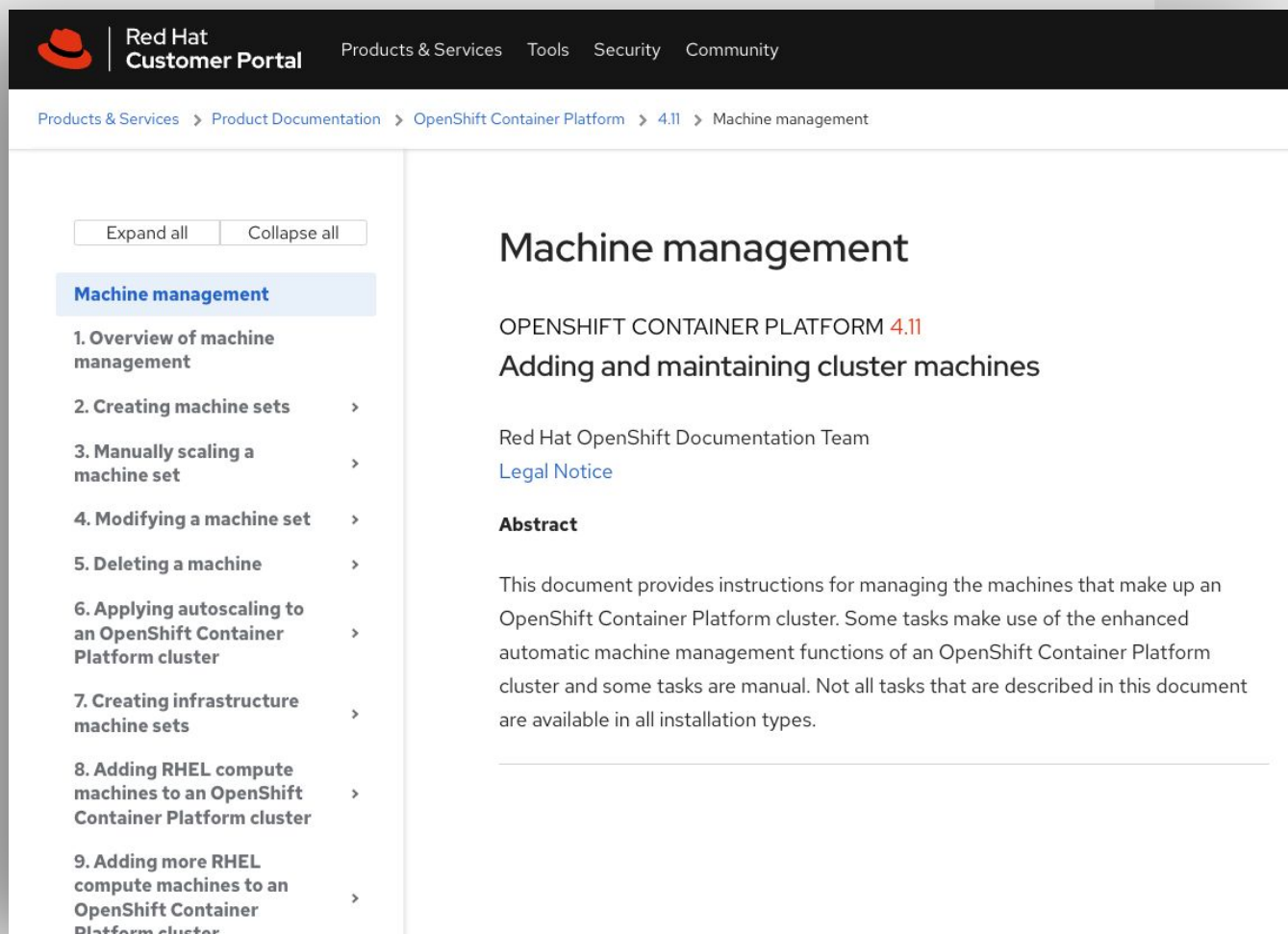
**N release**  
Full support, RFEs, bugfixes, security

**N-2 release**  
OTA pathway to N release, critical bugs and security

# 4.6 EUS for Layered Products/Add-ons



# Scaling



The screenshot displays the Red Hat Customer Portal interface. The top navigation bar includes the Red Hat logo, 'Red Hat Customer Portal', and links for 'Products & Services', 'Tools', 'Security', and 'Community'. Below this, a breadcrumb trail reads: 'Products & Services > Product Documentation > OpenShift Container Platform > 4.11 > Machine management'. On the left side, there is a sidebar with a table of contents for 'Machine management'. It includes buttons for 'Expand all' and 'Collapse all'. The table of contents lists nine items, with the first item, '1. Overview of machine management', highlighted in blue. The main content area on the right is titled 'Machine management' and contains the following text: 'OPENS SHIFT CONTAINER PLATFORM 4.11', 'Adding and maintaining cluster machines', 'Red Hat OpenShift Documentation Team', and a link to 'Legal Notice'. Below this is an 'Abstract' section which states: 'This document provides instructions for managing the machines that make up an OpenShift Container Platform cluster. Some tasks make use of the enhanced automatic machine management functions of an OpenShift Container Platform cluster and some tasks are manual. Not all tasks that are described in this document are available in all installation types.'

Red Hat Customer Portal

Products & Services Tools Security Community

Products & Services > Product Documentation > OpenShift Container Platform > 4.11 > Machine management

Expand all Collapse all

**Machine management**

- 1. Overview of machine management
- 2. Creating machine sets >
- 3. Manually scaling a machine set >
- 4. Modifying a machine set >
- 5. Deleting a machine >
- 6. Applying autoscaling to an OpenShift Container Platform cluster >
- 7. Creating infrastructure machine sets >
- 8. Adding RHEL compute machines to an OpenShift Container Platform cluster >
- 9. Adding more RHEL compute machines to an OpenShift Container Platform cluster >

## Machine management

OPENS SHIFT CONTAINER PLATFORM 4.11

### Adding and maintaining cluster machines

Red Hat OpenShift Documentation Team

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#### Abstract

This document provides instructions for managing the machines that make up an OpenShift Container Platform cluster. Some tasks make use of the enhanced automatic machine management functions of an OpenShift Container Platform cluster and some tasks are manual. Not all tasks that are described in this document are available in all installation types.

# Thank you

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