



Red Hat build of MicroShift 4.15

Updating

Updating MicroShift clusters

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Abstract

Learn to update Red Hat build of MicroShift clusters.

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CHAPTER 1. ABOUT RED HAT BUILD OF MICROSHIFT UPDATES

Updates are supported on Red Hat build of MicroShift beginning with the General Availability version 4.14. Supported updates include those from one minor version to the next in sequence, for example, from 4.14 to 4.15. Patch updates are also supported from z-stream to z-stream, for example 4.14.1 to 4.14.2.

1.1. UNDERSTANDING MICROSHIFT UPDATES

Red Hat build of MicroShift updates are supported on both **rpm-ostree** edge-deployed hosts and non-OSTree hosts. You can complete updates using the following methods:

- Embed the latest version of MicroShift in a new **rpm-ostree** system image such as Red Hat Enterprise Linux for Edge (RHEL for Edge). See * [Applying updates on an OSTree system](#)
- Manually update the RPMs on a non-OSTree system such as Red Hat Enterprise Linux (RHEL). See * [Applying updates manually with RPMs](#)



NOTE

Only **rpm-ostree** updates include automatic rollbacks.

1.1.1. RPM OSTree updates

Using the RHEL for Edge **rpm-ostree** update path allows for automated backup and system rollback in case any part of the update fails. You must build a new **rpm-ostree** image and embed the new MicroShift version in that image. The **rpm-ostree** image can be the same version or an updated version, but the versions of RHEL for Edge and MicroShift must be compatible.

Check following compatibility table for details:

Red Hat Device Edge release compatibility matrix

The two products of Red Hat Device Edge work together as a single solution for device-edge computing. To successfully pair your products, use the verified releases together for each as listed in the following table:

RHEL for Edge Version(s)	MicroShift Version	MicroShift Release Status	MicroShift Supported Updates
9.2, 9.3	4.15	Generally Available	4.15.0→4.15.z and 4.15→future minor version
9.2, 9.3	4.14	Generally Available	4.14.0→4.14.z and 4.14→4.15
9.2	4.13	Technology Preview	None
8.7	4.12	Developer Preview	None

1.1.2. Manual RPM updates

You can use the manual RPM update path to replace your existing version of MicroShift. The versions of RHEL and MicroShift must be compatible. Ensuring system health and completing additional system backups are manual processes.

1.1.3. Checking version update path

Before attempting an update of either Red Hat Device Edge component, determine which versions of MicroShift and RHEL for Edge or RHEL are installed. Plan for the versions of each that you intend to use.

Red Hat build of MicroShift update paths

- Generally Available Version 4.14 to 4.14.z or 4.15 on RHEL for Edge 9.2 or 9.3
- Generally Available Version 4.14 to 4.14.z or 4.15 on RHEL 9.2 or 9.3
- Generally Available Version 4.15 to 4.15.z on RHEL for Edge 9.2 or 9.3
- Generally Available Version 4.15 to 4.15.z on RHEL 9.2 or 9.3

CHAPTER 2. UPDATE OPTIONS WITH RED HAT BUILD OF MICROSHIFT AND RED HAT DEVICE EDGE

You can update Red Hat Enterprise Linux for Edge (RHEL for Edge) images or Red Hat Enterprise Linux (RHEL) with or without updating the Red Hat build of MicroShift version if the version combination is supported. See the following table for details:

Red Hat Device Edge release compatibility matrix

The two products of Red Hat Device Edge work together as a single solution for device-edge computing. To successfully pair your products, use the verified releases together for each as listed in the following table:

RHEL for Edge Version(s)	MicroShift Version	MicroShift Release Status	MicroShift Supported Updates
9.2, 9.3	4.15	Generally Available	4.15.0→4.15.z and 4.15→future minor version
9.2, 9.3	4.14	Generally Available	4.14.0→4.14.z and 4.14→4.15
9.2	4.13	Technology Preview	None
8.7	4.12	Developer Preview	None

2.1. CHECKING VERSION UPDATE PATH

Before attempting an update of either Red Hat Device Edge component, determine which versions of MicroShift and RHEL for Edge or RHEL are installed. Plan for the versions of each that you intend to use.

Red Hat build of MicroShift update paths

- Generally Available Version 4.14 to 4.14.z or 4.15 on RHEL for Edge 9.2 or 9.3
- Generally Available Version 4.14 to 4.14.z or 4.15 on RHEL 9.2 or 9.3
- Generally Available Version 4.15 to 4.15.z on RHEL for Edge 9.2 or 9.3
- Generally Available Version 4.15 to 4.15.z on RHEL 9.2 or 9.3



IMPORTANT

Updates of MicroShift from one minor version to the next must be in sequence. For example, you cannot update from 4.14 to 4.16. You must update 4.14 to 4.15 and so on.

2.2. STANDALONE MICROSHIFT UPDATES

You can update MicroShift without reinstalling your applications. RHEL or RHEL for Edge updates are also not required to update MicroShift, as long as the existing operating system is compatible with the new version of MicroShift that you want to use.

MicroShift operates as an in-place update and does not require removal of the previous version. Data backups beyond those required for the usual functioning of your applications are also not required.

2.2.1. RPM-OSTree updates

You can update MicroShift on an **rpm-ostree** system such as RHEL for Edge by building a new image containing the new version of MicroShift. Ensure that the version of the operating system you want to use is compatible with the new version of MicroShift that you update to.

The following features are available in the RHEL for Edge update path:

- The system automatically rolls back to a previous healthy system state if the update fails.
- Applications do not need to be reinstalled.
- You can update an application without updating MicroShift using this update type.
- The image you build can contain other updates as needed.

To begin a MicroShift update by embedding in a RHEL for Edge image, use the procedures in the following documentation:

- [Applying updates on an OSTree system](#)

To understand more about Greenboot, see the following documentation:

- [The Greenboot health check](#)
- [Greenboot workload health check scripts](#)

2.2.2. Manual RPM updates

You can update MicroShift manually on a non-OSTree system such as Red Hat Enterprise Linux (RHEL) by downloading and updating the RPMs. To complete this update type, use the subscription manager to access the repository containing the new RPMs. To begin a manual RPM update, use the procedures in the following documentation:

- [About updating MicroShift RPMs manually](#)

2.3. STANDALONE RHEL FOR EDGE UPDATES

You can update RHEL for Edge or RHEL without updating MicroShift, on the condition that the two versions are compatible. Check compatibilities before beginning an update. Use the RHEL for Edge documentation specific to your update path.

Additional resources

- [Managing RHEL for Edge images](#)

2.4. SIMULTANEOUS MICROSHIFT AND OPERATING SYSTEM UPDATES

You can update RHEL for Edge or RHEL and update MicroShift at the same time, on the condition that the versions are compatible. Check for compatibility before beginning an update. First use the RHEL for Edge and RHEL documentation specific to your update path to plan and update the operating system. Then use the MicroShift update type specific to your update path.

Additional resources

- [Managing RHEL for Edge images](#)
- [Composing a customized RHEL system image](#)
- [Applying updates on an OSTree system](#)
- [Applying updates manually with RPMs](#)
- [The Greenboot system health check](#)
- [Greenboot workload scripts](#)

CHAPTER 3. ABOUT UPDATING RED HAT BUILD OF MICROSHIFT RPMS ON AN OSTREE SYSTEM

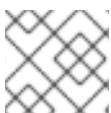
Updating Red Hat build of MicroShift on an **rpm-ostree** system such as Red Hat Enterprise Linux for Edge (RHEL for Edge) requires building a new operating system image containing the new version of Red Hat build of MicroShift. After you have the **rpm-ostree** image with Red Hat build of MicroShift embedded, direct your system to boot into that operating system image.

The procedures are the same for minor-version and patch updates. For example, use the same steps to upgrade from 4.14 to 4.15 or from 4.15.0 to 4.15.1.

Red Hat Device Edge release compatibility matrix

The two products of Red Hat Device Edge work together as a single solution for device-edge computing. To successfully pair your products, use the verified releases together for each as listed in the following table:

RHEL for Edge Version(s)	MicroShift Version	MicroShift Release Status	MicroShift Supported Updates
9.2, 9.3	4.15	Generally Available	4.15.0→4.15.z and 4.15→future minor version
9.2, 9.3	4.14	Generally Available	4.14.0→4.14.z and 4.14→4.15
9.2	4.13	Technology Preview	None
8.7	4.12	Developer Preview	None



NOTE

Downgrades are not supported. The following procedure is for upgrades only.

3.1. APPLYING UPDATES ON AN OSTREE SYSTEM

To update MicroShift on an **rpm-ostree** system such as Red Hat Enterprise Linux for Edge (RHEL for Edge), embed the new version of MicroShift on a new operating system image. The steps you use depends on how your existing deployment is set up. The following procedure outlines the general steps you can take, with links to the RHEL for Edge documentation. The RHEL for Edge documentation is your resource for specific details on building an updated operating system image. Back up and system rollback are automatic with this update type.



NOTE

You can also use this workflow to update applications running in the MicroShift cluster. Ensure compatibility between the application and the adjacent versions of MicroShift and RHEL for Edge before starting an update.

Prerequisites

- The system requirements for installing MicroShift have been met.
- You have root user access to the host.
- The version of MicroShift you have is compatible with the RHEL for Edge image you are preparing to use.



NOTE

You cannot downgrade MicroShift with this process. Downgrades are not supported.

Procedure

1. Create an Image Builder configuration file for adding the **rhocp-4.15** RPM repository source required to pull MicroShift RPMs by running the following command:

```
$ cat > rhocp-4.15.toml <<EOF
id = "rhocp-4.15"
name = "Red Hat OpenShift Container Platform 4.15 for RHEL 9"
type = "yum-baseurl"
url = "https://cdn.redhat.com/content/dist/layered/rhel9/$(uname -m)/rhocp/4.15/os"
check_gpg = true
check_ssl = true
system = false
rhsm = true
EOF
```

2. Add the update RPM source to the Image Builder by running the following command:

```
$ sudo composer-cli sources add rhocp-4.15.toml
```

3. Build a new image of RHEL for Edge that contains the new version of MicroShift. To determine the steps required, use the following documentation:

- [Building a RHEL for Edge commit update](#)

4. Update the host to use the new image of RHEL for Edge. To determine the steps required, use the following documentation:

- [Deploying RHEL for Edge image updates](#)

5. Reboot the host to apply updates by running the following command:

```
$ sudo systemctl reboot
```

CHAPTER 4. ABOUT UPDATING RED HAT BUILD OF MICROSHIFT RPMS MANUALLY

Updating Red Hat build of MicroShift for non-OSTree systems such as Red Hat Enterprise Linux (RHEL) requires downloading then updating the RPMs. For patch releases, such as 4.15.1 to 4.15.2, download and update the RPMs. For minor-version release updates, add the step of enabling the update repository using your subscription manager.



IMPORTANT

MicroShift updates are supported from one minor version to the next in sequence. For example, you must update 4.14 to 4.15.

For either upgrading with patch updates or a minor-version update, you can back up application data as needed and move the data copy to a secure location.

4.1. APPLYING PATCH UPDATES USING RPMS

Updating MicroShift on non **rpm-ostree** systems such as Red Hat Enterprise Linux (RHEL) requires downloading then updating the RPMs. A system reboot is not required for patch updates. For example, use the following procedure to upgrade from 4.14.0 to 4.14.1.

Prerequisites

- The system requirements for installing MicroShift have been met.
- You have root user access to the host.
- The version of MicroShift you have is compatible to upgrade to the version you are preparing to use.
- You have verified that your host operating system is compatible with the version of MicroShift you are preparing to install.
- You have completed a system backup.



NOTE

You cannot downgrade MicroShift with this process. Downgrades are not supported.

Procedure

- Update the MicroShift RPMs by running the following command:

```
$ sudo dnf update microshift
```



NOTE

The system health check runs on this update type, but does not perform any actions. If the update fails, an error message appears with the instruction to check the logs.

4.2. APPLYING MINOR-VERSION UPDATES WITH RPMS

Updating a MicroShift minor version on non **rpm-ostree** systems such as Red Hat Enterprise Linux (RHEL) requires downloading then updating the RPMs. For example, use the following procedure to update from 4.14 to 4.15.



IMPORTANT

You can only update MicroShift from one version to the next in sequence. Jumping minor versions is not supported. For example, must update 4.14 to 4.15.

Prerequisites

- The system requirements for installing MicroShift have been met.
- You have root user access to the host.
- The version of MicroShift you have is compatible to upgrade to the version you are preparing to use.
- You have verified that your host operating system is compatible with the version of MicroShift you are preparing to install.
- You have completed a system backup.



NOTE

You cannot downgrade MicroShift with this process. Downgrades are not supported.

Procedure

1. Enable the MicroShift repositories by running the following command:

```
$ sudo subscription-manager repos \
  --enable rhocp-4.15-for-rhel-9-$(uname -m)-rpms \
  --enable fast-datapath-for-rhel-9-$(uname -m)-rpms
```

2. Update the MicroShift RPMs by running the following command:

```
$ sudo dnf update microshift
```

3. Reboot the host to apply updates by running the following command:

```
$ sudo systemctl reboot
```



NOTE

The system health check runs on this update type, but does not perform any actions. If the update fails, an error message appears with the instruction to check the logs.

Verification

1. Check if the health checks exited with a successful boot by running the following command:

```
$ sudo systemctl status greenboot-healthcheck
```

2. Check the health check logs by running the following command:

```
┆ $ sudo journalctl -u greenboot-healthcheck
```

Additional resources

- [Backup and restore](#)