



# Red Hat Enterprise Linux 9

## Managing and monitoring security updates

Update RHEL 9 system security to prevent attackers from exploiting known flaws



# Red Hat Enterprise Linux 9 Managing and monitoring security updates

---

Update RHEL 9 system security to prevent attackers from exploiting known flaws

## Legal Notice

Copyright © 2024 Red Hat, Inc.

The text of and illustrations in this document are licensed by Red Hat under a Creative Commons Attribution–Share Alike 3.0 Unported license ("CC-BY-SA"). An explanation of CC-BY-SA is available at

<http://creativecommons.org/licenses/by-sa/3.0/>

. In accordance with CC-BY-SA, if you distribute this document or an adaptation of it, you must provide the URL for the original version.

Red Hat, as the licensor of this document, waives the right to enforce, and agrees not to assert, Section 4d of CC-BY-SA to the fullest extent permitted by applicable law.

Red Hat, Red Hat Enterprise Linux, the Shadowman logo, the Red Hat logo, JBoss, OpenShift, Fedora, the Infinity logo, and RHCE are trademarks of Red Hat, Inc., registered in the United States and other countries.

Linux<sup>®</sup> is the registered trademark of Linus Torvalds in the United States and other countries.

Java<sup>®</sup> is a registered trademark of Oracle and/or its affiliates.

XFS<sup>®</sup> is a trademark of Silicon Graphics International Corp. or its subsidiaries in the United States and/or other countries.

MySQL<sup>®</sup> is a registered trademark of MySQL AB in the United States, the European Union and other countries.

Node.js<sup>®</sup> is an official trademark of Joyent. Red Hat is not formally related to or endorsed by the official Joyent Node.js open source or commercial project.

The OpenStack<sup>®</sup> Word Mark and OpenStack logo are either registered trademarks/service marks or trademarks/service marks of the OpenStack Foundation, in the United States and other countries and are used with the OpenStack Foundation's permission. We are not affiliated with, endorsed or sponsored by the OpenStack Foundation, or the OpenStack community.

All other trademarks are the property of their respective owners.

## Abstract

Learn how to install security updates and display additional details about the updates to keep your Red Hat Enterprise Linux systems secured against newly discovered threats and vulnerabilities.

---

## Table of Contents

<b>PROVIDING FEEDBACK ON RED HAT DOCUMENTATION</b> .....	<b>3</b>
<b>CHAPTER 1. IDENTIFYING SECURITY UPDATES</b> .....	<b>4</b>
1.1. WHAT ARE SECURITY ADVISORIES?	4
1.2. DISPLAYING SECURITY UPDATES THAT ARE NOT INSTALLED ON A HOST	5
1.3. DISPLAYING SECURITY UPDATES THAT ARE INSTALLED ON A HOST	5
1.4. DISPLAYING A SPECIFIC ADVISORY BY USING DNF	6
<b>CHAPTER 2. INSTALLING SECURITY UPDATES</b> .....	<b>7</b>
2.1. INSTALLING ALL AVAILABLE SECURITY UPDATES	7
2.2. INSTALLING A SECURITY UPDATE PROVIDED BY A SPECIFIC ADVISORY	7
2.3. INSTALLING SECURITY UPDATES AUTOMATICALLY	8



# PROVIDING FEEDBACK ON RED HAT DOCUMENTATION

We appreciate your feedback on our documentation. Let us know how we can improve it.

## Submitting feedback through Jira (account required)

1. Log in to the [Jira](#) website.
2. Click **Create** in the top navigation bar
3. Enter a descriptive title in the **Summary** field.
4. Enter your suggestion for improvement in the **Description** field. Include links to the relevant parts of the documentation.
5. Click **Create** at the bottom of the dialogue.

# CHAPTER 1. IDENTIFYING SECURITY UPDATES

Keeping enterprise systems secure from current and future threats requires regular security updates. Red Hat Product Security provides the guidance you need to confidently deploy and maintain enterprise solutions.

## 1.1. WHAT ARE SECURITY ADVISORIES?

Red Hat Security Advisories (RHSA) document the information about security flaws being fixed in Red Hat products and services.

Each RHSA includes the following information:

- Severity
- Type and status
- Affected products
- Summary of fixed issues
- Links to the tickets about the problem. Note that not all tickets are public.
- Common Vulnerabilities and Exposures (CVE) numbers and links with additional details, such as attack complexity.

Red Hat Customer Portal provides a list of Red Hat Security Advisories published by Red Hat. You can display details of a specific advisory by navigating to the advisory's ID from the list of Red Hat Security Advisories.

Figure 1.1. List of security advisories

The screenshot shows the Red Hat Security Advisories page. At the top, there are navigation tabs for "Security Advisories", "Red Hat CVE Database", and "Security Labs". Below the tabs are filters for "Red Hat Enterprise Linux", "All Variants", "All Versions", and "All Architectures". A search bar with a "GO" button and severity filters (All, Low, Moderate, Important, Critical) is present. A "Notifications Preferences" link is also visible. The main content is a table with columns for "Advisory", "Synopsis", "Severity", "Products", and "Publish Date". Two advisories are listed, both with "Important" severity and a "Publish Date" of "25 Apr 2022". The advisory IDs "RHSA-2022:1491" and "RHSA-2022:1488" are highlighted with red boxes.

Advisory	Synopsis	Severity	Products	Publish Date
<b>RHSA-2022:1491</b>	Important: java-1.8.0-openjdk security update	Important	Red Hat CodeReady Linux Builder for ARM 64 Red Hat Enterprise Linux for x86_64 Red Hat Enterprise Linux for Power, little endian Red Hat CodeReady Linux Builder for Power, little endian Red Hat Enterprise Linux for ARM 64 Red Hat CodeReady Linux Builder for x86_64 Red Hat Enterprise Linux for IBM z Systems	25 Apr 2022
<b>RHSA-2022:1488</b>	Important: java-1.8.0-openjdk security update	Important	Red Hat Enterprise Linux Server for Power LE - Update Services for SAP Solutions	25 Apr 2022



Optionally, you can also filter the results by specific product, variant, version, and architecture. For example, to display only advisories for Red Hat Enterprise Linux 9, you can set the following filters:

- Product: Red Hat Enterprise Linux
- Variant: All Variants
- Version: 9
- Optionally, select a minor version.

#### Additional resources

- [List of Red Hat Security Advisories](#)
- [Anatomy of a Red Hat Security Advisory](#)

## 1.2. DISPLAYING SECURITY UPDATES THAT ARE NOT INSTALLED ON A HOST

You can list all available security updates for your system by using the **dnf** utility.

#### Prerequisite

- A Red Hat subscription is attached to the host.

#### Procedure

- List all available security updates which have not been installed on the host:

```
# dnf updateinfo list updates security
...
RHSA-2019:0997 Important/Sec. platform-python-3.6.8-2.el8_0.x86_64
RHSA-2019:0997 Important/Sec. python3-libs-3.6.8-2.el8_0.x86_64
RHSA-2019:0990 Moderate/Sec. systemd-239-13.el8_0.3.x86_64
...
```

## 1.3. DISPLAYING SECURITY UPDATES THAT ARE INSTALLED ON A HOST

You can list installed security updates for your system by using the **dnf** utility.

#### Procedure

- List all security updates which are installed on the host:

```
# dnf updateinfo list security --installed
...
RHSA-2019:1234 Important/Sec. libssh2-1.8.0-7.module+el8+2833+c7d6d092
RHSA-2019:4567 Important/Sec. python3-libs-3.6.7.1.el8.x86_64
RHSA-2019:8901 Important/Sec. python3-libs-3.6.8-1.el8.x86_64
...
```

If multiple updates of a single package are installed, **dnf** lists all advisories for the package. In the previous example, two security updates for the **python3-libs** package have been installed since the system installation.

## 1.4. DISPLAYING A SPECIFIC ADVISORY BY USING DNF

You can use the **dnf** utility to display a specific advisory information that is available for an update.

### Prerequisites

- A Red Hat subscription is attached to the host.
- You know the ID of the security advisory.
- The update provided by the advisory is not installed.

### Procedure

- Display a specific advisory, for example:

```
# dnf updateinfo info RHSA-2019:0997
=====
Important: python3 security update
=====
Update ID: RHSA-2019:0997
Type: security
Updated: 2019-05-07 05:41:52
Bugs: 1688543 - CVE-2019-9636 python: Information Disclosure due to urlsplit improper
NFKC normalization
CVEs: CVE-2019-9636
Description: ...
```

## CHAPTER 2. INSTALLING SECURITY UPDATES

In RHEL, you can install a specific security advisory and all available security updates. You can also configure the system to download and install security updates automatically.

### 2.1. INSTALLING ALL AVAILABLE SECURITY UPDATES

To keep the security of your system up to date, you can install all currently available security updates using the **dnf** utility.

#### Prerequisites

- A Red Hat subscription is attached to the host.

#### Procedure

1. Install security updates using **dnf** utility:

```
# dnf update --security
```

Without the **--security** parameter, **dnf update** installs all updates, including bug fixes and enhancements.

2. Confirm and start the installation by pressing **y**:

```
...
Transaction Summary
=====
Upgrade ... Packages

Total download size: ... M
Is this ok [y/d/N]: y
```

3. Optional: List processes that require a manual restart of the system after installing the updated packages:

```
# dnf needs-restarting
1107 : /usr/sbin/rsyslogd -n
1199 : -bash
```

The previous command lists only processes that require a restart, and not services. That is, you cannot restart processes listed using the **systemctl** utility. For example, the **bash** process in the output is terminated when the user that owns this process logs out.

### 2.2. INSTALLING A SECURITY UPDATE PROVIDED BY A SPECIFIC ADVISORY

In certain situations, you might want to install only specific updates. For example, if a specific service can be updated without scheduling a downtime, you can install security updates for only this service, and install the remaining security updates later.

#### Prerequisites

- A Red Hat subscription is attached to the host.
- You know the ID of the security advisory that you want to update.  
For more information, see the [Identifying the security advisory updates](#) section.

### Procedure

1. Install a specific advisory, for example:

```
# dnf update --advisory=RHSA-2019:0997
```

2. Alternatively, update to apply a specific advisory with a minimal version change by using the **dnf upgrade-minimal** command, for example:

```
# dnf upgrade-minimal --advisory=RHSA-2019:0997
```

3. Confirm and start the installation by pressing **y**:

```
...
Transaction Summary
=====
Upgrade ... Packages

Total download size: ... M
Is this ok [y/d/N]: y
```

4. Optional: List the processes that require a manual restart of the system after installing the updated packages:

```
# dnf needs-restarting
1107 : /usr/sbin/rsyslogd -n
1199 : -bash
```

The previous command lists only processes that require a restart, and not services. This means that you cannot restart all processes listed by using the **systemctl** utility. For example, the **bash** process in the output is terminated when the user that owns this process logs out.

## 2.3. INSTALLING SECURITY UPDATES AUTOMATICALLY

You can configure your system so that it automatically downloads and installs all security updates.

### Prerequisites

- A Red Hat subscription is attached to the host.
- The **dnf-automatic** package is installed.

### Procedure

1. In the **/etc/dnf/automatic.conf** file, in the **[commands]** section, make sure the **upgrade\_type** option is set to either **default** or **security**:

```
[commands]
```

```
# What kind of upgrade to perform:  
# default                = all available upgrades  
# security                = only the security upgrades  
upgrade_type = security
```

2. Enable and start the **systemd** timer unit:

```
# systemctl enable --now dnf-automatic-install.timer
```

### Verification

1. Verify that the timer is enabled:

```
# systemctl status dnf-automatic-install.timer
```

### Additional resources

- **dnf-automatic(8)** man page on your system