



Red Hat Enterprise Linux 9

Managing and monitoring security updates

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

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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.

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MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. Because of the enormity of this endeavor, these changes will be implemented gradually over several upcoming releases. For more details, see [our CTO Chris Wright's message](#).

PROVIDING FEEDBACK ON RED HAT DOCUMENTATION

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

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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 these 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 table lists the advisories, with two highlighted: RHSA-2022:1491 and RHSA-2022:1488.

Advisory	Synopsis	Severity	Products	Publish Date
RHSA-2022:1491	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
RHSA-2022:1488	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](#)
- [Red Hat Customer Portal](#)

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 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 attached to the host.
- You have a security advisory **Update ID**. See [identifying the security advisory updates](#).
- The update provided by the advisory is not installed.

Procedure

- Display a specific advisory:

```
# dnf updateinfo info <Update ID>
=====
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: ...
```

Replace the *Update ID* with the required advisory. For example, **# dnf updateinfo info <RHSA-2019:0997>**.

CHAPTER 2. INSTALLING SECURITY UPDATES

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.

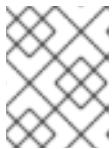
Prerequisite

- A Red Hat subscription attached to the host.

Procedure

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

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



NOTE

The **--security** parameter is important. Without it, **dnf update** installs all updates, including bug fixes and enhancements.

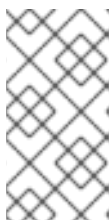
2. Confirm and start the installation by pressing **y**:

```
...
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
```



NOTE

This 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 attached to the host.
- You have the ID of the security advisory that you want to update. For more information, see [identifying the security advisory updates](#).

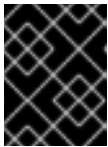
Procedure

1. Install a specific advisory:

```
# dnf update --advisory=<Update_ID>
```

Replace *<Update_ID>* with the ID of the security advisory that you want to update. For example:

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



IMPORTANT

You can update to apply a specific advisory with a minimal version change by using the **dnf upgrade-minimal --advisory=<Update_ID>** command.

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 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
```



NOTE

This 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 attached to the host.
- The **dnf-automatic** package is installed.

Procedure

1. In the `/etc/dnf/automatic.conf` file, under 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

2.4. ADDITIONAL RESOURCES

- See practices of securing workstations and servers in [Security Hardening](#) document.
- [Security-Enhanced Linux](#) documentation.