# Tenable Core + Tenable OT Security Sensor User Guide

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# Welcome to Tenable Core + Tenable OT Security Sensor

You can use the Tenable Core operating system to run an instance of OT Security Sensor in your environment. After you deploy Tenable Core + Tenable OT Security Sensor, you can monitor and manage your OT Security Sensor processes through the secure Tenable Core platform.

To get started quickly with OT Security Sensor, see Get Started.

## Features

- Provides automatic application installation and updates via Tenable public repositories.
- Built on Oracle Linux 8.
- Targets Center for Internet Security (CIS) standards for Oracle Linux 8 with SELinux enabled. For more information, see Default Security Configuration Standards.
- Root access is enabled on all builds.

## Other Tenable Core Configurations

To run a different Tenable application on Tenable Core, refer to:

- Tenable Core + Nessus
- Tenable Core + Nessus Network Monitor
- Tenable Core + Tenable OT Security
- Tenable OT Security Enterprise Manager
- Tenable Core + Tenable Security Center
- Tenable Core + Tenable Sensor Proxy
- Tenable Core + Tenable On-Prem Connector
- Tenable Core + Tenable Web App Scanning

**Note:** Tenable does not recommend deploying multiple applications on a single instance of Tenable Core. If you want to deploy several applications on Tenable Core, deploy a unique instance for each application.

# Tenable Core Operating System Version Support

To see which versions of the products are currently available on each operating system version of Tenable Core, see the Versions page.

# Get Started

Tenable recommends the following sequence to deploy and get started with Tenable Core + Tenable OT Security Sensor.

To get started with Tenable Core:

1. Confirm that your environment meets the requirements in Tenable Core Requirements. If necessary, prepare to increase your disk space after you deploy.
2. Deploy or install Tenable Core + Tenable OT Security Sensor.

   > **Note**: You can also deploy Tenable Core using the command line interface (CLI). For more information, see Deploy Tenable Core in Microsoft Azure via the CLI.

3. (Optional) If you want to increase your disk space to accommodate your organization's data storage needs, see Disk Management *and the OT Security User Guide*.
4. Log in as a wizard user and create an administrator account, as described in Create an Initial Administrator User Account.
5. (Optional) If necessary, log in as a wizard user and create an administrator account, as described in Create an Initial Administrator User Account.

   > **Note**: Create an administrator account if you deployed Tenable Core + Tenable OT Security Sensor via one of the following methods:
   >
   > - As a virtual machine
   > - On hardware
   >
   > If you deployed Tenable Core + Tenable OT Security Sensor in a cloud environment and you did not create a password during deployment, you must create a password for your administrator account.

6. Log In to Tenable Core with your new administrator credentials.

   > **Note**: Passwords expire after a year and accounts are disabled 30 days after that. For more information, refer to the Tenable Community article.

7. In the left navigation bar, click **Tenable.ot**.

The **Tenable.ot** page appears.

8. When prompted, click **Install OT Security** and allow up to an hour for installation.
9. When prompted, click **Install Tenable OT Security EM** and allow up to an hour for installation.
10. (Optional) If you want to create more user accounts, see Create New User Account.
11. (Optional) If you want to configure Tenable Core to use a proxy server, see Configure a Proxy Server.
12. Configure OT Security in the OT Security User Interface to meet the specifications you want for your application.

    For more information about configuring and operating OT Security Sensor, see the Tenable OT Security User Guide.
13. Configure and manage Tenable Core. To access the application interface, see Configure Tenable Core.

# Tenable Core Requirements

You can deploy Tenable Core + Tenable OT Security Sensor on any system that meets the following Tenable Core and OT Security Sensor environment requirements.

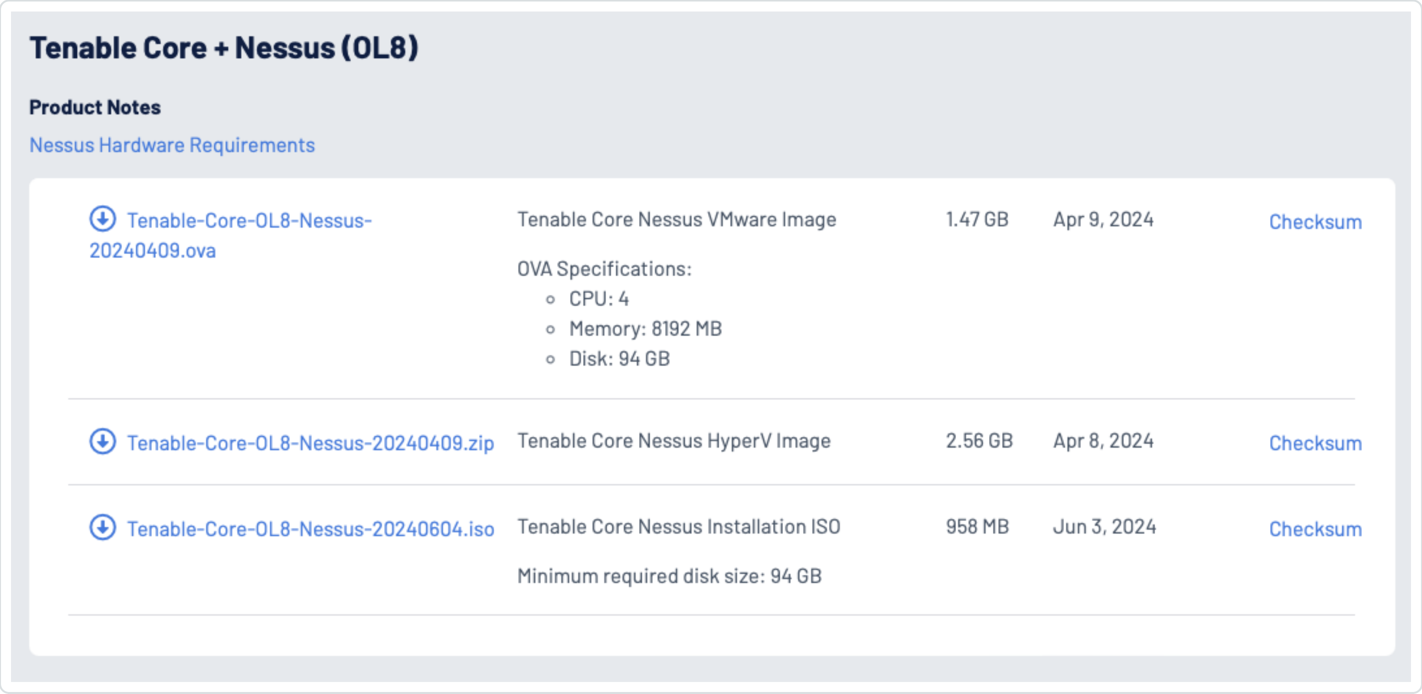
> **Note:** Tenable does not recommend deploying multiple applications on a single instance of Tenable Core. If you want to deploy several applications on Tenable Core, deploy a unique instance for each application.

System and License Requirements

Access Requirements

Default Security Configuration Standards

Disk space requirements are also displayed on the ISO download page:



**Tenable Core + Nessus (OL8)**

**Product Notes**

Nessus Hardware Requirements

| | | | | |
|---|---|---|---|---|
| Tenable-Core-OL8-Nessus-20240409.ova | Tenable Core Nessus VMware Image<br>OVA Specifications:<br>○ CPU: 4<br>○ Memory: 8192 MB<br>○ Disk: 94 GB | 1.47 GB | Apr 9, 2024 | Checksum |
| Tenable-Core-OL8-Nessus-20240409.zip | Tenable Core Nessus HyperV Image | 2.56 GB | Apr 8, 2024 | Checksum |
| Tenable-Core-OL8-Nessus-20240604.iso | Tenable Core Nessus Installation ISO<br>Minimum required disk size: 94 GB | 958 MB | Jun 3, 2024 | Checksum |

## System and License Requirements

To install and run Tenable Core + Tenable OT Security or Tenable OT Security Sensor, your application and system must meet the following requirements.

> **Tip:** Tenable OT Security offers turnkey appliances that ship directly that come pre-imaged. This option is easier to use with a faster time to value. However, you can also source your own hardware and apply our ISO image to it. In all cases, refer to the Tenable OT hardware requirements as a guideline. All components of Tenable OT Security, Tenable OT Security Enterprise Manager, and Tenable OT Security Sensor can be deployed on any hardware that meets the specs.

> **Note:** Tenable does not recommend deploying multiple applications on a single instance of Tenable Core. If you want to deploy several applications on Tenable Core, deploy a unique instance for each application.

## OT Security Hardware Requirements

For more information about hardware requirements specifically for OT Security or Tenable OT Security Sensor, see Tenable OT Security Hardware Specifications in the *General Requirements Guide*.

## Storage Requirements

Tenable recommends installing OT Security on direct-attached storage (DAS) devices, preferably solid-state drives (SSD), for best performance. Tenable strongly encourages the use of solid-state storage (SSS) that have a high drive-writes-per-day (DWPD) rating to ensure longevity.

Tenable does not support installing OT Security on network-attached storage (NAS) devices. Storage area networks (SAN) with a storage latency of 10 milliseconds or less, or Tenable hardware appliances, are a good alternative in such cases.

## Disk Space Requirements

Enterprise networks can vary in performance, capacity, protocols, and overall activity. Resource requirements to consider for deployments include raw network speed, the size of the network to monitor, and the configuration of the application. Processors, memory, and network card selection are heavily based on these deployment configurations. Disk space requirements vary depending on usage based on the amount of data, and length of time, you store data on the system.

> **Note:** OT Security needs to be able to perform full packet captures of monitored traffic[1], and the size of the policy event data stored by OT Security depends on the number of devices and the type of environment.

### ICP System Requirement Guidelines (Virtual or Tenable Core)

| Maximum SPAN/TAP Throughput (Mbps) | CPU Cores[1] | Memory (DDR4) | Storage Requirements | Network Interfaces |
|---|---|---|---|---|
| 50 Mbps or less | 4 | 16 GB RAM | 128 GB | Minimum 4 x 1 Gbps |
| 50-150 Mbps | 16 | 32 GB RAM | 512 GB | Minimum 4 x 1 Gbps |
| 150-300 Mbps | 32 | 64 GB RAM | 1 TB | Minimum 4 x 1 Gbps |
| 300 Mbps to 1 GB | 32-64 | 128 GB RAM or more | 2 TB or more | Minimum 4 x 1 Gbps |

[1] Multiply rate (Mbits/sec) * 2.7 to get storage (GB/day) - based on a compression factor of 0.25.

## Disk Partition Requirements

OT Security uses the following mounted partitions:

| Partition | Content |
|---|---|
| / | operating system |
| /opt | application and database files |

The standard install process places these partitions on the same disk. Tenable recommends moving these to partitions on separate disks to increase throughput. OT Security is a disk-intensive application and using disks with high read/write speeds, such as SSDs, results in the best performance. Tenable recommends using an SSD with high DWPD ratings on customer-supplied hardware installations when using the packet capture feature in OT Security.

**Tip**: Deploying OT Security on a hardware platform configured with a redundant array of independent disks (RAID 0) can dramatically boost performance.

**Tip**: Tenable does not require RAID disks for even our largest customers. However, in one instance, response times for queries with a faster RAID disk for a customer with more than one million managed vulnerabilities moved from a few seconds to less than a second.

## Network Interface Requirements

You must have two (or more) network interfaces present on your device before installing OT Security. Tenable recommends the use of gigabit interfaces. The VMWare OVA creates these interfaces automatically. Create these interfaces manually when you are installing the ISO (such as Hyper-V).

**Note**: Tenable does not provide SR-IOV support for the use of 10 G network cards and does not guarantee 10 G speeds with the use of 10 G network cards.

## NIC Requirements

- Tenable OT Security Sensor requires only one NIC for EM.
- Tenable OT Security Sensor requires a minimum of two NICs for the ICP and Sensors.

- Tenable OT Security Sensor requires static IP addresses to be used for ICP/EM/Sensors.
- Both the sensor and ICP can be configured to monitor multiple SPAN interfaces.

**nic0** (192.168.1.5) and nic3 (192.168.3.3) have static IP addresses when you install Tenable Core + Tenable OT Security Sensor in a hardware, or virtual, environment. Other network interface controllers (NICs) use DHCP.

**nic3** (192.168.3.3) has a static IP address when you deploy Tenable Core + Tenable OT Security Sensor on VMware. Other NICs use DHCP. Confirm that the Tenable Core **nic1** MAC address matches the NIC MAC address in your VMware passive scanning configuration. Modify your VMware configuration to match your Tenable Core MAC address if necessary.

For more information, see Manually Configure a Static IP Address, Manage System Networking, and the *VMware Documentation*.

[1]CPU Cores reference PHYSICAL cores, assumes server-class CPU (Xeon, Opteron).

## Access Requirements

Your Tenable Core + Tenable OT Security Sensor deployment must meet the following requirements.

- Internet Requirements
- Port Requirements

## Internet Requirements

You must have internet access to download Tenable Core files and perform online installs.

After you transfer a file to your machine, internet access requirements to deploy or update Tenable Core vary depending on your environment.

> **Note**: You need to be able to reach `appliance.cloud.tenable.com` to install from the online ISOs (and to get online updates) and `sensor.cloud.tenable.com` to pick up scan jobs.

| Environment | | Tenable Core Format | Internet Requirement |
|---|---|---|---|
| Virtual | VMware | `.ova` file | You do not need internet |

| | | | |
|---|---|---|---|
| Machine | | | access to deploy or update Tenable Core. |
| | Microsoft Hyper-V | `.zip` file | |
| Cloud | Amazon Web Services (AWS) | n/a | Requires internet access to deploy or update Tenable Core. |
| Cloud | Microsoft Azure | n/a | |
| Hardware | | `.iso` image | Requires internet access to install or update Tenable Core. |

**Tip:** You do not need access to the internet when you install updates to Tenable Core + Tenable OT Security Sensor via an offline `.iso` file. For more information, see Update Tenable Core Offline.

## Port Requirements

Your Tenable Core deployment requires access to specific ports for inbound and outbound traffic. OT Security also requires application-specific port access. For more information, see the *OT Security Documentation*.

### Inbound Traffic

Allow inbound traffic to the following ports listed.

**Note**: Inbound traffic refers to traffic from users configuring Tenable Core, etc.

| Port | Traffic |
|---|---|
| TCP 22 | Inbound SSH connections. |
| TCP 8000 | (Default) Inbound HTTPS communications to the Tenable Core interface. |
| TCP 8090 | Inbound HTTPS communications for restoring backups.<br>Inbound communications with the file upload server. |

### Outbound Traffic

Allow outbound traffic to the following ports listed.

| Port | Traffic |
|---|---|
| TCP 22 | Outbound SSH connections, including remote storage connections. |
| TCP 443 | Outbound communications to the `appliance.cloud.tenable.com` and `sensor.cloud.tenable.com` servers for system updates. |
| UDP 53 | Outbound DNS communications for OT SecurityTenable OT Security Enterprise Manager and Tenable Core. |

## Default Security Configuration Standards

By default, Tenable Core applies security configurations based on the following Center for Internet Security (CIS) standards. For more information about CIS standards, see cisecurity.org.

> **Note**: **SELinux:** is enabled by default on the Tenable Core operating system.

# CIS Standards

**CIS Benchmarks:** Tenable has implemented the following parts of the CIS Level 1 Benchmark on the Tenable Core:

## CIS Level 1 - 1.x

- CIS 1.1.1.* (Disable mounting of miscellaneous filesystems)
- CIS 1.1.21 (Ensure sticky bit is set on all world-writable directories)
- CIS 1.4.* (Bootloader adjustments)
    - CIS 1.4.1 Ensure permissions on bootloader config are configured
- CIS 1.7.1.* (Messaging/banners)
    - Ensure message of the day is configured properly
    - Ensure local login warning banner is configured properly
    - Ensure remote login warning banner is configured properly

    - Ensure GDM login banner is configured - banner message enabled
    - Ensure GDM login banner is configured - banner message text

## CIS Level 1 - 2.x

- CIS 2.2.* (disabled packages)
    - x11
    - avahi-server
    - CUPS
    - nfs
    - Rpc

## CIS level 1 - 3.x

- CIS 3.1.* (packet redirects)
    - 3.1.2 Ensure packet redirect sending is disabled - 'net.ipv4.conf.all.send_redirects = 0'
    - 3.1.2 Ensure packet redirect sending is disabled - 'net.ipv4.conf.default.send_redirects = 0'
- CIS 3.2.* (ipv4, icmp, etc)
    - 3.2.1 Ensure source routed packets are not accepted - 'net.ipv4.conf.all.accept_source_route = 0'
    - 3.2.1 Ensure source routed packets are not accepted - 'net.ipv4.conf.default.accept_source_route = 0'
    - 3.2.2 Ensure ICMP redirects are not accepted - 'net.ipv4.conf.all.accept_redirects = 0'
    - 3.2.2 Ensure ICMP redirects are not accepted - 'net.ipv4.conf.default.accept_redirects = 0'
    - 3.2.3 Ensure secure ICMP redirects are not accepted - 'net.ipv4.conf.all.secure_redirects = 0'

- 3.2.3 Ensure secure ICMP redirects are not accepted - 'net.ipv4.conf.default.secure_redirects = 0'
- 3.2.4 Ensure suspicious packets are logged - 'net.ipv4.conf.all.log_martians = 1'
- 3.2.4 Ensure suspicious packets are logged - 'net.ipv4.conf.default.log_martians = 1'
- 3.2.5 Ensure broadcast ICMP requests are ignored
- 3.2.6 Ensure bogus ICMP responses are ignored
- 3.2.7 Ensure Reverse Path Filtering is enabled - 'net.ipv4.conf.all.rp_filter = 1'
- 3.2.7 Ensure Reverse Path Filtering is enabled - 'net.ipv4.conf.default.rp_filter = 1'
- 3.2.8 Ensure TCP SYN Cookies is enabled

- CIS 3.3.* (IPv6)
    - 3.3.1 Ensure IPv6 router advertisements are not accepted
    - 3.3.2 Ensure IPv6 redirects are not accepted
- CIS 3.5.* (network protocols)
    - 3.5.1 Ensure DCCP is disabled
    - 3.5.2 Ensure SCTP is disabled
    - 3.5.3 Ensure RDS is disabled
    - 3.5.4 Ensure TIPC is disabled

## CIS Level 1 - 4.x

- CIS 4.2.* (rsyslog)
    - 4.2.1.3 Ensure rsyslog default file permissions configured
    - 4.2.4 Ensure permissions on all logfiles are configured

## CIS Level 1 - 5.x

- CIS 5.1.* (cron permissions)
    - 5.1.2 Ensure permissions on /etc/crontab are configured
    - 5.1.3 Ensure permissions on /etc/cron.hourly are configured
    - 5.1.4 Ensure permissions on /etc/cron.daily are configured
    - 5.1.5 Ensure permissions on /etc/cron.weekly are configured
    - 5.1.6 Ensure permissions on /etc/cron.monthly are configured
    - 5.1.7 Ensure permissions on /etc/cron.d are configured
    - 5.1.8 Ensure at/cron is restricted to authorized users - at.allow
    - 5.1.8 Ensure at/cron is restricted to authorized users - at.deny
    - 5.1.8 Ensure at/cron is restricted to authorized users - cron.allow
- CIS 5.3.* (password/pam)
    - 5.3.1 Ensure password creation requirements are configured - dcredit
    - 5.3.1 Ensure password creation requirements are configured - lcredit
    - 5.3.1 Ensure password creation requirements are configured - minlen
    - 5.3.1 Ensure password creation requirements are configured - ocredit
    - 5.3.1 Ensure password creation requirements are configured - ucredit
    - 5.3.2 Lockout for failed password attempts - password-auth 'auth [default=die] pam_faillock.so authfail audit deny=5 unlock_time=900'
    - 5.3.2 Lockout for failed password attempts - password-auth 'auth [success=1 default=bad] pam_unix.so'
    - 5.3.2 Lockout for failed password attempts - password-auth 'auth required pam_faillock.so preauth audit silent deny=5 unlock_time=900'
    - 5.3.2 Lockout for failed password attempts - password-auth 'auth sufficient pam_faillock.so authsucc audit deny=5 unlock_time=900'

    - 5.3.2 Lockout for failed password attempts - system-auth 'auth [default=die] pam_faillock.so authfail audit deny=5 unlock_time=900'
    - 5.3.2 Lockout for failed password attempts - system-auth 'auth [success=1 default=bad] pam_unix.so'
    - 5.3.2 Lockout for failed password attempts - system-auth 'auth required pam_faillock.so preauth audit silent deny=5 unlock_time=900'
    - 5.3.2 Lockout for failed password attempts - system-auth 'auth sufficient pam_faillock.so authsucc audit deny=5 unlock_time=900'
    - 5.3.3 Ensure password reuse is limited - password-auth
    - 5.3.3 Ensure password reuse is limited - system-auth
- CIS 5.4.* (user prefs)
    - 5.4.1.2 Ensure minimum days between password changes is 7 or more
    - 5.4.1.4 Ensure inactive password lock is 30 days or less
    - 5.4.4 Ensure default user umask is 027 or more restrictive - /etc/bashrc
- CIS 5.6.* (wheel group)
    - 5.6 Ensure access to the su command is restricted - pam_wheel.so
    - 5.6 Ensure access to the su command is restricted - wheel group contains root

### CIS Level 1 - 6.x

- CIS 6.1.* (misc conf permissions)
    - 6.1.6 Ensure permissions on /etc/passwd- are configured
    - 6.1.8 Ensure permissions on /etc/group- are configured

## Deploy or Install Tenable Core

You can run Tenable Core + Tenable OT Security Sensor in the following environments.

> **Note:** Tenable Support does not assist with issues related to your host operating system, even if you encounter them during installation or deployment.

| Environment | | Tenable Core File Format | More Information |
|---|---|---|---|
| Virtual Machine | VMware | `.ova` file | Deploy Tenable Core in VMware |
| Hardware<br>Tenable-provided hardware | | `.iso` image | Install Tenable Core on Hardware |

> **Note:** While you could use the packages to run Tenable Core in other environments, Tenable does not provide documentation for those procedures.

## Deploy Tenable Core in VMware

To deploy Tenable Core + Tenable OT Security Sensor as a VMware virtual machine, you must download the Tenable Core + Tenable OT Security Sensor .ova file and deploy it on a hypervisor.

### Before you begin:

- Confirm your environment supports your intended use of the instance, as described in License and System Requirements.
- Confirm your internet and port access supports your intended use of the instance, as described in Access Requirements.

### To deploy Tenable Core + Tenable OT Security Sensor as a VMware virtual machine:

1. Download the Tenable Core + OT Security `.ova` file.
2. Open your VMware virtual machine in the hypervisor.
3. Import the Tenable Core + Tenable OT Security Sensor VMware `.ova` file from your computer to your virtual machine. For information about how to import a .ova file to your virtual machine, see the VMware documentation.
4. In the setup prompt, configure the virtual machine to meet your organization's storage needs and requirements, and those described in License and System Requirements.
5. Launch your Tenable Core + Tenable OT Security Sensor instance.

The virtual machine boot process appears in a terminal window.

> **Note**: The boot process may take several minutes to complete.

What to do next:

- Continue getting started with Tenable Core + Tenable OT Security Sensor, as described in Get Started.

## Deploy Tenable Core in Hyper-V

To deploy Tenable Core + Tenable OT Security Sensor as a Microsoft Hyper-V virtual machine, you must download the Tenable Core + Tenable OT Security Sensor `.zip` file and deploy it on the host where you want to launch Tenable Core + Tenable OT Security Sensor.

> **Note:** After you download the `.zip` file, you can use an external storage device to deploy it on another machine. You do not need internet access on the machine hosting Tenable Core.

Before you begin:

- Confirm your environment supports your intended use of the instance, as described in License and System Requirements.
- Confirm your internet and port access supports your intended use of the instance, as described in Access Requirements.

To deploy Tenable Core + Tenable OT Security Sensor as a Hyper-V virtual machine:

1. Download the **Tenable Core OT Sensor HyperV Image** file from the Tenable Downloads page.
2. Navigate to your Hyper-V Manager on the machine where you want to deploy Tenable Core + Tenable OT Security Sensor.
3. Extract the `.zip` file you previously downloaded. Extracting may take a few minutes.
4. In your Hyper-V Manager, create a new virtual machine.

   The Hyper-V Manager wizard appears.

5. In the setup wizard, adjust the virtual machine configurations to meet your organization's storage needs, and the requirements described in System Requirements.

   > **Note:** Tenable recommends that you select **Generation 1** when the Hyper-V Manager wizard prompts you during the configuration.

6. When prompted to Connect to a Virtual Hard Disk in the wizard, select **Use an existing virtual hard disk.**

7. Click **Browse** and select the `.vhd` file.

8. Click **Finish**.

   The Hyper-V setup completes and the install wizard closes.

9. **(Optional) If you want to increase the number of CPUs on your virtual machine:**

   a. In the **Virtual Machines** table, right-click the row for your machine and click **Settings.**

      The settings menu for your new virtual machine appears.

   b. In the **Hardware** section, click **Processor**.

   c. Modify the settings as necessary.

   d. Click **Ok** and exit the **Settings** page.

10. In the **Virtual Machines** table, right-click the row for your machine and click **Start** or **Connect**.

    The virtual machine load process appears in a console. The load process may take several minutes to complete.

What to do next:

- Continue getting started with Tenable Core + Tenable OT Security Sensor, as described in Get Started.

## Deploy Tenable Core in KVM

You can deploy Tenable Core applications on ProxMox, VirtManager, Nutanix AHV, or other platforms that use KVM virtualization.

> **Note:** After you download the `qcow2` file, you can use an external storage device to deploy it on another machine. You do not need internet access on the machine hosting Tenable Core.

Before you begin:

- Confirm your environment supports your intended use of the instance, as described in License and System Requirements.
- Confirm your internet and port access supports your intended use of the instance, as described in Access Requirements.

To deploy Tenable Core as a virtual machine using a KVM image:

1. Download the **Tenable-Core-OL8-<product>-<date>.qcow2** file from the Tenable Downloads page.
2. Navigate to your platform's system manager on the machine where you want to deploy Tenable Core + Tenable OT Security Sensor.
3. Create a new virtual machine following the process applicable on your platform. Assign the `qcow2` image as the machine's disk and assign other resources according to .

   > **Note:** You must set your virtual machine to boot using legacy BIOS.

4. Power on your new virtual machine following the process applicable on your platform.

What to do next:

- Continue getting started with Tenable Core + Tenable OT Security Sensor, as described in Get Started.

## Install Tenable Core on Hardware

You can install Tenable Core + Tenable OT Security Sensor directly on Tenable-provided hardware using an `.iso` image. When you install Tenable Core via an `.iso` image on your computer, Tenable Core replaces your existing operating system with the Tenable Core operating system.

> **Tip:** Tenable OT Security offers turnkey appliances that ship directly that come pre-imaged. This option is much easier to use and deploy, with a faster time to value. However, you can also source your own hardware and apply our ISO image to it. If you supply your own or choose to use ours, please refer to our

> Tenable OT hardware specs as a guideline or best practice. All components of Tenable OT Security, the ICP EM and Sensor can be ran on any hardware that meets the specs.

Before you begin:

- Confirm your environment supports your intended use of the instance, as described in License and System Requirements.
- Confirm your internet and port access supports your intended use of the instance, as described in Access Requirements.
- Confirm that Tenable Core + Tenable OT Security was not preinstalled on your hardware for any new instance of Tenable Core + Tenable OT Security. Not all new instances require manual installation.

To install Tenable Core + Tenable OT Security Sensor on hardware:

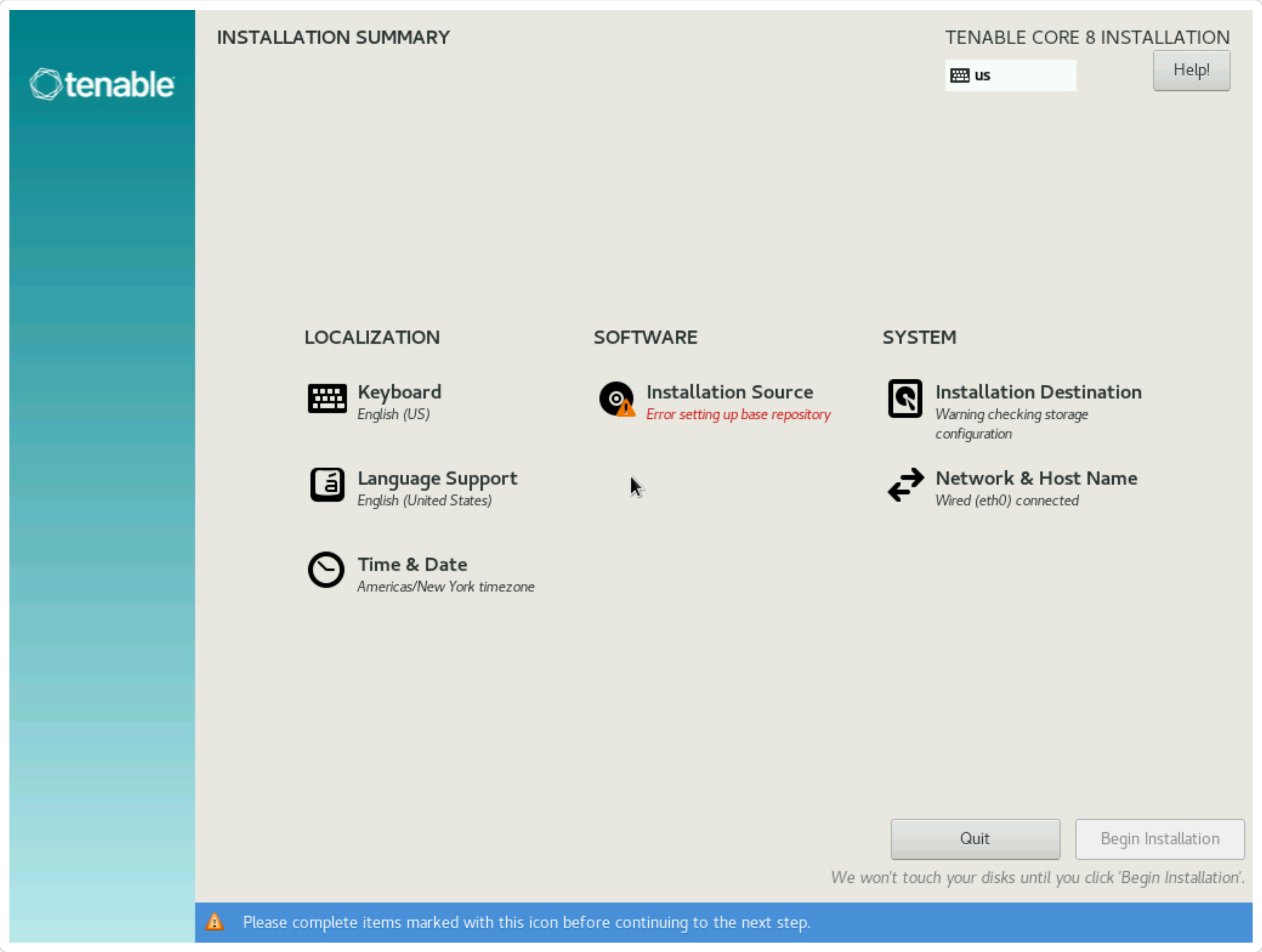
1. Download the **Tenable Core Tenable.ot Sensor Installation ISO** file from the Tenable Downloads page.
2. Boot the `.iso`. For more information, see your environment documentation.

   > **Caution:** Booting the `.iso` replaces your existing operating system with the Tenable Core operating system.

   > **Tip:** To monitor the progress of the installation on hardware that uses a serial console, select **Install Tenable Core using serial console** from the boot menu. For more information about the OT Security serial console, see the OT Security User Guide.

   The installer installs Tenable Core + Tenable OT Security Sensor on your hardware.
3. The installation begins if there are no configuration errors.

   The **Installation** menu appears:



INSTALLATION SUMMARY

TENABLE CORE 8 INSTALLATION

LOCALIZATION

Keyboard
English (US)

Language Support
English (United States)

Time & Date
Americas/New York timezone

SOFTWARE

Installation Source
Error setting up base repository

SYSTEM

Installation Destination
Warning checking storage configuration

Network & Host Name
Wired (eth0) connected

We won't touch your disks until you click 'Begin Installation'.

Please complete items marked with this icon before continuing to the next step.

> **Caution:** If you need to resolve configuration errors (such as errors with the Installation Source or Network, for example), click **Network & Host Name** to provide an updated network and proxy configuration. Do not click any other items. Do not enter any other menus or modify any other settings.

The installation runs and the server restarts.

What to do next:

- Continue getting started with Tenable Core + Tenable OT Security Sensor, as described in Get Started.

## Configure Tenable Core Multi-Factor Authentication

You can log into the Tenable Core user interface with multi-factor authentication (MFA). This topic explains how to configure MFA for Tenable Core and only applies to the user interface. Using MFA requires a Google Authenticator token.

> **Note:** This feature is not available for the root user.

> **Note:** The multi-factor authentication feature is global and **all users** will be required to use MFA to log in after this change is made.

## To enable MFA for Tenable Core user interface login:

1. Install the Oracle EPEL repositories by running the following command:

   ```
   sudo dnf install oracle-epel-release-el8
   ```

   > **Note:** It may require several minutes for the install to complete.

2. Disable Oracle EPEL repositories by default by running the following command:

   ```
   sudo dnf config-manager --disable 'ol8_developer_EPEL*'
   ```

3. Install the Google Authenticator client and dependencies by running the following command:

   ```
   sudo dnf install --enablerepo=ol8_developer_EPEL google-authenticator qrencode
   ```

4. For each user that needs to use MFA when logging in to the Tenable Core user interface, do one of the following:

   > **Note:** The multi-factor authentication feature is global and **all users** will be required to use MFA to log in after this change is made.

   a. Run the following command as the user:

      ```
      google-authenticator -t -d -f -u -w 5
      ```

> **Note:** If using the Tenable Core user interface terminal, add `-Q utf8` to the `google-authenticator -t -d -f -u -w 5` command.

> **Note:** Running this command for the same user more than once invalidates previous codes.

   i. In your authenticator app, scan the QR code.

   ii. Enter the confirmation code from the app.

   iii. (Optional, but recommended) Save the emergency scratch codes.

b. Alternatively, for full control over the MFA token creation options, run the following command:

```
google-authenticator
```

5. Run the following command:

```
sudoedit /etc/pam.d/cockpit
```

6. Under the `auth substack password-auth` line add:

```
auth       required     pam_google_authenticator.so
```

7. Confirm that the first six lines of the `/etc/pam.d/cockpit` file look like this:

```
#%PAM-1.0
auth       required     pam_sepermit.so
auth       substack     password-auth
auth       required     pam_google_authenticator.so
auth       include      postlogin
auth       optional     pam_ssh_add.so
.......
```

8. Log into the Tenable Core user interface.

## To disable MFA for Tenable Core user interface login:

1. Locate the file `/etc/pam.d/cockpit`:

```
#%PAM-1.0
auth       required     pam_sepermit.so
auth       substack     password-auth
auth       required     pam_google_authenticator.so
auth       include      postlogin
auth       optional     pam_ssh_add.so
.......
```

2. Remove the line `auth required pam_google_authenticator.so`:

```
#%PAM-1.0
auth       required     pam_sepermit.so
auth       substack     password-auth
auth       include      postlogin
auth       optional     pam_ssh_add.so
.......
```

3. Save the file.

## Disk Management

You can use the Tenable Core interface to manage some aspects of your Tenable Core machine disk space. Tenable Core uses Linux logical volume management (LVM) for disk management.

Disk management via the Tenable Core interface assumes you understand basic LVM terminology:

- Volume group – A group of one or more physical volumes.
- Physical volume – A hard disk, hard disk partition, or RAID unit.

- Logical volume – A block of space on the volume group sized to mirror several or all of your physical volumes.
- File system – The file system on the logical volume.
- Mount point – The location where you mounted the file system in your operating system.

For more information about these concepts, see the general documentation for Linux.

## Tenable Core Partitions

Tenable Core deploys with the following preconfigured partitions:

> **Note**: This is not a complete list, but an example of the important partitions in Tenable Core.

- /boot
- Swap
- /
- /var/log
- /var/pcap
- /opt

To add more storage space to Tenable Core (typically, in `/opt`), add a disk or expand a disk as described in Add or Expand Disk Space.

## Add or Expand Disk Space

If you need more space in Tenable Core to meet the requirements, add space to your machine by expanding an existing disk or adding a new disk. For general information about Tenable Core disk management, see Disk Management.

> **Caution:** You cannot reassign disk space after you have assigned the space to a file system.

To add or expand existing disk space on your Tenable Core machine:

1. Power down your machine, as instructed by your local administrator or the documentation for your local environment.

2. Add a new disk or expand an existing disk in your machine configuration, as instructed by your local administrator or the documentation for your local environment.

3. Power up your machine, as instructed by your local administrator or the documentation for your local environment.

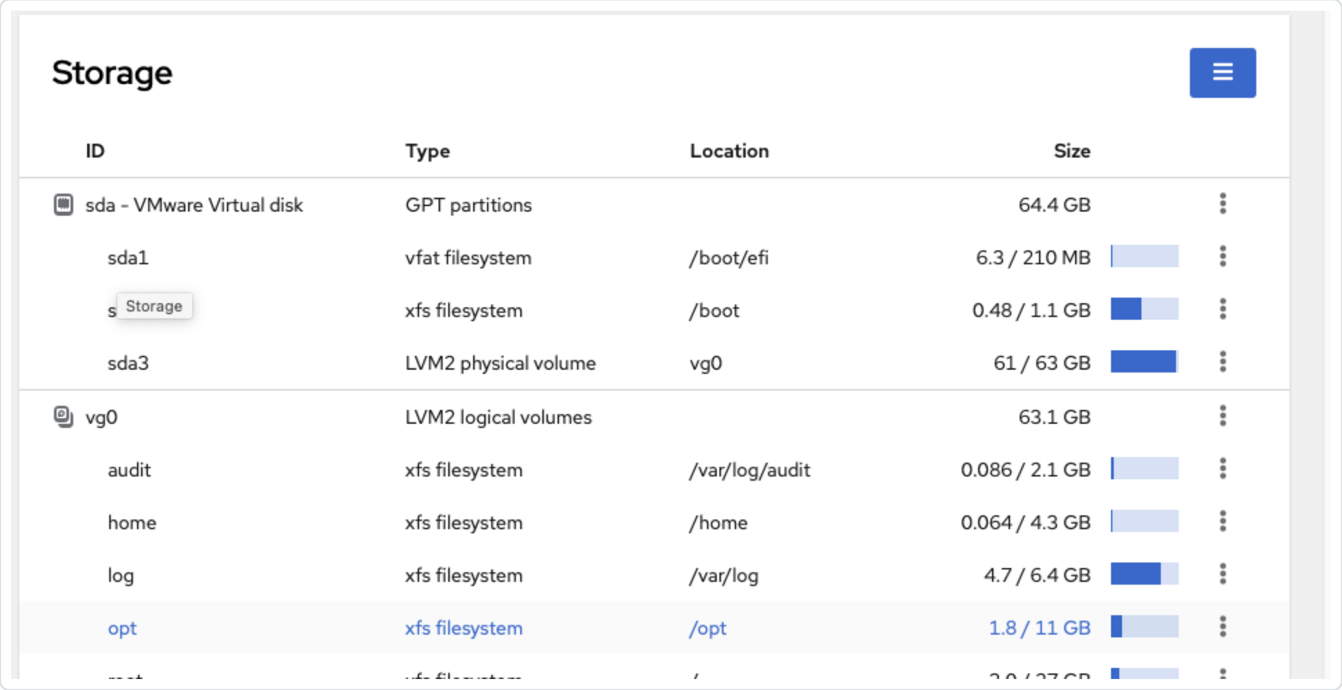
4. Log in to Tenable Core.

   The **System** page appears.

5. In the left navigation bar, click **Storage**.

   The **Storage** page appears.

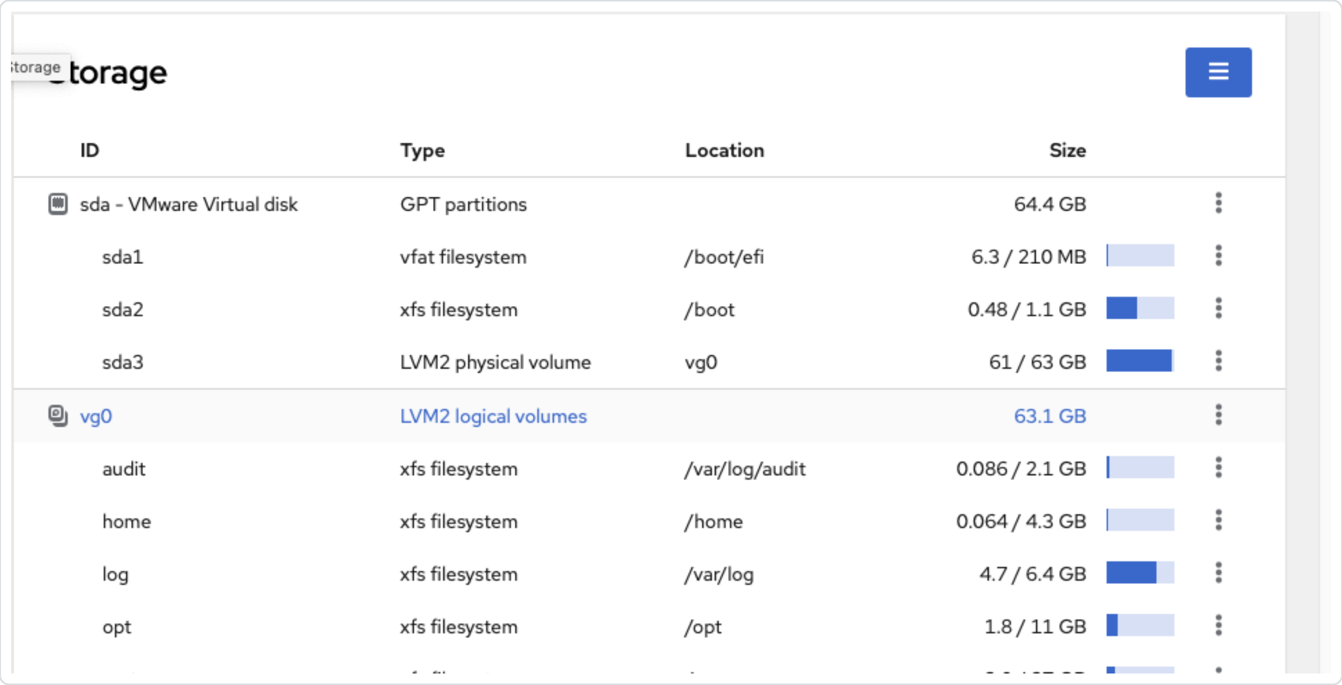
6. In the **Storage** section, locate the filesystem with `/opt` as the location and note the containing volume group (typically **vg0**).

   | ID | Type | Location | Size |
   |---|---|---|---|
   | sda - VMware Virtual disk | GPT partitions | | 64.4 GB |
   | sda1 | vfat filesystem | /boot/efi | 6.3 / 210 MB |
   | s | xfs filesystem | /boot | 0.48 / 1.1 GB |
   | sda3 | LVM2 physical volume | vg0 | 61 / 63 GB |
   | vg0 | LVM2 logical volumes | | 63.1 GB |
   | audit | xfs filesystem | /var/log/audit | 0.086 / 2.1 GB |
   | home | xfs filesystem | /home | 0.064 / 4.3 GB |
   | log | xfs filesystem | /var/log | 4.7 / 6.4 GB |
   | opt | xfs filesystem | /opt | 1.8 / 11 GB |
   | root | xfs filesystem | / | [illegible] |

   **Tip:** Typically, you want to add space to `/opt`. To add more storage space to a less common partition (for example, `/` or `/var/log`), locate the file system for that partition.

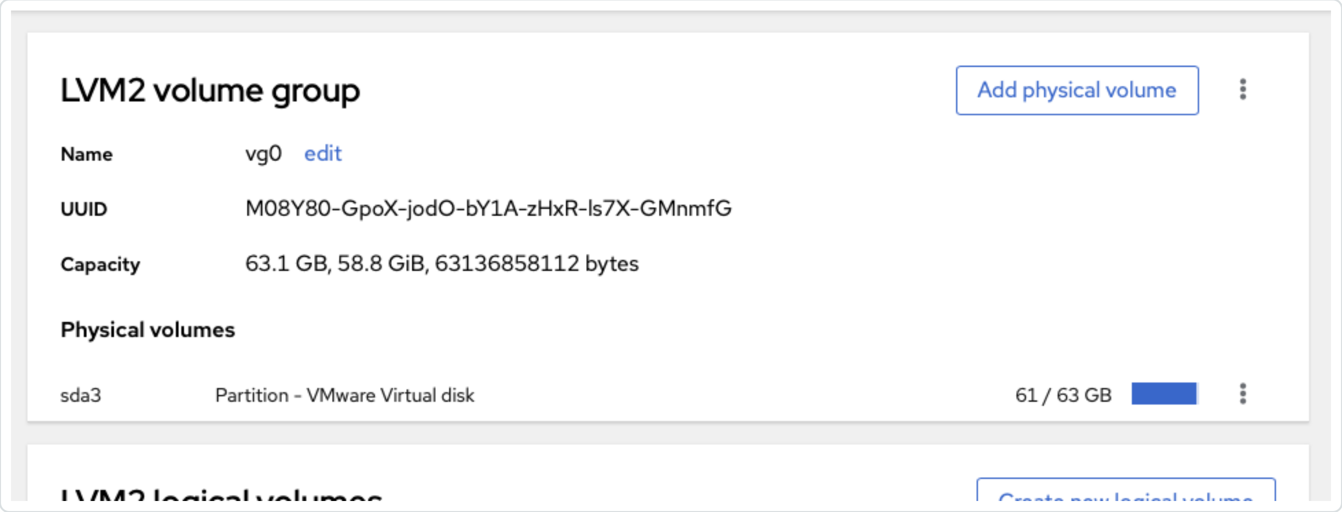
7. Click the row for the **volume group** that includes your preferred partition as the mount point.



## Storage

| ID | Type | Location | Size |
|---|---|---|---|
| sda - VMware Virtual disk | GPT partitions | | 64.4 GB |
| sda1 | vfat filesystem | /boot/efi | 6.3 / 210 MB |
| sda2 | xfs filesystem | /boot | 0.48 / 1.1 GB |
| sda3 | LVM2 physical volume | vg0 | 61 / 63 GB |
| vg0 | LVM2 logical volumes | | 63.1 GB |
| audit | xfs filesystem | /var/log/audit | 0.086 / 2.1 GB |
| home | xfs filesystem | /home | 0.064 / 4.3 GB |
| log | xfs filesystem | /var/log | 4.7 / 6.4 GB |
| opt | xfs filesystem | /opt | 1.8 / 11 GB |

The **LVM2 Volume Group** page appears:



## LVM2 volume group

**Name** vg0 edit

**UUID** M08Y80-GpoX-jodO-bY1A-zHxR-ls7X-GMnmfG

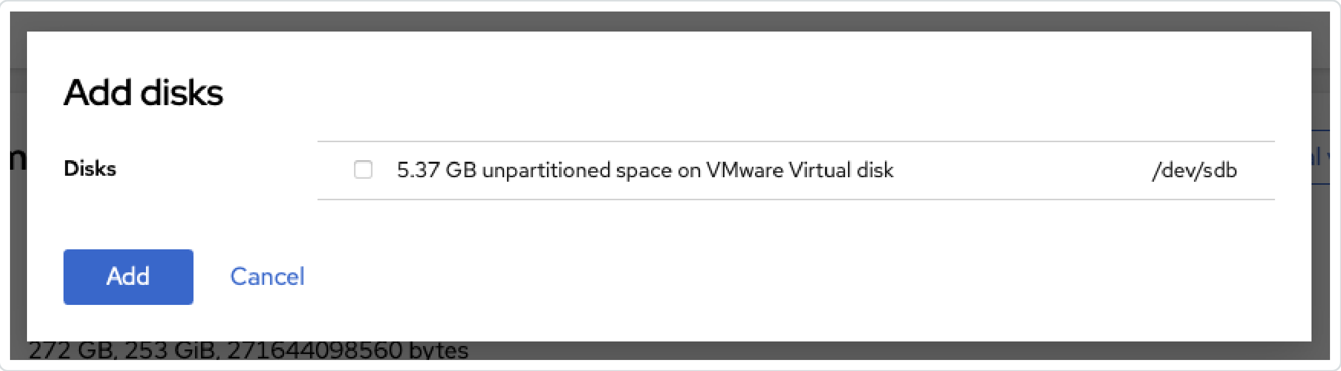
**Capacity** 63.1 GB, 58.8 GiB, 63136858112 bytes

**Physical volumes**

sda3 Partition - VMware Virtual disk 61 / 63 GB

LVM2 logical volumes

8. Click the **Add Physical Volume** button.



Add disks

Disks □ 5.37 GB unpartitioned space on VMware Virtual disk /dev/sdb

Add Cancel

272 GB, 253 GiB, 271644098560 bytes

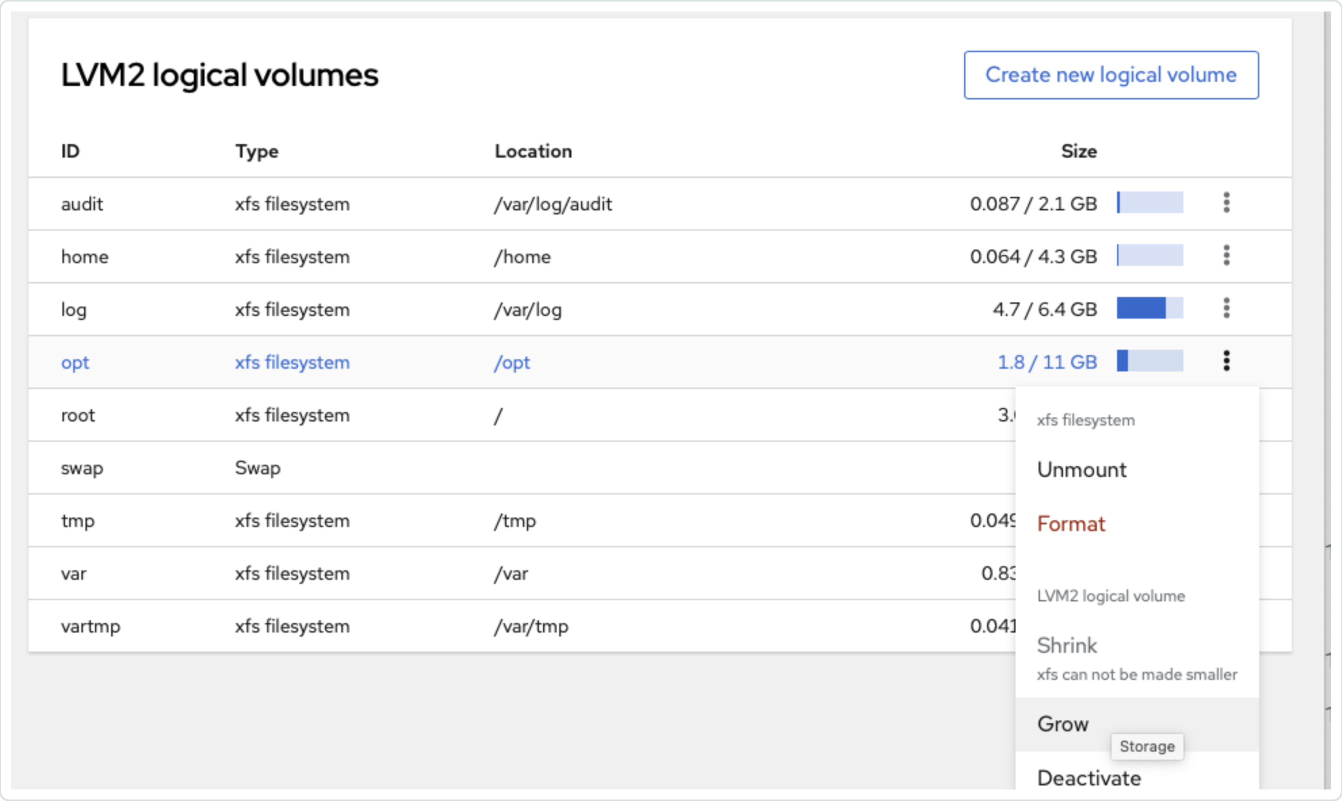
9. Click the checkbox for the space you added.

> **Note:** If the disk does not show up in this list, you need to expand it from the terminal. Run `sudo pvs -o pv_name,pv_size,dev_size`. If you see a disk with `dev_size` larger than `pv_size`, run `sudo pvresize /dev/<the disk>` then continue from step 11 of this page.

10. Click **Add**.

    The **Volume Group** page appears, updated to show the added space in the **Physical Volumes** section.

11. In the **LVM2 Logical Volumes** section, click the context ⋮ button for the file system **Name** that includes your preferred partition as the **Mount Point**.



LVM2 logical volumes

| ID | Type | Location | Size |
|---|---|---|---|
| audit | xfs filesystem | /var/log/audit | 0.087 / 2.1 GB |
| home | xfs filesystem | /home | 0.064 / 4.3 GB |
| log | xfs filesystem | /var/log | 4.7 / 6.4 GB |
| opt | xfs filesystem | /opt | 1.8 / 11 GB |
| root | xfs filesystem | / | 3. |
| swap | Swap | | |
| tmp | xfs filesystem | /tmp | 0.049 |
| var | xfs filesystem | /var | 0.83 |
| vartmp | xfs filesystem | /var/tmp | 0.041 |

12. Click **Grow**.

    The **Grow Logical Volume** window appears.

13. Use the slider to increase the size of the file system to your desired size (typically, to the new maximum).

14. Click **Grow**.

    The system expands the logical volume and the file system.

    The **Volume Group** page appears, refreshed to reflect the new size.

## Manually Configure a Static IP Address

If you deploy Tenable Core in an environment where DHCP is configured, Tenable Core automatically receives network configurations (including your IP address). If DHCP is not configured, you must manually configure a static IP address in Tenable Core.

For more information about the default NIC configuration in your environment, see License and System Requirements.

Before you begin:

- Deploy or install Tenable Core + Tenable OT Security Sensor, as described in Deploy or Install Tenable Core.
- Contact your network administrator and obtain your network's netmask and the IP address for your Tenable Core + Tenable OT Security Sensor deployment.

To configure a static IP address manually:

1. In the command-line interface (CLI) in Tenable Core, type the following to log in as a wizard user:

   ```
   tenable-y3u1xwh1 login: wizard
   Password: admin
   ```

   A prompt appears asking if you want to configure a static IP address.

2. Press the **y** key.

   (Optional) If the prompt does not appear, in the command-line interface (CLI) in Tenable Core, run the following command to access the configuration user interface:

   ```
   nmtui edit
   ```

   The list of connections page appears.

3. Select the connection you want to configure.
4. Press **Tab** to select **<Edit>**.
5. Press **Enter**.

   The **Edit Connection** window appears.

6. In the **IPv4 Configuration** row, press **Tab** to select **<Automatic>**.
7. Press **Enter**.
8. Select **<Manual>** from the drop-down box.
9. Press **Enter**.
10. Press **Tab** to select **<Show>**.

11. Press **Enter**.

    More configuration fields appear.

    > **Note**: Type the value for each configuration field as four numbers separated by a period. Refer to the examples for each field.

12. In the **Addresses** field, type the IPv4 IP address for your Tenable Core + Tenable OT Security Sensor deployment, followed by a forward slash and your netmask.

    Example:

    ```
    192.0.2.57/24
    ```

13. In the **Gateway** field, type your gateway IP address.

    Example:

    ```
    192.0.2.177
    ```

14. In the **DNS servers** field, type your DNS server IP address.

    Example:

    ```
    192.0.2.176
    ```

15. Press **Tab** to select **<Add...>**.

    > **Note**: Complete steps 12-15 only if you have more DNS server IP addresses to add. Repeat for each IP address.

16. Press **Enter**.

    An empty box appears in the **DNS servers** row.

17. In the new row, type your second DNS server IP address.

    Example:

    ```
    192.0.2.8
    ```

18. Select the check the box in the **Require IPv4 addressing for this connection** row.

19. Press **Tab** to select **<OK>**.

    The list of connections appears.

20. Press **Tab** to select **<Quit>**.

21. Press **Enter**.

    If you log in with a wizard, a prompt appears asking if you want to create an administrator account.

    To create an administrator account, see [Create a First-Time User Account](#).

    You are logged out of the wizard account.

22. Log into the CLI using the administrator account.

23. Restart the connection. In the command-line interface (CLI) in Tenable Core, run the following command:

    ```
    $ nmcli connection down "Wired connection 1" && nmcli connection up
    "Wired connection"
    ```

    > **Note**: Restarting the connection enables the system to recognize your static IP address. You can reboot the system instead to trigger the response.

What to do next:

- Confirm that the Tenable Core  MAC address matches the MAC address in your VMware passive scanning configuration. If necessary, modify your VMware configuration to match your Tenable Core MAC address. For more information, see [License and System Requirements](#).

## Create an Initial Administrator User Account

The first time you access Tenable Core + Tenable OT Security Sensor, you log in as a wizard user.

Then, you create an initial administrator account.

> **Tip:** If you delay creating an initial administrator account, after a few minutes, the system locks you out of the wizard user account. Reboot Tenable Core to proceed with the initial administrator account creation.

Before you begin:

- Deploy or install Tenable Core + Tenable OT Security Sensor, as described in Deploy or Install Tenable Core.

> **Note**: Passwords expire after a year and accounts are disabled 30 days after that. For more information, refer to the Tenable Community article.

To create an initial administrator user account:

1. Navigate to the URL for your Tenable Core virtual machine.

   The login page appears.

2. In the **User name** field, type **wizard**.
3. In the **Password** field, type **admin**.
4. Click **Log In**.

   The **Create New Administrator** window appears.

5. In the **Username** field, type the username you want to use for your administrator account.
6. In the **Password** field, type a new password for your administrator account.

   > **Note**: Your password must meet the following minimum requirements:
   >
   > - Minimum 14 characters long
   > - Cannot be a palindrome (i.e., a word or phrased spelled the same backward and forward)

7. Click **Create Account**.

   A confirmation window appears.

8. Click **Finish Setup**.

   Tenable Core creates your user account.

9. Click **Log Out**.

   Tenable Core logs you out.

What to do next:

- (Optional) If you want to log in again, see Log In to Tenable Core.
- (Optional) If you want to create another user account, see Create New User Account.

  > **Note**: Log in again to create a new user account.

## Create a Password for the Initial Administrator User Account

If you deployed in a cloud environment and did not create a password during deployment, you cannot access the Tenable Core interface. Create a password for your administrator account via SSH to access the Tenable Core interface.

You do not need to create a password via SSH when deploying in any of the other supported environments.

> **Caution:** Tenable Core does not prompt you with password expiration information upon logging in to the user interface. You can check account expiration status in the **Accounts** tab. If your account expires, your log in authentication fails, and you must contact your system administrator.

### Before you begin:

- Confirm that you have an SSH client installed that can access your Tenable Core server.

### To create a password for the initial administrator user account:

1. Open a connection to Tenable Core with your SSH client via one of the following methods:

   - If your SSH client uses a user interface, open the interface and follow the prompts to connect to Tenable Core via SSH.
   - If your SSH client uses a command-line interface (CLI), you need to run a command appropriate for your SSH client. The following command is an example of a valid command for some clients:

     ```
     ssh -i <Path to your private key> <your administrator
     username>@<your Tenable Core hostname or IP address>
     ```

   Your ssh client connects to Tenable Core.

> **Note:** When prompted, provide your Tenable Core username via one of the following methods:
>
> - If you deployed in Amazon Web Service (AWS), type *ec2-user* as your username.
> - If you deployed in Microsoft Azure, type the username you configured during your deployment.

2. Run the `sudo passwd` command.

   ```
   sudo passwd "$USER"
   ```

   The SSH client prompts you to provide a password.

3. Type the password you want to use for your administrator account.

   > **Note**: Your password must meet the following minimum requirements:
   >
   > - Minimum 14 characters long
   > - Cannot be a palindrome (i.e., a word or phrased spelled the same backward and forward)

4. Press **Enter**.

   Tenable Core assigns the password to your administrator account.

5. Run the `exit` command to log out of Tenable Core.

What to do next:

- Continue getting started with Tenable Core + Tenable OT Security Sensor, as described in Get Started.

## Log In to Tenable Core

Log in to Tenable Core to configure and manage your Tenable Core + Tenable OT Security Sensor instance in the Tenable Core interface.

Before you begin:

- Deploy Tenable Core + Tenable OT Security Sensor, as described in Deploy or Install Tenable Core.

**Note:** For information on inbound and outbound port requirements, see Access Requirements.

## To log in to Tenable Core:

1. Navigate to the URL for your Tenable Core virtual machine.

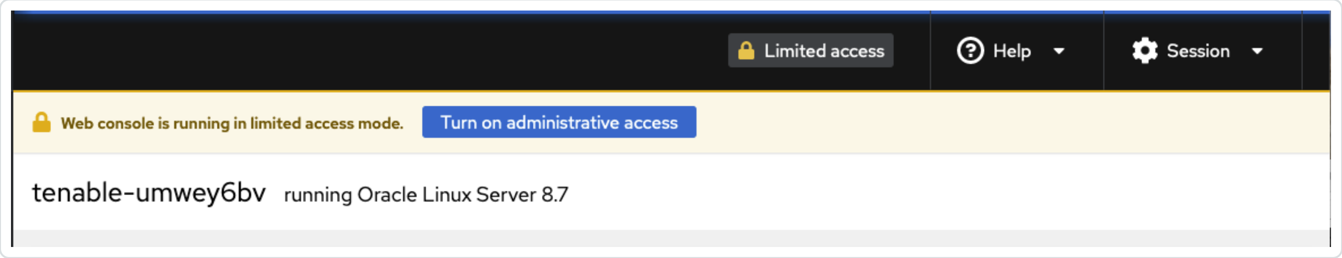
   The login page appears.

2. In the **User name** field, type your username.
3. In the **Password** field, type your password.
4. Click **Log in**.

   Tenable Core logs you in to the user interface.

## To access administrative or limited access modes:

- You can access an administrative access mode by clicking the **Administrative access** 🔒 button at the top of the page. In administrative access mode, you can switch back to a limited access mode by clicking the **Limited access** 🔒 button in the same location.



Web console is running in limited access mode.

tenable-umwey6bv running Oracle Linux Server 8.7

## Link Tenable Core to the Tenable On-Prem Connector

You can link Tenable Core to Tenable On-Prem Connector to as a VMware virtual machine and deploy it on a hypervisor.

**Note**: For more information about the Tenable On-Prem Connector, refer to the *Tenable On-Prem Connector Deployment Guide*.

Before you begin:

- Confirm your environment supports your intended use of the instance, as described in License and System Requirements.
- Confirm your internet and port access supports your intended use of the instance, as described in Access Requirements.
- Confirm you have appropriate permissions to manage connectors in Tenable Exposure Management.
- Deploy Tenable Core in VMware as shown in Deploy Tenable Core in VMware.

## To find and copy your linking key for the Tenable On-Prem Connector

1. In the Tenable user interface, in the left-side menu, click **Connectors**.

   The Connector Library appears.

2. Click **Tenable Gateway**.

   The Tenable Gateway connection pop-up appears with your generated **private key**.

| Parameter | Description |
|---|---|
| **Gateway Name** | The name you give your new Tenable On-Prem Connector. |
| **Private Key** | Your Tenable On-Prem Connector private key.<br>**Note**: Be sure to record and safely secure your private key. |
| **UID** | (Optional) Name of the Sensor Proxy. |

3. Assign a descriptive name to your new connection and record your **private key**.

4. Download the Tenable Core `.ova` file.

   > **Note**: Ensure UDP port 51820 is open to `site_url`.

5. When the file installation completes, log into your Tenable Core user interface.

## To link Tenable Core to the Tenable On-Prem Connector

1. In the Tenable Core user interface, click **Tenable On-Prem Connector**.

   The configuration page appears.

2. In the top section of the user interface, click **Limited Access**.

   A **Switch to administrative access** pop-up appears.

3. Enter your admin password.

4. Click **Authenticate**.

   The Tenable On-Prem Connector Pairing pop-up appears.

5. Paste the **Private Key** that you generated within the Tenable user interface.

6. Click **Complete Pairing**.

   A success message appears.

# Configure Tenable Core

You can use the Tenable Core user interface to configure Tenable Core + Tenable OT Security Sensor.

Tenable Core + Tenable OT Security Sensor Information

Configure OT Security in the OT Security User Interface

Configure a Proxy Server

SNMP Agent Configuration

Configure an SNMP Agent via the User Interface

Configure an SNMP Agent via the CLI

View the Dashboard

Add a Host

Edit a Host

Delete a Host

Synchronize Accounts

View the System Log

Filter the System Log

Generate a Diagnostic Report

View OT Security Sensor Logs

Access the Terminal

Start, Stop, or Restart Your Application

## Tenable Core + Tenable OT Security Sensor Information

The OT Security Sensor information page displays several information tiles related to your instance. This information allows you to monitor installation elements and view logs.

## Installation Info

Parameters unique to your OT Security Sensor installation.

**Note:** Some items in this section may be hidden to users with insufficient permissions.

| Installation Parameter | Description |
|---|---|
| **Service Status** | The current status of your OT Security Sensor. Possible values are: running, stopping, stopped, starting, and failed. |
| **Application Version** | The version of OT Security Sensor currently running |
| **RPM Version** | The version of OT Security Sensor that is currently installed on the system. |
| **Sensor Identifier** | The identification string of the OT Security Sensor you are running. |
| **ICP Identifier** | The identification string of the ICP server on which your system is running. |
| **ICP IP Address** | The IP address of the ICP server on which your system is running. |

## Pairing Info

The pairing information pulled from OT Security appears in the parameters described in the following table.

| Status Type | Current Status | User Interface Function |
|---|---|---|
| **Pairing Status** | Possible values are: **Pairing** and **Waiting for ICP approval** | **Restart Pairing**: You can click this button to use the previously saved credentials to start the pairing process again. Connects outside of the tunnel via HTTPS to reconfigure the tunnel to repair various broken connections. This is useful if your keys or certifications have changed. |
| **Connection Status** | Possible values are: **Connected** | **Pause Data Transfer**: You can enable or disable passing collected OT traffic data to the ICP with this button. |

| | | |
|---|---|---|
| | and **Not Connected** | |

## OT Security ICP Certificate

The ICP certificate information for your OT Security Sensor instance.

| Parameter Name | Description |
|---|---|
| **Certificate Subject** | Human-readable certificate subject information. |
| **Certificate Issuer** | Human-readable certificate issuer information. |
| **Certificate Fingerprint** | Brief cryptographic hash that can be used to confirm the certification set on the ICP is the one being received by OT Security Sensor. |
| **Not Valid Before** | The beginning date for which the offered certificate is valid. |
| **Not Valid After** | The ending date for which the offered certificate is valid. |
| **Approval Status** | Possible values are: **Approved**, **N/A**, **Pending user approval**, and **Mismatching certificates** |
| **Upload Approved Certificate** | You can upload the ICP's certificate (.pem format) and pre-approve it as an alternative to examining the certificate fingerprint after the ICP offers it. This is helpful when configuring a sensor before it has network connectivity to the ICP, or before the ICP has been provisioned. The ICP needs the custom certificate and key applied before allowing the sensor to attempt a connection. |

## View Logs

The OT Security Sensor information page contains a tile for OT Security Sensor logs. For more information, see View Logs.

## Configure OT Security in the OT Security User Interface

After you deploy Tenable Core + Tenable OT Security, you can access the OT Security interface from the Tenable Core interface to configure OT Security.

### To access the OT Security interface from the Tenable Core interface:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Tenable.ot**.

   The **Tenable.ot** page appears.

3. If prompted, provide your OT Security instance password.

   For more information, contact your Tenable representative.

4. In the **Installation Info** section, next to **URLs**, click the URL hyperlink.

   The OT Security interface appears.

5. Configure OT Security, as described in the *OT Security User Guide*.

## Configure a Proxy Server

If your organization configured a proxy server to conceal your IP address, share an internet connection on your local network, or control internet access on your network, set the proxy configuration in Tenable Core.

> **Note:** This proxy configuration only applies to updates.

### Before you begin:

- Log in to Tenable Core in a browser, as described in Log In to Tenable Core.

### To configure a proxy server:

1. In the left navigation bar, click **Update Management**.

   The **Updates** page appears.

2. In the **Proxy Host** box, type the hostname and port for your proxy server in the format *hostname:port* (for example, https://192.0.2.1:2345).

3. (Optional) In the **Proxy Username** box, type a username for your proxy server.

4. (Optional) In the **Proxy Password** box, type a password for the proxy.

5. Click **Save Proxy**.

   The system initiates your proxy configuration.

## SNMP Agent Configuration

If your organization uses a Simple Network Monitoring Protocol (SNMP) network management station (NMS) for device monitoring, you can install a `net-snmp` agent onto Tenable Core to report device data to your NMS.

You can use the user interface to configure common SNMPv2 or SNMPv3 settings. To configure other advanced or uncommon SNMP settings, use the CLI.

- Configure an SNMP Agent via the User Interface
- Configure an SNMP Agent via the CLI

To stop, start, restart, or reload the SNMP service in Tenable Core, or to view SNMP logs, see Manage Services.

## Configure an SNMP Agent via the User Interface

**Required User Role:** Administrator with **Reuse my password for privileged tasks** enabled

If your organization uses a Simple Network Monitoring Protocol (SNMP) network management station (NMS) for device monitoring, you can install a `net-snmp` agent onto Tenable Core to report device data to your NMS.

You can use the user interface to configure common SNMPv2c or SNMPv3 settings. To configure other advanced or uncommon SNMP settings, use the CLI as described in Configure an SNMP Agent via the CLI.

To install and configure an SNMP agent on Tenable Core via the user interface:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **SNMP**.

   If you already installed an SNMP agent on Tenable Core, the **SNMP** page appears. If you do not have an SNMP agent installed on Tenable Core, the **Install SNMP Packages** window appears.

3. (Optional) In the **Install SNMP Packages** window, click **Install SNMP** to install the SNMP service.

   Tenable Core installs the SNMP service and opens inbound ports 161 and 162 on Tenable Core.

   The **SNMP** page appears.

4. In the **SNMP common setup** section, configure the contact properties you want to appear on your NMS for this instance of Tenable Core.

| Option | Description |
|---|---|
| Contact | A name, email address, or other identifier for the person you want to list as the contact for questions about this instance of Tenable Core. |
| Location | A geographic, organizational, or other location descriptor for the person you want to list as the contact for questions about this instance of Tenable Core. |

5. If you want to grant an SNMPv2c NMS access to Tenable Core, in the **SNMPv2c access control setup** section, configure one or both of the settings:

| Option | Description |
|---|---|
| read-only access community name | Specifies the read-only community string for the SNMPv2c NMS. |
| read-write access community name | Specifies the read-write community string for the SNMPv2c NMS. |

6. If you want to grant an SNMPv3 NMS read-only access to Tenable Core, in the **SNMPv3 access control setup** section, configure the settings:

| Option | Description |
|---|---|
| Read-only Hash algorithm | Specifies the read-only hash algorithm for the SNMPv3 NMS. |
| Read-only access username<br>Read-only access user password | Specifies the username and password for an account on the SNMPv3 NMS. |

7. If you want to grant an SNMPv3 NMS read-write access to Tenable Core, in the **SNMPv3 access control setup** section, configure the settings:

| Option | Description |
|---|---|
| Read-write Hash algorithm | Specifies the read-write hash algorithm for the SNMPv3 NMS that you want to grant read-write access on Tenable Core. |
| Read-write access username<br>Read-write access user password | Specifies the username and password for an account on the SNMPv3 NMS. |

8. Click **Save Configuration**.

   Tenable Core saves your SNMP configuration.

## Configure an SNMP Agent via the CLI

**Required User Role:** Root user

If your organization uses a Simple Network Monitoring Protocol (SNMP) network management station (NMS) for device monitoring, you can install a `net-snmp` agent onto Tenable Core to report device data to your NMS.

> **Note:** For more detailed information on SNMP configuration, refer to the Net-SNMP Documentation.

To install and configure an SNMP agent on Tenable Core via the CLI:

1. Prepare the `net-snmp` agent configuration file and add it to Tenable Core, as described in the Net-SNMP tutorial in the *Net-SNMP Documentation*.
2. Log in to Tenable Core via the **Terminal** page or command line interface (CLI).

   The command line appears.
3. In the `/etc/snmp/` directory, open the `snmpd.local.conf` file.

   The file opens.
4. Locate the **IncludeFile** line in the file.
5. Comment out the **IncludeFile** line to instruct Tenable Core to ignore all current and future configurations on the **SNMP** page of the Tenable Core user interface.

   Tenable Core ignores SNMP configurations in the Tenable Core user interface.

> **Note:** IP tables may need to be updated to facilitate SNMP communication. Be sure to confirm that your OS configuration allows for this communication.

## View the Dashboard

You can use the **Dashboard** page to view usage statistics and manage your attached servers.

To view the Tenable Core dashboard:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.
2. Hover over the left navigation bar and click **Overview**.

   The **Overview** page appears.

   You can:

| Section | Action |
|---|---|

| | |
|---|---|
| Data graphs | • View a graph of the **CPU** usage on your instance.<br>• View a graph of the **Memory** usage on your instance.<br>• View a graph of the **Network** bandwidth usage on your instance.<br>• View a graph of the **Disk I/O** bandwidth usage on your instance.<br>• To change the time range for data displayed in the graph:<br>1. In the top-right corner of the graph, click the drop-down box.<br>2. Select a time range.<br>The system refreshes the graph. |
| **Servers** table | • Add a server, as described in Add a Host.<br>• Edit a server, as described in Edit a Host.<br>• Delete a server, as described in Delete a Host.<br>• Synchronize user accounts, as described in Synchronize Accounts.<br>• To view detailed information about a server, click a server row. For more information, see System. |

## Add a Host

To add a new host:

**Note**: You can add as many hosts to the Dashboard as you want.

1. Hover over the far-left navigation bar.

   The left navigation plane appears.

2. Click **Dashboard**.

   The **Dashboard** page appears.

3. Click the + icon.

   The **Add Machine to Dashboard** window appears.

4. In the **Address** field, type the IP address or hostname for the host you want to add.

5. In the **Color** field, click the color you want to represent the host.

6. Click **Add**.

   A confirmation window appears.

   > **Note**: If Tenable Core cannot establish authentication, the Unknown Host window appears. Contact your administrator to confirm your server's name or IP address.

7. Click **Connect**.

   A credentials window appears.

8. Type your credentials in the **User name** and **Password** fields.

   > **Note**: To synchronize your accounts so that your account information and passwords are the same across multiple servers, click the *synchronize accounts and passwords* link. Refer to Synchronize Accounts for more information.

9. Click **Log In**.

   Tenable Core adds the host to your list of hosts in the **Hosts** table.

   > **Note**: If the host does not appear in the list right away, refresh your browser.

## Edit a Host

### To edit a server:

1. From the top bar in the **Hosts** table, click the ✓ icon.

   A pencil icon (✎) and a trashcan icon (🗑) appear next to each host's name.

2. Click the ✎ icon.

   The **Edit hosts** window appears.

3. Do any of the following:

- In the **Host Name** box, type the name you want for your server.
- Update the host color:
  - In the **Color** box, click the color bar.

    A color menu appears.
  - Click the color you want to represent the host.

    The host color changes.

4. Click **Set**.

   Tenable Core updates your host information.

## Delete a Host

To delete a host:

1. From the top bar in the **Hosts** table, click the check mark icon.

   A pencil icon and a trashcan icon appear next to each server name.
2. Click the trashcan icon.

   The host disappears from the host list.

## Synchronize Accounts

If you have multiple user accounts but do not want to manage credentials for each one, you can synchronize your accounts, which allows you to navigate seamlessly between accounts without providing a different username and password for each account.

> **Note**: You can synchronize accounts while either adding or editing servers in the Dashboard.

To synchronize accounts:

1. While either adding or editing a server, click the **Synchronize users** link in the dialogue box. The **SYNCHRONIZE USERS** dialogue box appears with a list of your accounts.

> **Note**: If you are adding a server, the linked text in the dialogue box is **synchronize accounts and passwords**.

2. Check the boxes next the accounts you want to synchronize.

3. Click **Synchronize**.

## View the System Log

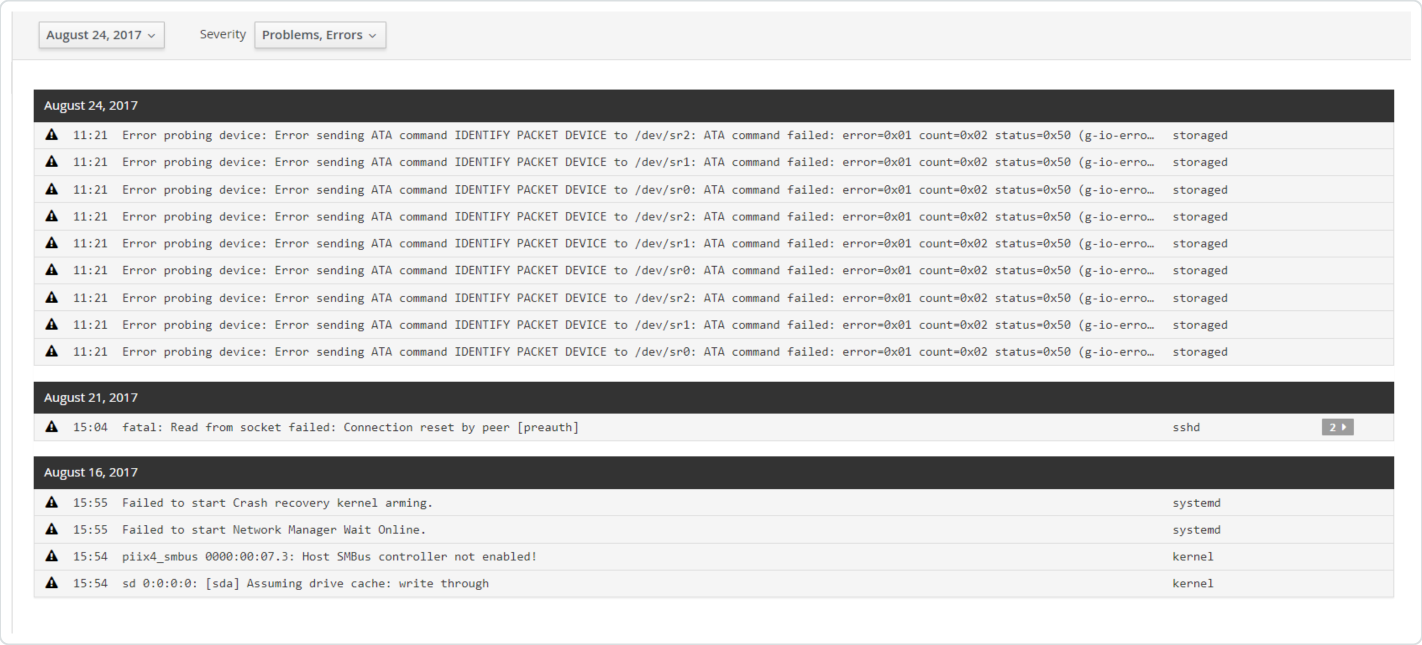
You can use the **System Log** page to view errors encountered in the system. The system log lists, categorizes, and stores system issues that have occurred within the last seven days.

To view Tenable Sensor Proxy logs:

1. Select the desired log from the drop-down box.

2. Click **View Log**.
   The log appears in the text box.

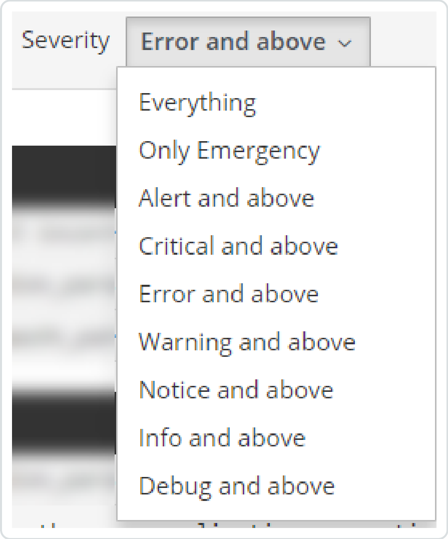
3. Click on an individual entry (row) to get additional information.



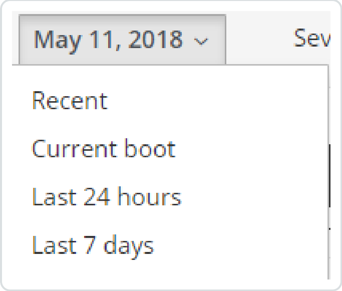
```
August 24, 2017
⚠ 11:21  Error probing device: Error sending ATA command IDENTIFY PACKET DEVICE to /dev/sr2: ATA command failed: error=0x01 count=0x02 status=0x50 (g-io-erro…  storaged
⚠ 11:21  Error probing device: Error sending ATA command IDENTIFY PACKET DEVICE to /dev/sr1: ATA command failed: error=0x01 count=0x02 status=0x50 (g-io-erro…  storaged
⚠ 11:21  Error probing device: Error sending ATA command IDENTIFY PACKET DEVICE to /dev/sr0: ATA command failed: error=0x01 count=0x02 status=0x50 (g-io-erro…  storaged
⚠ 11:21  Error probing device: Error sending ATA command IDENTIFY PACKET DEVICE to /dev/sr2: ATA command failed: error=0x01 count=0x02 status=0x50 (g-io-erro…  storaged
⚠ 11:21  Error probing device: Error sending ATA command IDENTIFY PACKET DEVICE to /dev/sr1: ATA command failed: error=0x01 count=0x02 status=0x50 (g-io-erro…  storaged
⚠ 11:21  Error probing device: Error sending ATA command IDENTIFY PACKET DEVICE to /dev/sr0: ATA command failed: error=0x01 count=0x02 status=0x50 (g-io-erro…  storaged
⚠ 11:21  Error probing device: Error sending ATA command IDENTIFY PACKET DEVICE to /dev/sr2: ATA command failed: error=0x01 count=0x02 status=0x50 (g-io-erro…  storaged
⚠ 11:21  Error probing device: Error sending ATA command IDENTIFY PACKET DEVICE to /dev/sr1: ATA command failed: error=0x01 count=0x02 status=0x50 (g-io-erro…  storaged
⚠ 11:21  Error probing device: Error sending ATA command IDENTIFY PACKET DEVICE to /dev/sr0: ATA command failed: error=0x01 count=0x02 status=0x50 (g-io-erro…  storaged

August 21, 2017
⚠ 15:04  fatal: Read from socket failed: Connection reset by peer [preauth]                                                                sshd      2 ▸

August 16, 2017
⚠ 15:55  Failed to start Crash recovery kernel arming.                                                                                     systemd
⚠ 15:55  Failed to start Network Manager Wait Online.                                                                                      systemd
⚠ 15:54  piix4_smbus 0000:00:07.3: Host SMBus controller not enabled!                                                                      kernel
⚠ 15:54  sd 0:0:0:0: [sda] Assuming drive cache: write through                                                                             kernel
```

## Filter the System Log

Several log type filters are available. The **Everything** option is selected by default. Select another option using the drop-down menu at the top of the page. The logs are listed with the most recent entry displayed first. Previous days are divided into sections with the corresponding date displayed in the header.



Filter the logs using the drop-down menu. Click on the date to display the filter options for the logs.



## Generate a Diagnostic Report

You can use diagnostic reports to assist with troubleshooting Tenable Core.

### To generate a diagnostic report for troubleshooting:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Diagnostic Reports**.

   The **Diagnostic Reports** page appears.

3. Click the **Run report** button.

4. A user interface list appears as the report generates.

5. When the report is complete, the status displays **Done**.

6. Click the **Download** button next to each report that you want to download.

   Tenable Core saves and prints the report.

## View OT Security Sensor Logs

If you experience an issue during the OT Security Sensor installation process or an issue with the OT Security Sensor service, you can view the logs to access more troubleshooting information.

To view logs for OT Security Sensor:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Tenable.ot Sensor**.

   The **Tenable.ot Sensor** page appears. The logs are located at the bottom of the page.

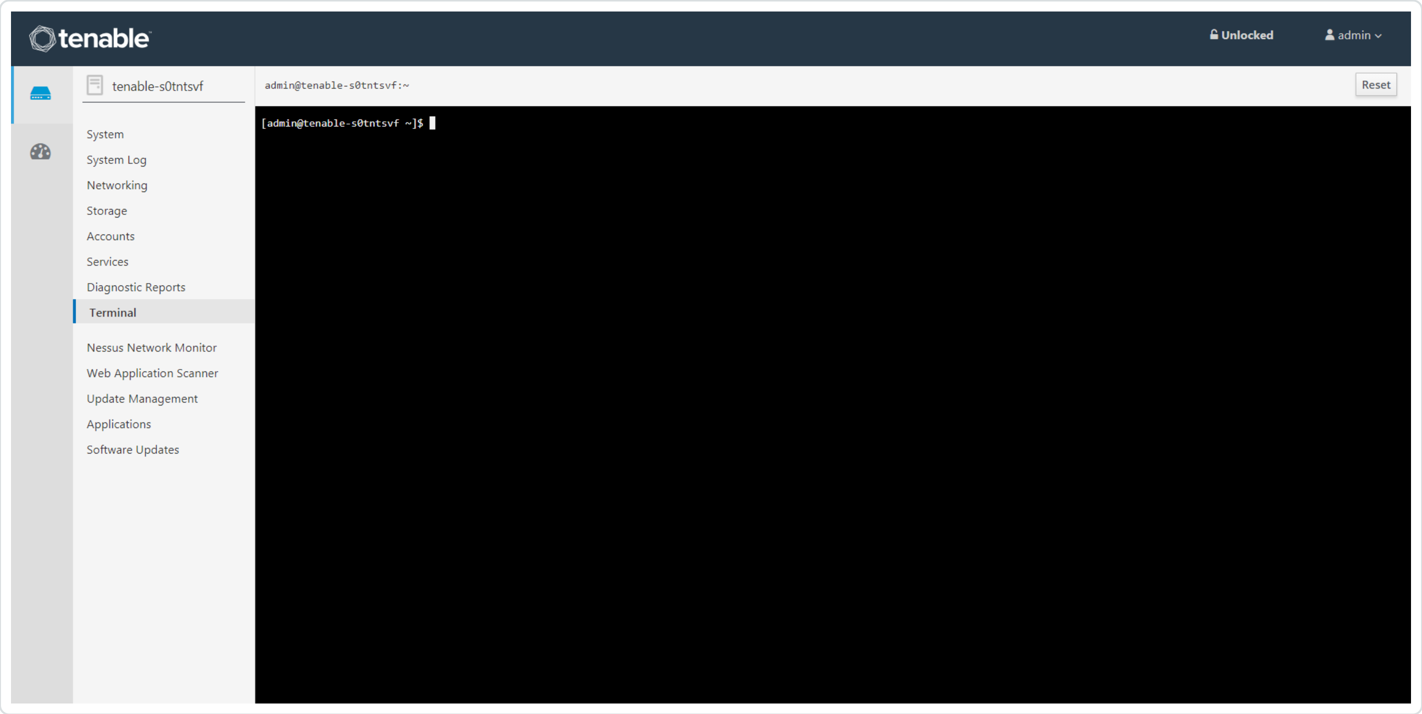
3. (Optional) To filter the logs that appear, select values at the bottom of the OT Security Sensor page for one or more of the following filters:

   - Time Range
   - Severity
   - Service

OT Security Sensor filters the logs based on your selected filter.

## Access the Terminal

The **Terminal** page provides a console to access a user-specific command-line interface.



```
admin@tenable-s0tntsvf:~
[admin@tenable-s0tntsvf ~]$
```

## Start, Stop, or Restart Your Application

To start, stop, or restart your application via the user interface:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click OT Security Sensor.

   The application page appears.

3. In the **Installation Info** section, click **Start**, **Stop**, or **Restart**.

To start, stop, or restart your application via the CLI:

1. Log in to Tenable Core via the **Terminal** page or command line interface (CLI).

   The command line appears.

2. To change the status of your application, see the *OT Security Documentation*.

# Manage the System

You can use the **Overview** page to view usage statistics and manage system settings.

To manage the Tenable Core system:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

   You can:

| Section | Action |
|---|---|
| Health | - View your number of failed services.<br>- View your number of available updates.<br>- View the date, time, and location of the last successful login.<br>- View login history. |
| System information | - View your system **Model**.<br>- View the **Asset tag** of your system.<br>- View the **Machine ID** of your system<br>- View the **Uptime** of your system.<br>- View your system's hardware details. |
| Usage | - View a graph of the **CPU** usage on your instance.<br>- View a graph of the **Memory** usage on your instance.<br>- View metrics and history of usage of your instance. |
| Configuration | - View and edit the hostname for your instance, as described in Edit Your Tenable Core Hostname.<br>- View the **System time**. |

| | |
|---|---|
| | • View and edit the **Domain** for your instance.<br>• Change the **Performance profile** for your instance, as described in Change Performance Profile.<br>• View and edit the **Cryptographic policy** for your instance.<br>• View the **Secure shell keys** for your instance. |

## Manage System Storage

You can use the **Storage** page to view real-time system storage graphs, filesystem information, and logs. For more information, see Disk Management.

To manage Tenable Core storage:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Storage**.

   The **Storage** page appears.

   You can:

| Section | Action |
|---|---|
| Graphs | • View a graph of the **Reading** storage activity on your instance.<br>• View a graph of the **Writing** storage activity on your instance. |
| **Filesystems** table | • View information about each filesystem.<br>• Click a row to view more details about the filesystem.<br>• Rename a filesystem, as described in Rename a Filesystem.<br>• Delete a filesystem, as described in Delete a Filesystem. |

## Rename a Filesystem

To rename a filesystem in Tenable Core:

1. In the left navigation pane, click **Storage**.

   The **Storage** page appears.

2. In the **File Systems** section, click on the individual file in the file systems list.

   The details page appears.

3. Click the **Rename** button in the upper right section of the window.

   A new window appears.

4. Enter the new name for the **File System**.

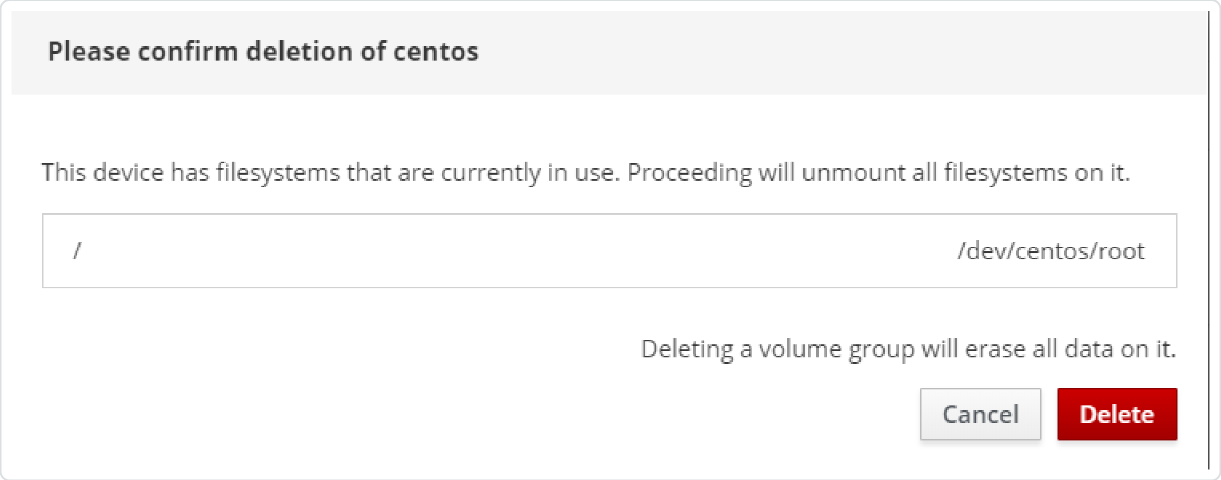
5. Click **Create**.

   The new name appears on the page.

## Delete a Filesystem

To delete a filesystem in Tenable Core:

1. In the left navigation pane, click the **Storage** option. The **Storage** page displays.
2. In the **File System** section, click the individual file in the files systems list. The details page appears.
3. Click the red **Delete** button in the system heading.
4. Confirm that you want to delete the **File System**.



**Please confirm deletion of centos**

This device has filesystems that are currently in use. Proceeding will unmount all filesystems on it.

| / | /dev/centos/root |
|---|---|

Deleting a volume group will erase all data on it.

**Caution:** Deleting a volume group erases all data on it.

# Manage Services

You can use the **Services** page to view information about targets, system services, sockets, timers, and paths.

## To manage Tenable Core services:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Services**.

   The **Services** page appears.

   You can:

| Tab | Action |
|---|---|
| **Targets** | 1. Click **Stop**, **Start**, **Restart**, or **Reload**.<br>**Note**: Restarting a service completely stops and restarts the service. Reloading a service only reloads the service's configuration files.<br>The system changes the status of the service. |
| **System Services** | • View a list of system services.<br>• Click a row to view detailed information about a service.<br>• To change the status of a service:<br>1. Click a row.<br>The service details page appears.<br>2. Click **Stop**, **Start**, **Restart**, or **Reload**.<br>**Note**: Restarting a service completely stops and restarts the service. Reloading a service only reloads the service's configuration files.<br>The system changes the status of the service. |

| | |
|---|---|
| **Sockets** | • View a list of socket services.<br>• Click a row to view detailed information about a service.<br>• To change the status of a service:<br>1. Click a row.<br>The service details page appears.<br>2. Click **Stop**, **Start**, **Restart**, or **Reload**.<br>**Note**: Restarting a service completely stops and restarts the service. Reloading a service only reloads the service's configuration files.<br>The system changes the status of the service. |
| **Timers** | • View a list of timer services.<br>• Click a row to view detailed information about a service.<br>• Create a new timer, as described in Create a Timer.<br>• To change the status of a service:<br>1. Click a row.<br>The service details page appears.<br>2. Click **Stop**, **Start**, **Restart**, or **Reload**.<br>**Note**: Restarting a service completely stops and restarts the service. Reloading a service only reloads the service's configuration files.<br>The system changes the status of the service. |
| **Paths** | • View a list of path services.<br>• Click a row to view detailed information about a service.<br>• To change the status of a service: |

| | |
|---|---|
| | 1. Click a row.<br>The service details page appears.<br>2. Click **Stop**, **Start**, **Restart**, or **Reload**.<br>**Note**: Restarting a service completely stops and restarts the service. Reloading a service only reloads the service's configuration files.<br>The system changes the status of the service. |

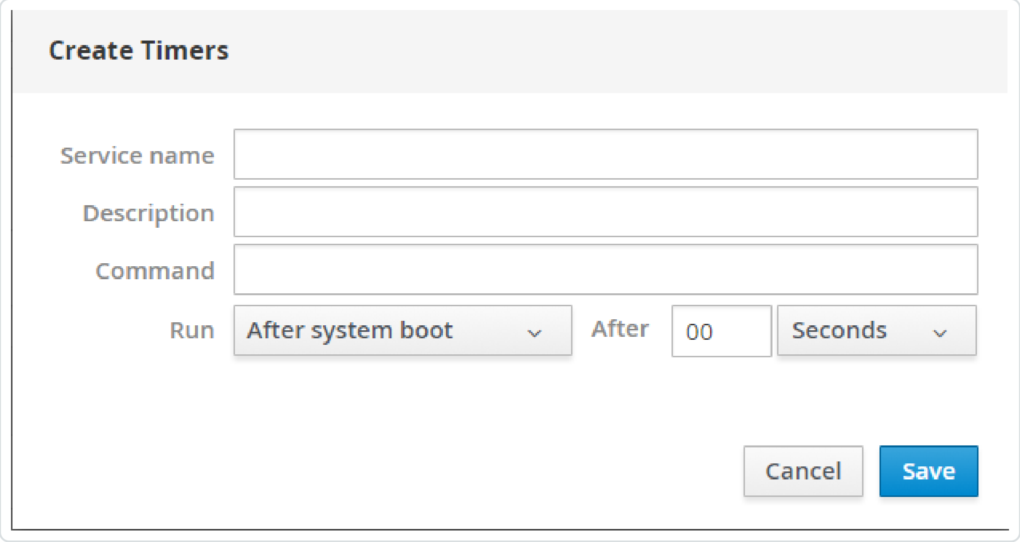
## Create a Timer

To create a timer:

1. In the left navigation pane, click the **Services** option. The **Services** page displays.
2. In the **Services** page heading, click the **Create Timers** button.

   A new window appears.
3. Enter the **Service Name**, **Description**, **Command**, and **Run** information.
4. Click **Save**.

   The new timer displays in the enabled section of the list.



Create Timers

Service name

Description

Command

Run After system boot After 00 Seconds

## Manage Updates

You can use the **Updates Management** page to manage your Tenable Core and application updates.

If your deployment is online, Tenable recommends:

- Performing on-demand updates, as needed. For more information, see Update On Demand.

If your deployment is offline, you can perform offline updates. For more information, see Update Tenable Core Offline.

**Note:** Tenable OT has centralized sensor updates provided by the ICP as of Tenable Core + Tenable OT Security version 3.16.55. To ensure functionality, the ICP needs to have offline updates attached and mounted. When the sensor is connected to the ICP and the ICP has updates, running updates from the sensor installs the software served by the ICP. The ICP self-contained ISO, or quarterly offline ISO of the ICP, provides updates for the sensor. For sensor upgrade via the ICP, you can upload any offline ISO to the ICP. All three types; EM, ICP, and Sensor ISOs, contain the relevant sensor upgrade data. The Sensor ISO is the smallest by file size.

**Important**: OT Security 3.19 is supported only on Oracle Linux 8 (OL8). To upgrade to OT Security 3.19, you must first migrate to the Oracle Linux 8 (OL8) operating system. For more information, see the following knowledge base articles:

- Tenable OT Security - ICP Migration to Tenable Core OL8
- Tenable OT Security ICP Migration Script to Oracle Linux 8 Tenable Core VM
- How to tell whether Tenable OT Security is running on EL7 or OL8

**Note:** Automatic updates are disabled by default on OT Security Sensor. Updates are delivered from the ICP system.

## Update On Demand

If you deploy Tenable Core in an online environment, you can perform updates on demand. When updating on demand, Tenable Core retrieves and installs the following:

- The latest version of OT Security Sensor.
- The latest version of host operating system included in Tenable Core.
- The latest version of any additional packages required by Tenable Core.
- The latest version of any additional host operating system packages you installed.

To update on demand:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation pane, click **Update Management**.

   The **Update Status** section on the page shows the number of available updates.

3. (Optional) Click the ⟳ button to refresh the page with available updates in the **Update Status** section

4. Click the **Install Updates** button.

   Tenable Core installs the updates.

5. Tenable Core confirms your system is up to date and prompts you to reboot, if required by any of the installed updates.

6. If prompted, restart your system.

   (Optional) Select the **Automatically reboot after updates when needed** checkbox to enable Tenable Core to reboot automatically after updates are applied to your system. For more information, see Enable Automatic Reboots After Updates.

   **Caution:** Automatic reboots may cause data loss.

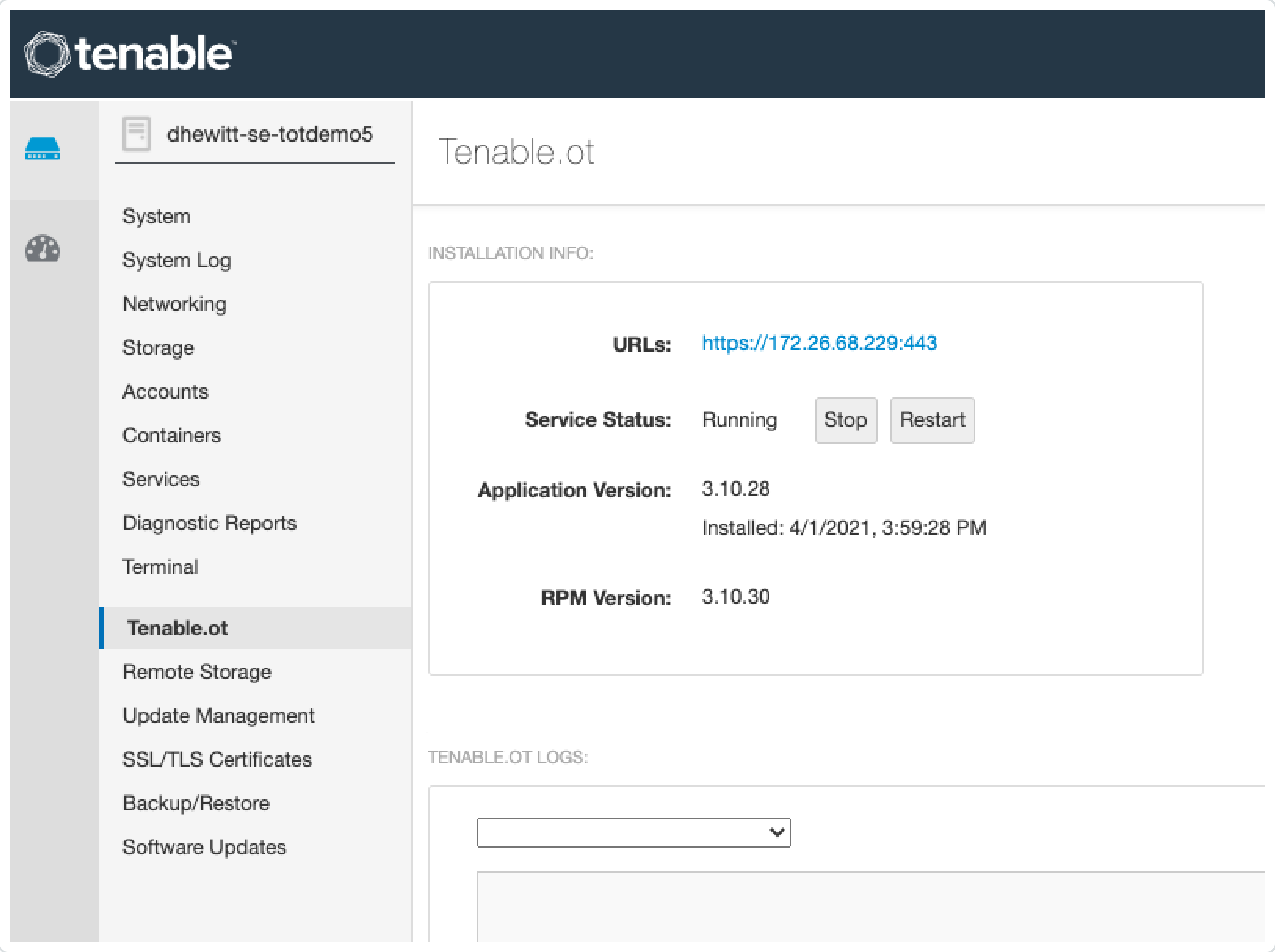
   **Caution:** Updates applied at automatic reboot-time may trigger a second reboot.

To activate the upgrade for OT Security or OT Security Sensor:

**Note:** All OT Security and OT Security Sensor upgrades are staged when you install all updates. The upgrade is not yet installed. Click on one of the OT Security tabs, then click the blue arrow next to **RPM Version**. (As outlined in the following procedure.)

1. In the left navigation pane, click the **OT Security** tab or the **Sensor** tab for OT Security Sensor.

   The installation information page appears.



Tenable.ot

INSTALLATION INFO:

URLs: https://172.26.68.229:443

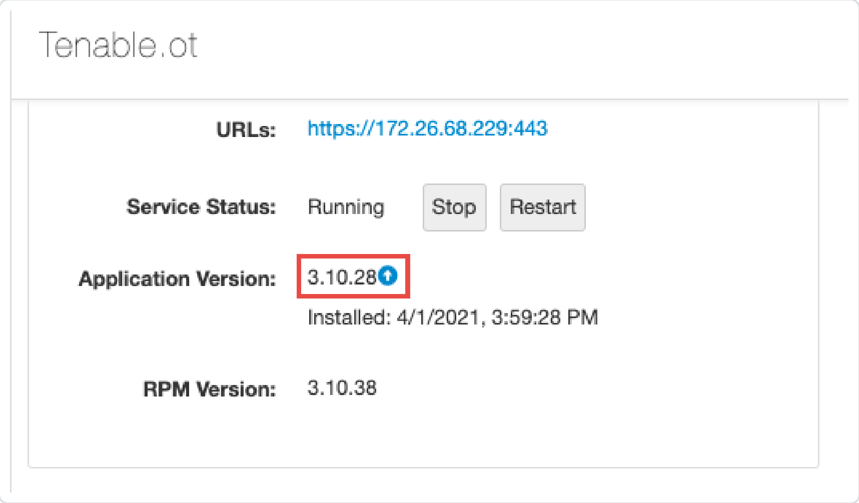
Service Status: Running

Application Version: 3.10.28
Installed: 4/1/2021, 3:59:28 PM

RPM Version: 3.10.30

TENABLE.OT LOGS:

2. Refresh the page to show the latest update available.



Tenable.ot

URLs: https://172.26.68.229:443

Service Status: Running

Application Version: 3.10.28
Installed: 4/1/2021, 3:59:28 PM

RPM Version: 3.10.38

3. Click the blue arrow next to the application version to install the update.

**Note:** The OT Security user interface may be unavailable during an upgrade.

# Enable Automatic Reboots After Updates

You can configure Tenable Core to reboot automatically after updates are applied. The system will reboot automatically only after updates which require it. Without this enabled, you have to reboot the system manually in order to use the updates which require a reboot.

There are risks associated with automatically rebooting after updates. Scheduled automatic reboots risk disrupting an ongoing system task (scanning, exporting, importing, etc.) and also cause harm to the system in some rare cases. Tenable Core includes several warnings and pop-up modals to confirm enabling this feature. Ensure that automatic updates and scheduled scans are not both scheduled within the same general timeframe.

**Caution:** Automatic reboots can cause data loss.

**Note:** Automatic reboots can trigger a second reboot.

**Note:** Tenable does not recommend automatic reboots on Tenable Security Center systems.

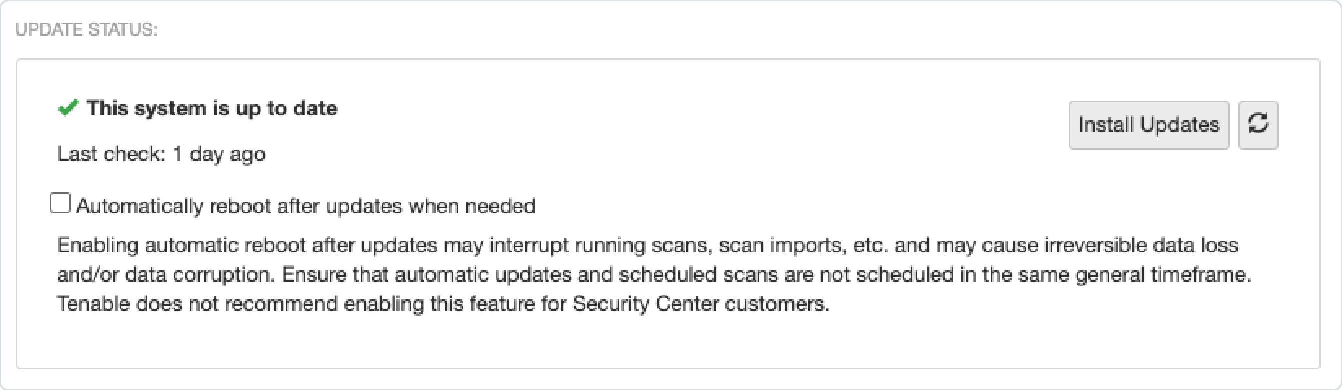
Before you begin, consider:

- If the **Automatically reboot after updates when needed** checkbox is not checked, you have to reboot the system to apply the updates which require it.
- If the **Automatically reboot after updates when needed** checkbox is checked, the system is now configured to reboot automatically on updates which require reboots.

  **Note:** Even if an update is installed with the **Install Updates** button, it triggers a reboot if the Tenable Core system requires it. There are risks by default with this behavior.

## Enable automatic reboots after updates:

1. Log in to the Tenable Core user interface.
2. Navigate to the **Update Management** page.
3. Select the **Automatically reboot after updates when needed** checkbox to enable Tenable Core to reboot automatically after updates are applied to your system.



UPDATE STATUS:

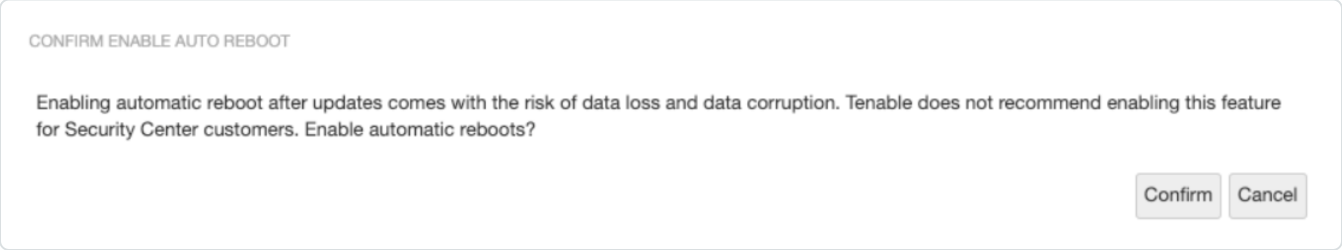
✓ **This system is up to date**

Last check: 1 day ago

□ Automatically reboot after updates when needed

Enabling automatic reboot after updates may interrupt running scans, scan imports, etc. and may cause irreversible data loss and/or data corruption. Ensure that automatic updates and scheduled scans are not scheduled in the same general timeframe. Tenable does not recommend enabling this feature for Security Center customers.

After selecting the checkbox to enable automatic reboots, a confirmation message appears:



CONFIRM ENABLE AUTO REBOOT

Enabling automatic reboot after updates comes with the risk of data loss and data corruption. Tenable does not recommend enabling this feature for Security Center customers. Enable automatic reboots?

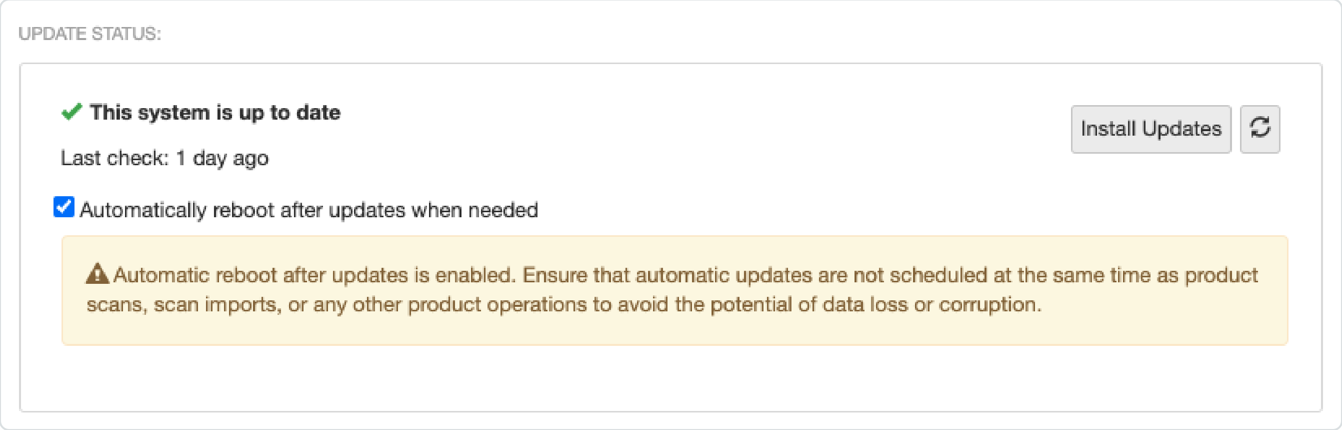
4. Click one of the following buttons:

   - **CONFIRM** - Confirm your choice to enable automatic reboots after updates.

     > **Note:** The **Automatically reboot after updates when needed** checkbox remains selected in Tenable Core until you uncheck it.

   - **CANCEL** - Reverts back to the previous state with the checkbox disabled.

After enabling automatic reboots, a confirmation message appears:



UPDATE STATUS:

✓ **This system is up to date**

Last check: 1 day ago

☑ Automatically reboot after updates when needed

⚠ Automatic reboot after updates is enabled. Ensure that automatic updates are not scheduled at the same time as product scans, scan imports, or any other product operations to avoid the potential of data loss or corruption.

## Update Tenable Core Offline

Tenable recommends applying all offline updates to your Tenable Core machine in chronological order. Do not skip offline updates. There are two methods available to perform an offline update. For information about the contents of individual offline update files, see the Tenable Core Release Notes.

**Tip:** For more information about updating Tenable Core, see the FAQ.

**Note:** Service pack (SP) updates to OT Security may not be available for an online update in Tenable's repositories. Complete an offline update by downloading the latest installation ISO and performing the offline update procedure if you wish to update your version.

**Note:** While the quarterly update ISO can update your OT system, you may want to use the OT offline installer ISO as a source of updates. On the downloads page, you can select from two ISO types for your Tenable Core + Tenable OT Security deployment:

- **Tenable Core Tenable.ot Self-Contained Installation ISO -** provides latest Tenable.OT ICP/Sensor and system updates (for example, Tenable-Core-Tenable.ot-offline-20231019.iso and Tenable-Core-Tenable.ot.Sensor-offline-20231019.iso)
- **Offline Update ISO Image -** provides quarterly cadence for ICP/Sensor and system updates (for example, Tenable-Core-Offline-Update-2023-Q3.iso).

**Note:** Tenable OT has centralized sensor updates provided by the ICP as of Tenable Core + Tenable OT Security version 3.16.55. To ensure functionality, the ICP needs to have offline updates attached and mounted. When the sensor is connected to the ICP and the ICP has updates, running updates from the sensor installs the software served by the ICP. The ICP self-contained ISO, or quarterly offline ISO of the ICP, provides updates for the sensor. For sensor upgrade via the ICP, you can upload any offline ISO to the ICP. All three types; EM, ICP, and Sensor ISOs, contain the relevant sensor upgrade data. The Sensor ISO is the smallest by file size.

**Tip:** When offline updates are attached, Tenable Core also continues to attempt to retrieve updates from the online repositories. This is normally harmless. In certain network environments attempting to reach the online repositories can cause timeouts or undesirable flagged traffic in firewalls. In cases such as these, running the following commands prevents Tenable Core from attempting to use the online repositories:

```
sudo dnf config-manager --disable "tenable-*"
sudo dnf config-manager --enable "tenable-offline"
```

To upload a Tenable Core offline update `.iso` file, use one of the following methods:

**Method 1**

1. Navigate to the Tenable Core Offline Update ISO section of the Tenable Downloads page and download the update you wish to apply.
2. Go to the web interface on port 8000, click the **Updates** tab.
3. In the Offline Updates section, click **Upload New Offline Updates ISO**.
4. Click to check for and install updates.

**Method 2**

1. Go to `/srv/tenablecore/offlineiso` and delete any existing tenable-offline-updates.iso files.
2. Upload the new ISO "Tenable-Core-OL8-Offline-Update-2024-Q4.iso" to `/srv/tenablecore/offlineiso`.
3. Rename the uploaded "Tenable-Core-OL8-Offline-Update-2024-Q4.iso" to `tenable-offline-updates.iso`.
4. Run the following command: `[# sudo dnf update -y]`

To update Tenable Core via external media:

1. Navigate to the Tenable Core Offline Update ISO section of the Tenable Downloads page.
2. Click and download the offline update `.iso` file.
3. Burn the ISO to media (for example, DVD-DL, BD, or thumb drive).
4. Attach the media to a system and have it mount automatically.

   Tenable Core updates with the new `.iso` file.

   > **Note:** By default, the hardening on OL8 operating systems prevents USB media from mounting. In order to use USB drives with a Tenable Core OL8 operating system, the `/etc/modprobe.d/usb-storage.conf` file needs to be removed from that directory.

What to do next:

- Update on Demand

# Application Data Backup and Restore

Backup and restore requires a connection to a remote storage host. When Tenable Core begins a scheduled or on-demand backup, your files are stored temporarily in `/opt/tenablecore/backup/spool` before being sent to the configured remote storage host.

Later, you can restore your backup data by uploading your backup file to Tenable Core.

> **Note**: You can also use local backups in Tenable Core. Remote storage is safer and preferred, but local storage can be enabled. In the user interface you can specify how many backups to keep and download backups that are stored locally. For more information, see Configure Storage for Tenable Core Backups.

For more information, see:

- Configure Storage for Tenable Core Backups
- Perform an On-Demand Backup
- Change the Scheduled Backup Time
- Restore a Backup

If you want to enable or disable a scheduled backup, click **Scheduled backups can be configured Here**.

> **Note**: During a backup or a restore, Tenable Core stops the OT Security Sensor application service. You cannot use Tenable Core during this time. After the backup or restore completes, your services restart and OT Security Sensor resumes normal function.

> **Tip:** A virtual machine snapshot backs up the entire virtual machine (application-installed files, application data, OS files, and configurations.) To take a snapshot of your virtual machine, see Take a Snapshot.

## Remote Storage Host Requirements

The location where you store your backups must:

- Have rsync installed.
- Have an SSH server installed and running.
- Have sufficient storage space to hold your application's backup data.
- Have a user with write permissions to manage the remote storage host location.

> **Note:** Tenable Core does not manage your remote storage system. If you have concerns about space on your remote storage system, remove backup files manually when you no longer need them.

## Configure Storage for Tenable Core Backups

Before you can back up your application data, you must set the storage location. You can establish a remote storage host with an SSH key and configure Tenable Core to use that host, or you can store backups locally.

## Configure remote backup storage

Before you begin:

- Confirm your SSH private key for authenticating to the remote storage host is in OpenSSH key format.
- Prepare your remote storage host environment, as described in the Remote Storage Host Requirements.
- Confirm that you can log in to your remote storage host using SSH key authentication.

> **Note**: There are several ways to create your own SSH private key. These are not Tenable-specific processes. Consult your system administrator.

To configure your remote storage host:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Remote Storage**.

   The **Remote Storage Configuration** page appears.

3. In the **Remote Host** box, type the hostname for the remote storage host where you want to store your backup files.

4. In the **Remote Path:** box, type the location on the remote host where you want to store your backup files.

5. In the **User** box, type the username for a user on the remote host with edit permissions for the remote path location.

6. In the **SSH private key** box, paste the SSH private key for authenticating to the remote storage host.

7. Click **Save Configuration**.

## Configure local backup storage

Storing backups exclusively on the Tenable Core system where the backup is taken is not recommended. Backups should be kept in a separate location in order to avoid data loss in the event that the Tenable Core system becomes unusable.

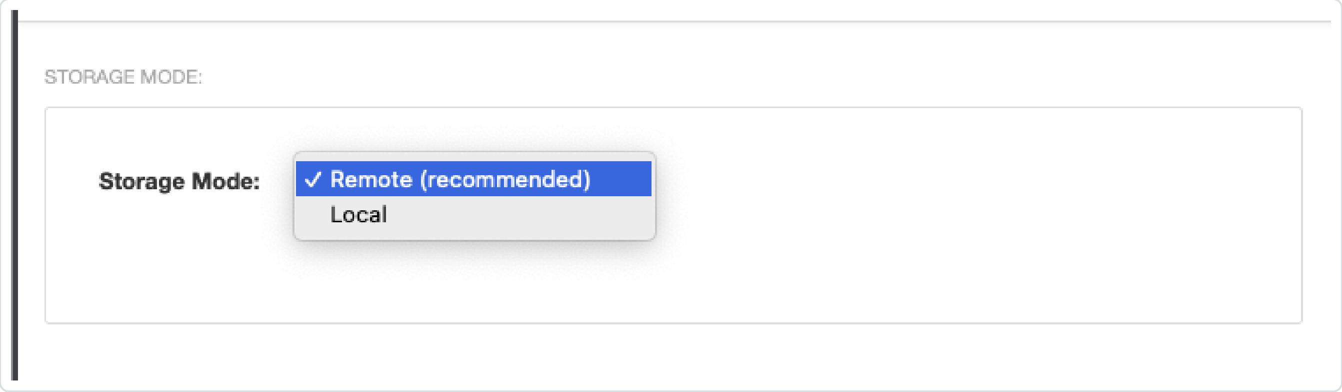
1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Remote Storage**.

   The **Remote Storage Configuration** page appears.

3. In the **Storage Mode** drop-down menu and select **Local**.

4. In the left-navigation bar, click **Backup/Restore**.

   The **Backup/Restore** page appears.

In the user interface you can specify how many backups to keep and download backups that are stored locally.

> **Note**: In local storage mode, backups are stored in a folder under /opt.

Any backups that have been taken appear in the list of **Available Backups**.

> **Note**: A fixed number of backups are kept with the oldest ones being deleted. Tenable recommends you make sure there is enough space for that number of backups plus one on the disk that contains /opt.

What to do next:

- Perform a backup, as described in Perform a Backup on Demand.
- (Optional) Change your automatic backup schedule, as described in Change Your Automatic Backup Schedule.
- (Optional) Restore a backup, as described in Restore a Backup.

## Perform an On-Demand Backup

Perform a backup of your application data anytime between scheduled backups. For more information about scheduled backups, refer to Change the Scheduled Backup Time. For more information on full Tenable Core backups and "configuration-only" backups, refer to the Application Data Backup and Restore section and the FAQ.

> **Note**: During a backup or a restore, Tenable Core stops the OT Security Sensor application service. You cannot use Tenable Core during this time. After the backup or restore completes, your services restart and OT Security Sensor resumes normal function.

Before you begin:

- Configure your remote storage host, as described in Configure Storage for Tenable Core Backups.

To perform an on-demand backup:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Backup/Restore**.

   The **Backup/Restore** page appears.

3. In the **AVAILABLE MODULES** section, select the box next to the application you want to back up.

4. Click **Take Backup Now**.

   The **BACKUP IN PROGRESS** window appears. The window disappears after the system completes the backup.

What to do next:

- (Optional) Restore the backup, as described in Restore a Backup.

## Change the Scheduled Backup Time

By default, Tenable Core backs up your applications daily at 2:30 AM local time. You can edit your schedule preferences in Tenable Core to change the time and frequency of your scheduled backups.

For more information about managing your time preferences, see Edit Your Time Settings.

> **Note**: Tenable Core cannot perform a backup (scheduled or on-demand) until you configure a remote storage host on your computer. For more information, see Configure Storage for Tenable Core Backups.

To change the scheduled backup time:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Backup/Restore**.

   The **Backup/Restore** page appears.

3. In the **AUTOMATIC BACKUPS** table, locate the **Timer Config Line** row.

4. Click **Edit**.

   The **EDIT TIMER CONFIGURATION** window appears.

5. On the **EDIT TIMER CONFIGURATION** window, update the configuration based on your desired backup frequency:

**Note**: If you specify a day of the week and a day of the month for your scheduled backups, Tenable Core performs the backups only when those values overlap. For example, if you specify *Monday* and *15*, Tenable Core performs your backups only on Mondays that fall on the 15th day of the month.

| Frequency | Configuration |
|---|---|
| Daily | • In the **Day of Week** and **Day of Month** boxes, type an asterisk (*).<br>• In the **Hour** box, type the hour when you want Tenable Core to perform a backup as an integer between 0 and 23.<br>• In the **Minute** box, type the minute when you want Tenable Core to perform a backup as an integer between 0 and 59. |
| Weekly | • In the **Day of Week** box, type the day of the week when you want Tenable Core to perform a backup (for example, *Monday* or *Mon*).<br>• In the **Day of Month** box, type an asterisk (*).<br>• In the **Hour** box, type the hour you want Tenable Core to perform a backup as an integer between 0 and 23.<br>• In the **Minute** box, type the minute you want Tenable Core to perform a backup as an integer between 0 and 59. |
| Monthly | • In the **Day of Week** box, type an asterisk (*).<br>• In the **Day of Month** box, type the day of the month when you Tenable Core to perform a backup as an integer (for example, *15*).<br>• In the **Hour** box, type the hour you want Tenable Core to perform a backup as an integer between 0 and 23.<br>• In the **Minute** box, type the minute you want Tenable Core to perform a backup as an integer between 0 and 59. |

6. Click **Save**.

   Your scheduled backup time updates.

What to do next:

- (Optional) Perform an on-demand backup, as described in Perform a Backup On Demand.
- (Optional) Restore the backup, as described in Restore a Backup.

## Restore a Backup

You can restore a backup to return an application to a prior state by uploading a backup to restore, or by restoring from your local storage.

> **Note**: During a backup or a restore, Tenable Core stops the OT Security Sensor application service. You cannot use Tenable Core during this time. After the backup or restore completes, your services restart and OT Security Sensor resumes normal function.

> **Note:** You can only restore backups that have been taken using the Tenable Core backup utility. Older backups from Tenable OT Security before version 3.18 are not compatible. If you are trying to restore from a backup captured in an older version of Tenable OT Security, before version 3.18, contact support for the necessary instructions and commands.

Before you begin:

- Check your firewall settings and confirm that your computer can access port 8090 on Tenable Core, as described in Access Requirements.

  > **Note:** If you do not confirm this ahead of the backup/restore process Tenable Core provides a link to click which opens a connection-check URL in a new tab so you can accept the certificate for port 8090, and have the restoration process try again.

- For help with issues encountered during the process, refer to the FAQ.

### To upload and restore an application backup:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Backup/Restore**.

   The **Backup/Restore** page appears.

3. In the **UPLOAD AND RESTORE** section, click **Choose a file**.

   Your file manager appears.

4. Select the desired backup file.
5. Click **Open**.

   A details window for the backup appears.

6. If prompted, confirm that you want to upgrade or downgrade your current Tenable Core application version to match the application version from your backup file.

   a. Click **Install Correct Version**.

      A confirmation window appears.

   b. Click **Replace**.

      Tenable Core installs the correct version of your application.

      The **Restore** window appears.

7. Click **Restore**.

   The system restores your backup to Tenable Core.

   > **Note**: Do not log out of Tenable Core or close your browser until after the **Uploading the archive** task is complete. If you end your session early, the restore fails.

   When the restore finishes, a success message appears.

   > **Tip**: If the restore attempt fails, an error message appears with details and remediation instructions. Resolve the errors and click **Retry**.

**To restore a locally stored backup:**

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Backup/Restore**.

   The **Backup/Restore** page appears.

3. In the **Upload and Restore** section, click **Restore from local backup storage**.

   The **Select Local Backup** pop-up window appears.

4. Select the desired backup file.
5. Click **Restore**.

   A details window for the backup appears.
6. Click **Restore**.

   The system restores your backup to Tenable Core.

   > **Note**: You can use this feature to restore Tenable Core backups uploaded to the system by tools such as scp or rsync. Store the backups in `/opt/tenablecore/remote-storage/localstorage/` before attempting to restore.

## Manage System Networking

You can use the **Networking** page to view real-time system network traffic information, interface connection options, and logs.

### To manage Tenable Core system networking:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.
2. In the left navigation bar, click **Networking**.

   The **Networking** page appears.

   You can:

| Section | Action |
|---|---|
| Graphs | • View a graph of the **Sending** (outbound) network traffic on your instance.<br>• View a graph of the **Receiving** (inbound) network traffic on your instance. |
| **Firewall** section | • View Firewall rules.<br>• Add Zones. |

| | |
|---|---|
| | - Add Allowed Services. |
| **Interfaces** table | - Aggregate multiple network interfaces into a single-bonded interface, as described in Add a Bonded Interface.<br>- Add a team of interfaces, as described in Add a Team of Interfaces.<br>- Add a bridge to create a single aggregate network from multiple communication networks, as described in Add a Bridge Network.<br>- Add a VLAN, as described in Add a VLAN. |
| **Networking Logs** table | View a log of activity for the system network. |

> **Note**: You can only create a new interface by plugging one in, or by adding one to the virtual machine according to the instructions provided by your virtualization tools. This is not provided by Tenable Core.

## Add a Bonded Interface

You can add a bond to aggregate multiple network interfaces into a single-bonded interface.

> **Note:** For more information and descriptions of the bonds, refer to Using the Cockpit Web Console in the *Oracle documentation*. You can also navigate there by going to the **Network** page in the Tenable Core user interface and clicking **Help** in the upper-left corner.

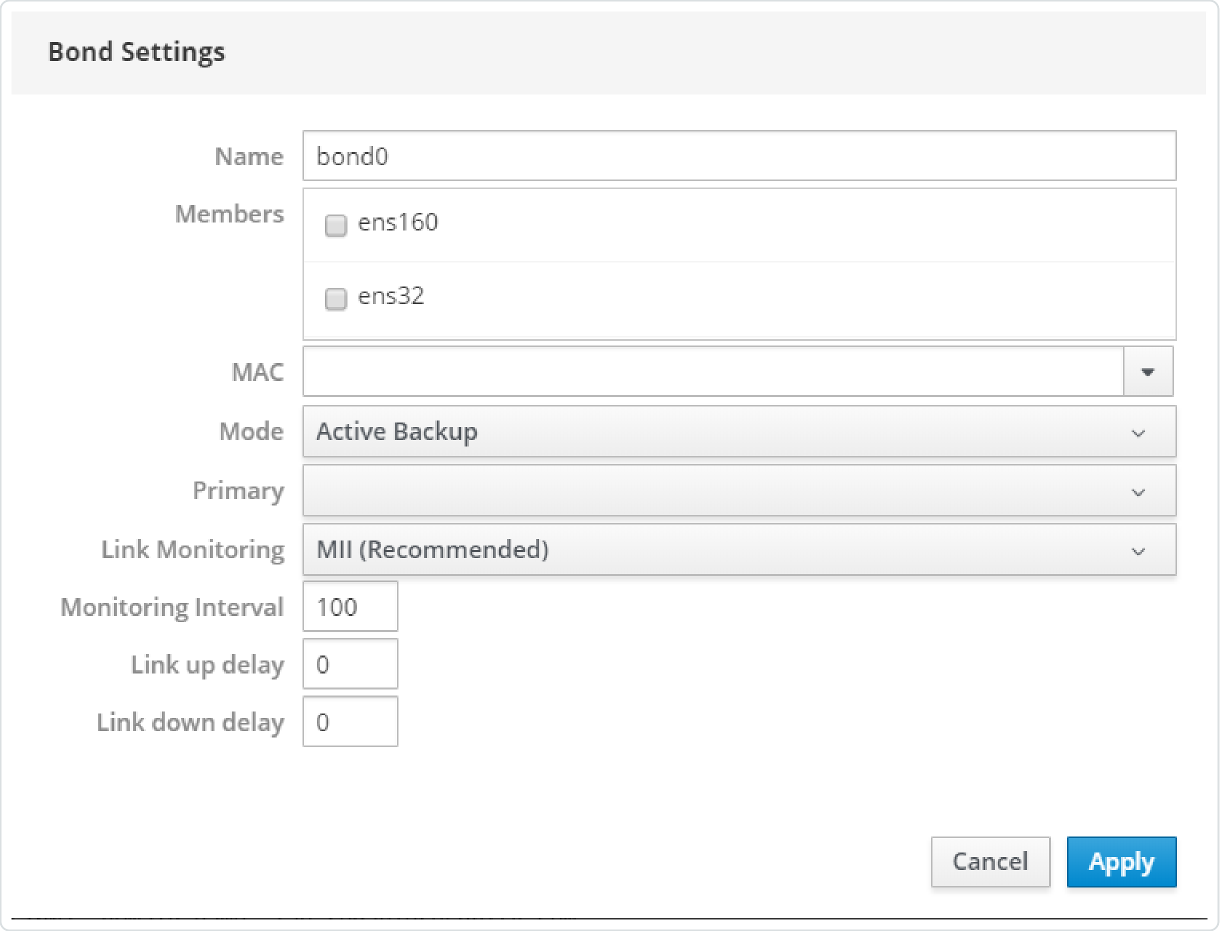
To add a bonded interface to Tenable Core:

1. In the left navigation pane, click the **Networking** option. The **Networking** page displays.
2. In the **Interfaces** heading, click the **Add Bond** button on the **Interfaces** section. A new window appears.
3. Enter a **Name** for the bond.
4. Select the members (interfaces) to bond to in the **Members** section.
5. Select an option for **MAC**.
6. Select the **Mode**.

7. Select a **Primary**.

8. Select the type of **Link Monitoring**. Labeled in the drop-down list is the recommended type.

9. Enter the **Monitoring Intervals** with options to link up or down delay increments.



Bond Settings

Name: bond0

Members:
☐ ens160
☐ ens32

MAC:

Mode: Active Backup

Primary:

Link Monitoring: MII (Recommended)

Monitoring Interval: 100

Link up delay: 0

Link down delay: 0

## Add a Team of Interfaces

To add a team of interfaces to Tenable Core:

1. In the left navigation pane, click the **Networking** option. The **Networking** page displays.

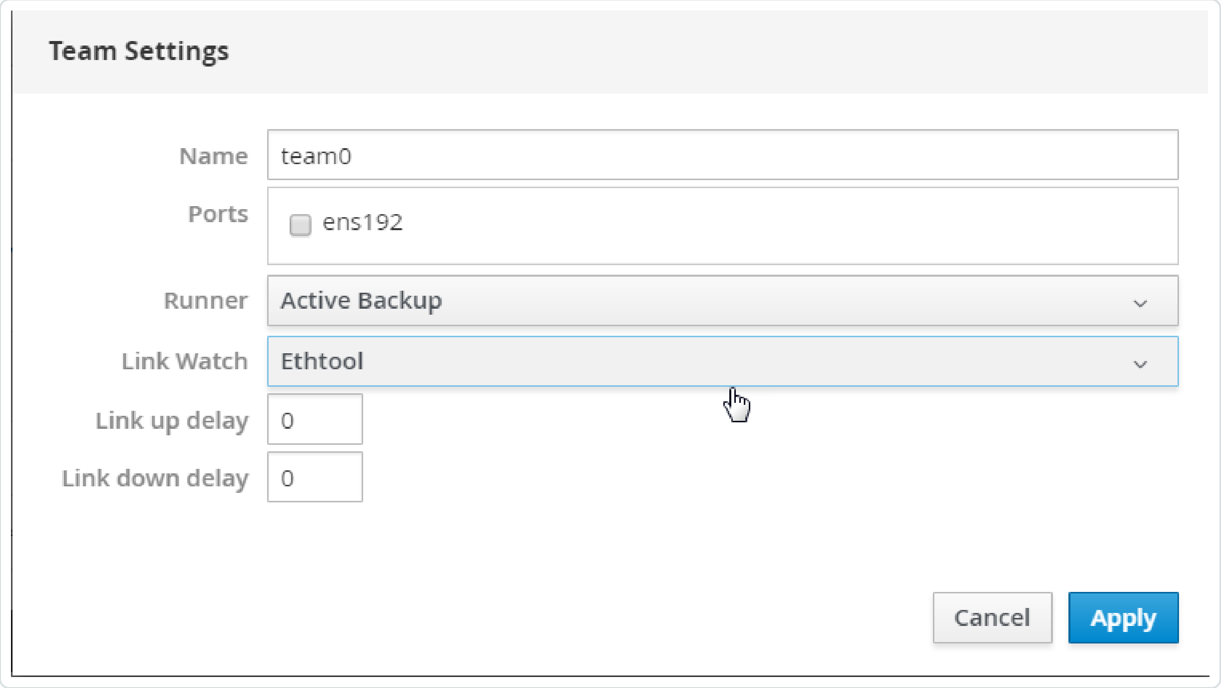
2. In the **Interfaces** heading, click the **Add Team** button on the **Interfaces** section. A new window appears.

3. Enter the **Team Name**.

4. Select the **Ports** needed for the new team.

5. Select the **Runner** and **Link Watch** from the drop-down list.

6. Enter the **Link up** and **Link down delay** increments.



Team Settings

Name: team0

Ports: □ ens192

Runner: Active Backup

Link Watch: Ethtool

Link up delay: 0

Link down delay: 0

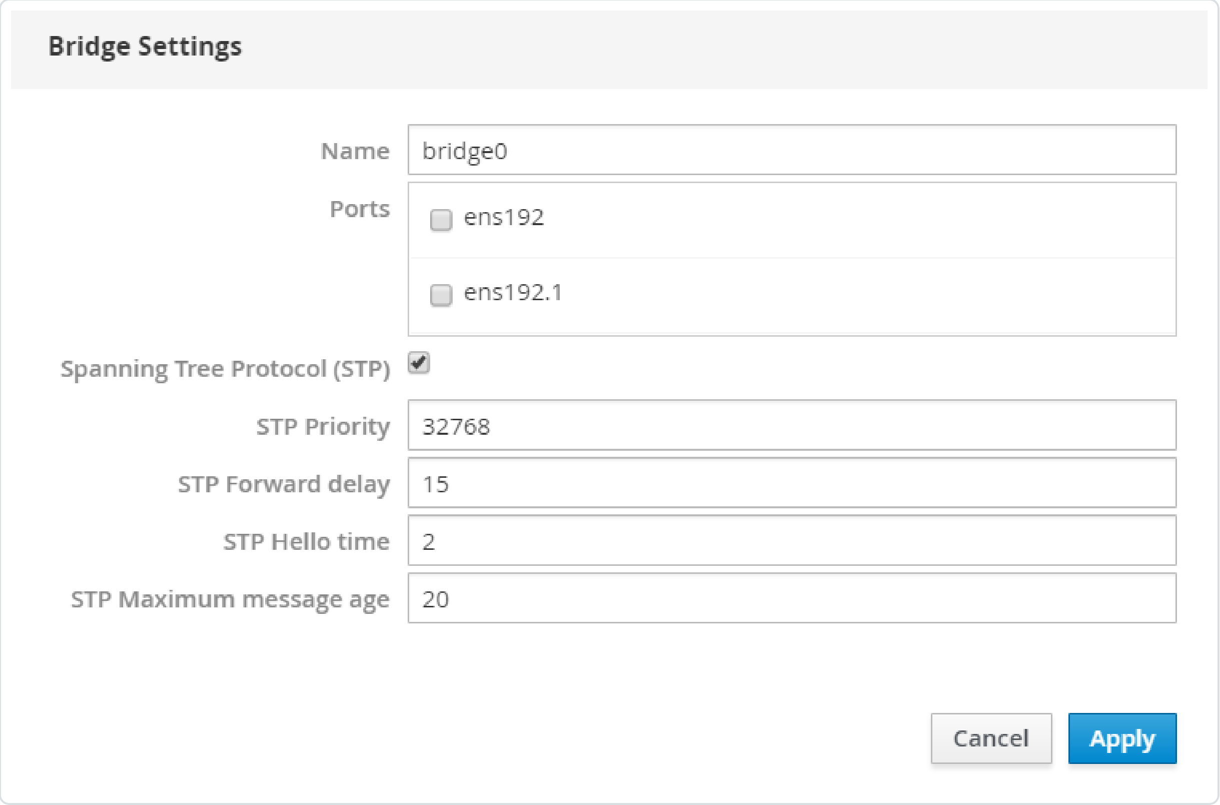
## Add a Bridge Network

You can add a bridge to create a single aggregate network from multiple communication networks.

To add a bridge network to Tenable Core:

1. In the left navigation pane, click the **Networking** option. The **Networking** page displays.
2. In the **Interfaces** heading, click the **Add Bridge** button on the **Interfaces** section. A new window appears.
3. Enter a **Name** for the bridge.
4. Select the **Ports** that you want to connect to the bridge.
5. Click the box next to **Spanning Tree Protocol (STP)** to get more STP options.

6. Click **Apply** to add the new bridge.



**Bridge Settings**

Name: bridge0

Ports:
- □ ens192
- □ ens192.1

Spanning Tree Protocol (STP): ☑

STP Priority: 32768

STP Forward delay: 15

STP Hello time: 2

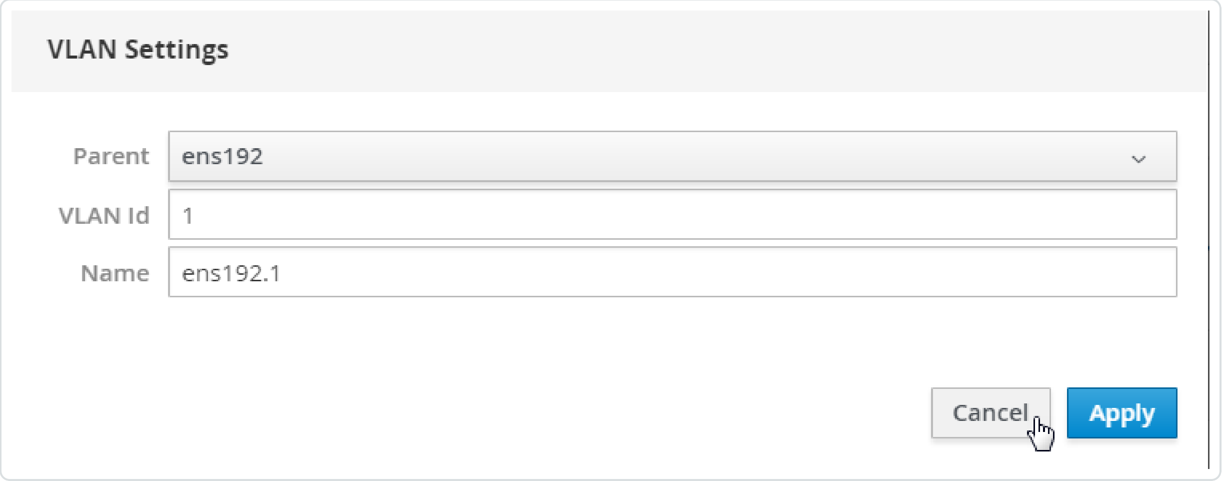
STP Maximum message age: 20

## Add a VLAN

To add a VLAN to Tenable Core:

1. Click the **Add VLAN** button on the Interfaces section. A new window appears.
2. Select the **Parent** from the drop-down list.
3. Enter the **VLAN Id** and name.
4. Click **Apply** to add the **VLAN**.

5. The new **VLAN** displays in the **Interface** list.



VLAN Settings

Parent: ens192

VLAN Id: 1

Name: ens192.1

# Manage Certificates

From the **SSL/TLS Security Certificates** page, you can manage the certificates used by Tenable Core and your application.

Manage the Server Certificate

## Manage the Server Certificate

When you first deploy Tenable Core, Tenable provides a default server certificate for accessing the Tenable Core and application interfaces.

**Tip:** By default, Tenable Core uses separate certificates for Tenable Core and OT Security. For information about the OT Security application certificate, see the *OT Security Documentation*.

**Note:** The default certificate is not signed by a recognized certificate authority (CA). If your browser reports that the Tenable Core or application server certificate is untrusted, Tenable recommends uploading a custom server certificate signed by a trusted certificate authority (CA) for Tenable Core and application use. For more information, see Upload a Custom Server Certificate. Alternatively, you can download the Tenable-provided CA certificate (`cacert.pem`) for your server certificate and upload it to your browser.

If you upload a custom server certificate signed by a custom CA, you must also provide certificates in the chain to validate your custom server certificate.

For more information, see:

- Upload a Custom Server Certificate
- Remove a Custom Server Certificate

## Upload a Custom Server Certificate

If you do not want to use the Tenable-provided server certificate, you can upload a custom server certificate to Tenable Core. For more information, see Manage the Server Certificate.

You cannot upload multiple custom server certificates to Tenable Core. Uploading a new file replaces the existing file.

### Before you begin:

- Confirm your custom server certificate and key files use the `*.der`, `*.pem`, or `*.crt` extension.
- Move the custom server certificate and key files to a location accessible from your browser.

### To upload a custom server certificate for Tenable Core:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

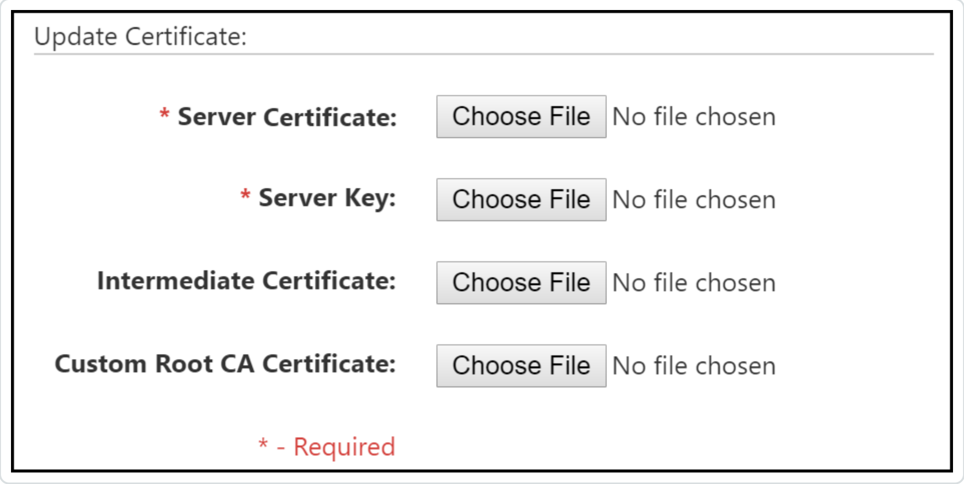
   The Tenable Core web user interface page appears.

2. In the left navigation pane, click **SSL/TLS Certificates**.

   The **SSL/TLS Certificates** page appears.

3. Click the **System Certificate** tab.

4. Locate the **Update Certificate** section in the **SERVER CERTIFICATES** section.



Update Certificate:

| | | |
|---|---|---|
| * **Server Certificate:** | Choose File | No file chosen |
| * **Server Key:** | Choose File | No file chosen |
| **Intermediate Certificate:** | Choose File | No file chosen |
| **Custom Root CA Certificate:** | Choose File | No file chosen |

* - Required

5. Provide your **Server Certificate**.

    a. Click **Choose File**.

       The upload window appears.

    b. Browse to and select the file.

       Tenable Core loads the file.

6. Provide your **Server Key**.

    a. Click **Choose File**.

       The upload window appears.

    b. Browse to and select the file.

       Tenable Core loads the file.

7. (Optional) If your custom server certificate is signed by a custom CA that requires an intermediate certificate to validate the custom server certificate, provide your **Intermediate Certificate**.

    a. Click **Choose File**.

       The upload window appears.

    b. Browse to and select the file.

       Tenable Core loads the file.

8. (Optional) If your custom server certificate is signed by a custom CA, upload your **Custom Root CA Certificate**.

    a. Click **Choose File**.

       The upload window appears.

    b. Browse to and select the file.

       Tenable Core loads the file.

9. Click **Install Server Certificates**.

Tenable Core uploads the files. A success message appears to confirm the upload succeeded.

10. In the left navigation pane, click **Services**.

    The **Services** page appears.

11. Restart the **Cockpit** service, as described in Manage Services.

    The **Cockpit** service restarts and enables the new certificate.

12. Restart any applications the certificate is synced to.

    > **Note:** If you do not restart your Tenable Core applications (for example, Security Center or Tenable Nessus) the new certificate may not be present.

## Remove a Custom Server Certificate

If you no longer want to use your custom server certificate for Tenable Core, you can remove the certificate and revert to using a Tenable-provided server certificate. For more information, see Manage the Server Certificate.

### To remove a custom server certificate and revert to the Tenable-provided default certificate:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation pane, click **SSL/TLS Certificates**.

   The **SSL/TLS Certificates** page appears.

3. Click the **System Certificate** tab.

4. In the **SERVER CERTIFICATES** section, in the **Update Certificate** section, click **Reset Server Certificates**.

   A confirmation window appears.

5. Click **Reset**.

   A success message appears to confirm the reset succeeded.

## Manage User Accounts

You can use the **Accounts** page to manage user accounts for your Tenable Core instance.

### To manage Tenable Core user accounts:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation bar, click **Accounts**.

   The **Accounts** page appears.

   Do any of the following:

   - Create a new user account, as described in Create New User Account.
   - Edit a user account, as described in Edit a User Account.
   - Delete a user account, as described in Delete a User Account.

## Create New User Account

**Required User Role**: Administrator

You can create a new user account from the **Accounts** page.

### To create a new user account:

1. Log in to Tenable Core, as described in Log In to Tenable Core.
2. In the left navigation bar, click **Accounts**.

   The **Accounts** page appears.

3. Click **Create New Account**.

   The **Create New Account** window appears.

4. In the **Full Name** box, type the user's full name.
5. In the **User Name** box, type a username for the user account.
6. In the **Password** box, type a password for the user account.

> **Note**: Your password must meet the following minimum requirements:
>
> - Minimum 14 characters long
> - Cannot be a palindrome (i.e., a word or phrased spelled the same backward and forward)

7. In the **Confirm** box, retype the password.

8. Click **Create**.

   Tenable Core creates the new account and displays it on the **Accounts** page.

What to do next:

- (Optional) If you want to configure the user account, see Edit a User Account.
- (Optional) If you want to delete the user account, see Delete a User Account.

## Edit a User Account

> **Required User Role**: Administrator

You can edit a user account configuration, including the user's full name, password, roles, access, and public SSH keys.

Before you begin:

### To edit a user account:

1. Log in to Tenable Core, as described in Log In to Tenable Core.

2. In the left navigation bar, click **Accounts**.

   The **Accounts** page appears.

3. Click the user account you want to edit.

   The account page for the user account appears.

4. On the user account page, you can:

| Section | Action |
|---|---|

| | |
|---|---|
| **Full Name** | Type a name for the user account. |
| **Roles** | - To grant the user account administrator access, add `wheel` to the list of groups.<br>- To remove administrator access from the user account, remove `wheel` from the list of groups.<br>**Note**: Users should be added to `indegy` on OT Sensor instances, and `indegy` and docker on OT and OT-EM instances. Adding the wizard-created user to these groups enables that user access to the OT directory and the ability to check the status of containers without running `sudo`. |
| **Access** | - To lock or unlock the user account, select **Account Expiration** control under **Options**. You can set an expiration date by selecting **Expire account on** or **Never expire account**.<br>- To configure the account to remain unlocked indefinitely:<br>**Note**: If you do not configure the account to remain unlocked indefinitely, Tenable Core automatically locks the account on the set expiration date.<br>1. Click **Never lock account**.<br>The **Account Expiration** window appears.<br>2. Select the **Never lock account** option.<br>3. Click **Change**.<br>Tenable Core sets the account to remain unlocked indefinitely.<br>- Select an expiration date for the account:<br>1. Click **Never lock account**.<br>The **Account Expiration** window appears.<br>2. Select the **Lock account on** option. |

| | |
|---|---|
| | 3. Click the box next to the **Lock account on** option.<br>A calendar drop-down box appears.<br>4. In the calendar drop-down box, select the date when you want the account to age out.<br>5. Click **Change**.<br>Tenable Core sets the expiration date for the user account. |
| **Password** | - To set a new user account password:<br>1. Click **Set Password**.<br>The **Set Password** window appears.<br>2. In the **New Password** box, type the password you want to use for the account.<br>**Note**: Your password must meet the following minimum requirements:<br>- Minimum 14 characters long<br>- Cannot be a palindrome (i.e., a word or phrased spelled the same backward and forward)<br>3. Click **Set**.<br>Tenable Core updates the user account password.<br>- To force a user to change their user account password:<br>1. Click **Force Change**.<br>The **Force password change** window appears.<br>2. Click **Reset**.<br>Tenable Core disables the password for the user account. The user must change the password on the next login attempt. |

| | |
|---|---|
| | • Configure the user account password to remain active indefinitely:<br>**Note**: If you do not configure the password to remain active indefinitely, Tenable Core automatically ages out the password on the set expiration date.<br>1. Click **Never expire password**.<br>The **Password Expiration** window appears.<br>2. Select the **Never expire password** option.<br>3. Click **Change**.<br>Tenable Core sets the password to remain active indefinitely.<br>• Select an expiration date for the user account password:<br>1. Click **Never expire password**.<br>The **Password Expiration** window appears.<br>2. Select the **Require password change every** [blank] **days** option.<br>3. In the **Require password change every** [blank] **days** section, type the number of days that you want to pass between password expiration dates (for example, type *90* if you want the password to age out every 90 days).<br>4. Click **Change**.<br>Tenable Core sets the expiration date for the user account password. |
| **Authorized Public SSH Keys** | • To add a public SSH key to the user account:<br>1. In the **Authorized Public SSH Keys** table, click the + icon.<br>The **Add public key** window appears. |

| | |
|---|---|
| | 2. In the text box, type or paste your public SSH key.<br>3. Click **Add key**.<br>Tenable Core adds the SSH key to the user account.<br>- To remove a public SSH key:<br>1. In the **Authorized Public SSH Keys** table, next to the key you want to remove, click the icon.<br>Tenable Core removes the SSH key from your account. |

## Delete a User Account

**Required User Role**: Administrator

You can delete a user account from the **Accounts** page.

### To delete a new user account:

1. Log in to Tenable Core in a browser, as described in Log In to Tenable Core.
2. In the left navigation bar, click **Accounts**.

   The **Accounts** page appears.
3. Click the user account you want to delete.

   The account page for the user account appears.
4. In the upper-right corner, click **Delete**.

   The delete window for the user account appears.
5. (Optional), if you want to delete files attached to the user account, select the **Delete Files** check box.

   > **Note**: This file deletion is permanent. If you do not delete them, the files remain attached to the Tenable Core instance, along with their existing access permissions. Users who were previously granted access can still access the files.
6. Click **Delete**.
   Tenable Core delete the user account.

# Change Performance Profile

To change the performance profile for your Tenable Core instance:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

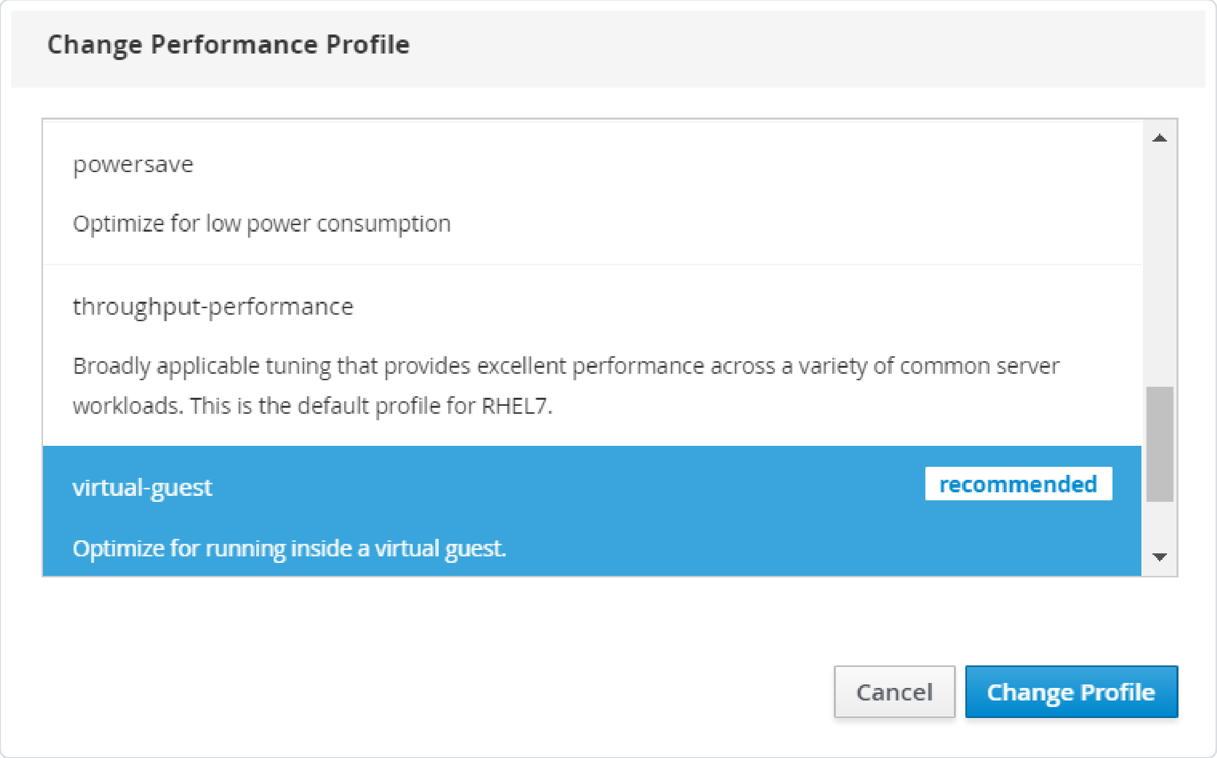
2. In the left navigation pane, click the **Overview** option.

   The **Overview** page displays.

3. Click on the**edit** link next to the **Performance profile** option in the **Configuration** tile. A new window appears displaying **Performance Profile** options.

4. Select the desired **Performance Profile**. The recommended profile is labeled in the list.

5. Click **Change Profile** to confirm the new selection.


Change Performance Profile

powersave

Optimize for low power consumption

throughput-performance

Broadly applicable tuning that provides excellent performance across a variety of common server workloads. This is the default profile for RHEL7.

virtual-guest

Optimize for running inside a virtual guest.

# Restart Tenable Core

To restart your Tenable Core instance:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation pane, click the **System** option.

   The **System** page displays.

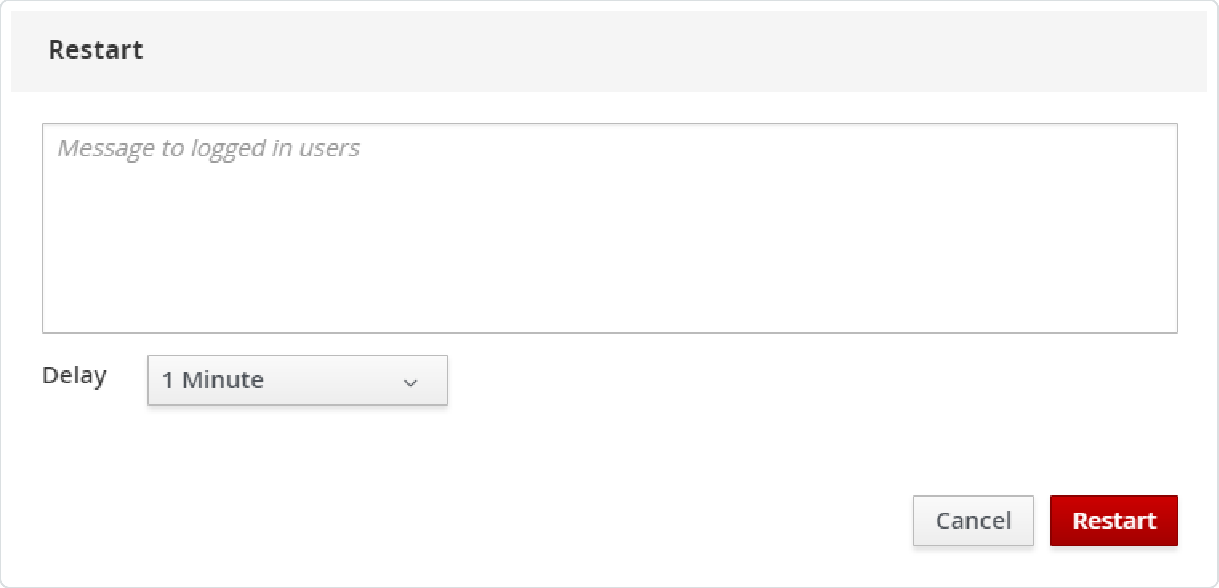
3. Click the **Restart** button or select it from the drop-down box.

   A new window appears.

4. Enter a message for the users in the text box.

5. Select the delay time from the drop-down menu. This is the time that the restart begins. Choose from one of the minute increments or enter a specific time. There is also an option to restart immediately with no delay.

6. Click the **Restart** button to initiate and save the updated information.



Restart

Message to logged in users

Delay: 1 Minute

## Shut Down Tenable Core

To shut down your Tenable Core instance:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation pane, click the **System** option.

   The **System** page displays.

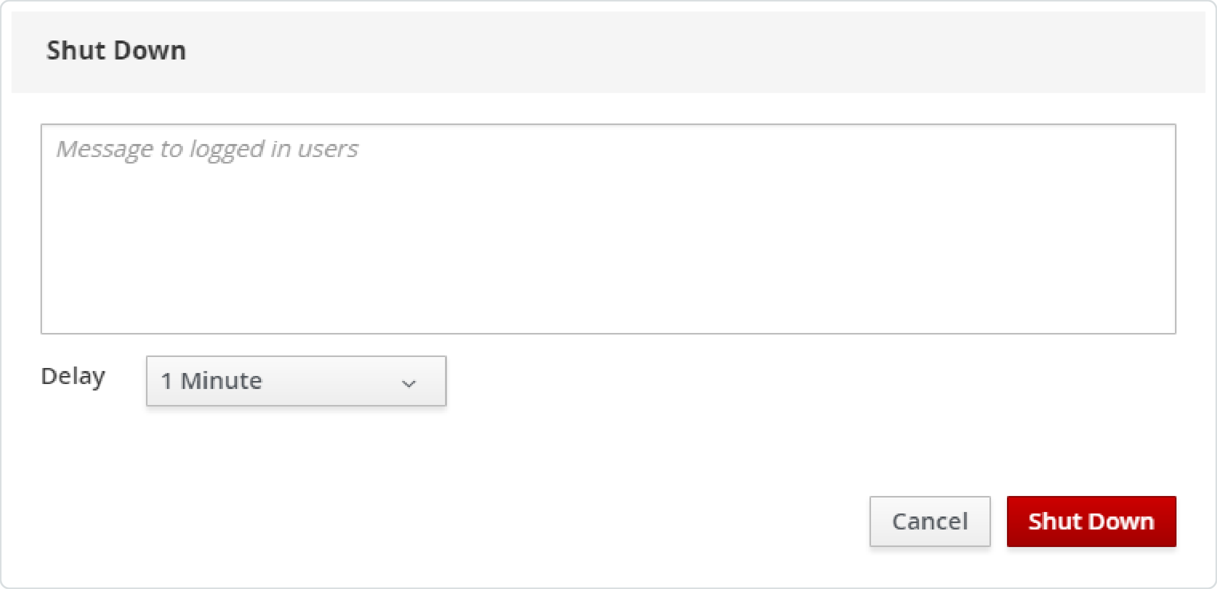
3. Next to the **Power Options** item, click the arrow by **Restart** to display the drop-down menu. Select **Shut Down**.

   A new window appears.

4. Enter a message for the users in the text box.

5. Select the delay time from the drop-down menu. This is the time that the shutdown begins. Choose from one of the minute increments or enter a specific time.  There is also an option to Shut Down immediately with no delay.

6. Click **Shut Down** to initiate and save the updated information.



Delay 1 Minute

## Edit Your Tenable Core Hostname

To edit the hostname for your Tenable Core instance:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation pane, click the **Overview** option.

   The **Overview** page displays.

3. Click the **edit** link next to the **Hostname** option in the **Configuration** tile.

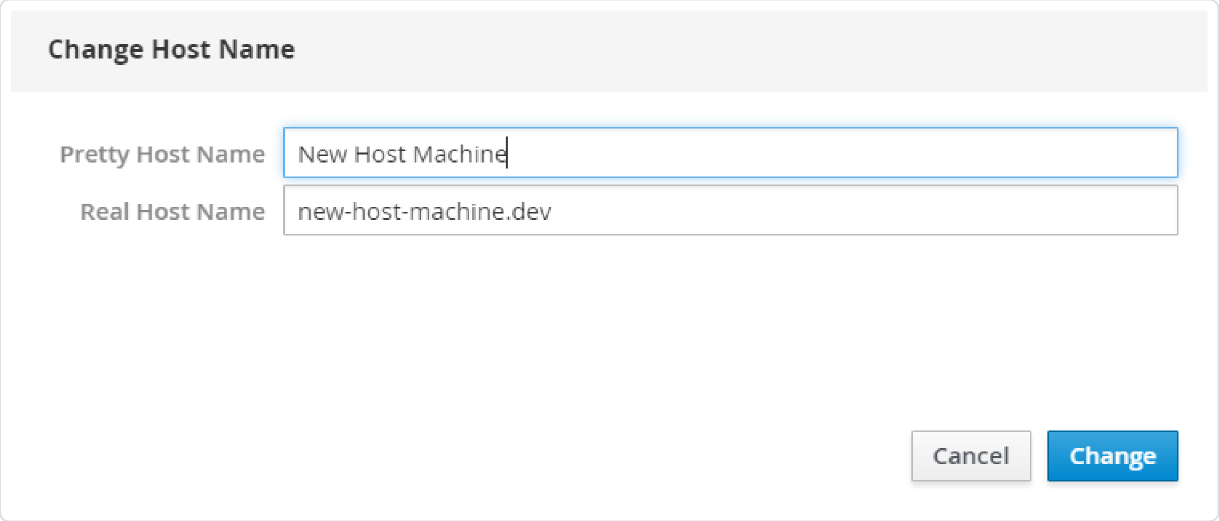
   A new window appears with the options to enter or edit the **Pretty Host Name** and **Real Host Name**.

4. Enter the **Pretty Host Name** for the machine.

   The **Real Host Name** updates as you enter the **Pretty Host Name**.

5. Click **Change** to update the name.

   The new name displays next to the **Hostname** option.



Change Host Name

Pretty Host Name: New Host Machine

Real Host Name: new-host-machine.dev

## Edit Your Time Settings

To edit the system time and time zone settings for your Tenable Core instance:

1. Log in to Tenable Core via the user interface, as described in Log In to Tenable Core.

   The Tenable Core web user interface page appears.

2. In the left navigation pane, click the **Overview** option.

   The **Overview** page displays.

3. Next to **System time**, click the link.

   The **Change System Time** window appears.

4. In the **Time Zone** drop-down box, select your time zone.

   > **Tip:** Type the first few letters of the desired time zone to filter the list.

5. In the **Set Time** drop-down box, select your preferred method for time synchronization.

   > **Note:** If you select the **NTP server** option, your NTP servers in addition to the defaults. You cannot set priority for NTP servers, the system uses them all.

6. Click **Change**.

   Tenable Core saves the change.

> **Note:** If your environment uses DHCP and your DHCP server supplies NTP servers that you do not want to use, you need to tell the system to ignore them by supplying the `PEERNTP=no` option in `/etc/sysconfig/network`.

# FAQ

## Why are updates not available for Tenable Core as soon as they are released by Oracle?

Tenable Core updates are scheduled in a way to ensure uninterrupted operations and all operating system updates are run through internal testing before being published to Tenable mirrors.

## When are Tenable Core offline update ISOs released?

Tenable Core releases offline updates throughout the year on a quarterly basis, within **three weeks** after the end of a quarter.

## Can I skip offline updates?

Tenable recommends that you apply updates in order. Tenable does not test, or support, skipping updates. If you have an old version of Tenable Core, it is best to back up the data and restore it on a newer version of Tenable Core.

## Does Tenable provide old Tenable Core ISOs?

The downloads page has the current ISO and images from the last four quarters. Tenable does not provide any ISOs older than what is available on the downloads page. If you are looking for an older ISO to downgrade one of the products, you can follow the Tenable Core documentation.

## How can I find out what updates are in an offline Tenable Core ISO?

The release notes for offline ISOs have a section for package updates that are present in the ISO.

## How long does it take for a Tenable software update to be available in Tenable Core?

Tenable Core holds a new version of Tenable Nessus until the general availability (GA) date in Tenable Vulnerability Management. This is usually a week after the stand-alone Tenable Nessus GA. Releases for other products on Tenable Core usually occur within 24 hours of the GA date. To see which versions of the products are currently available on each operating system version of Tenable Core, see the Versions page.

## Do automatic updates include Security Center patches?

Patches are not included in automatic updates. Applicable patches need to be downloaded and installed per the given instructions for each patch.

## How can I disable or reenable automatic updates?

Automatic update configuration is in Tenable Core documentation.

## Can I use a local repository for software updates?

Tenable Core does not support this feature. Tenable encourages you to submit a feature request.

## How long will Tenable Core support RHEL/CentOS 7?

CentOS 7 operating system will be end of support (EOS) as of June 30, 2024. As such, Tenable will also be ceasing support for all CentOS 7-based Core images & packages. All On-Prem products - Nessus, Nessus Manager, Tenable Network Monitor, Sensor Proxy, WAS, or Security Center deployed on CentOS 7 versions of Tenable Core should be migrated to Oracle Linux 8 versions of Tenable Core before Jun 30, 2024.

## Why are my automatic backups failing?

One of the most common reasons for an automatic backup failing is that the Security Center services failed to exit. Core will not force Security Center processes to exit. Automatic backups should be scheduled outside of normal scan times to minimize backup failures.

## How often are OS updates for Tenable Core released?

Typically once every 2-3 calendar weeks (e.g., Updates were made available on March 5, 2024 and March 22, 2024)

## Will tenable support X software we installed on our Core instance?

You can install any software you wish on Tenable Core instances. Tenable does not support the additional software, but fully supports Tenable Core (and the installed product) in that situation. Tenable reserves the right to require that the additional software be removed in the future if it is impacting an issue you are having and requesting support for.

## Can I upgrade the hardware version of my VM?

Yes, this should not affect Tenable Core.

## What versions of VMware do Tenable Core support?

Tenable Core supports all currently supported versions of VMware software. We support VM hardware versions vmx-10, vmx-11, vmx-12, vmx-13, vmx-14, vmx-15, vmx-16, vmx-17, and vmx-18.

## Why are updates installed through yum missing from the update history on the Software Updates page?

The history displayed on the updates page is determined by PackageKit and not yum directly. Updates installed with yum will not populate that page. Installing updates with pkcon, however, will populate that page. Usage should be the following:

```
pkcon install [package]
pkcon update
```

## Why does Tenable Core include obsolete unsupported software (e.g., Python 2.7, Openssl 1.0.2k, etc.)?

Enterprise Linux distributions (like CentOS) freeze the versions of software they ship, then maintain the security of that software using backporting.

## Does Tenable support X software that I installed on my Tenable Core instance?

You can install any software you wish on Tenable Core instances. Tenable does not support the additional software, but fully supports Tenable Core and the installed product in that situation.

Tenable reserves the right to require that you remove the additional software if it is impacting an issue you are having, and requesting support for.

## Do any services need to be enabled to allow access to cockpit (https://ip.address:8000)?

No. Cockpit is enabled by default and services start automatically on boot. Any messages regarding cockpit on system boot can be disregarded.

## How do I reset my administrator password in Tenable Core?

The process to reset your password is in this Tenable Community Knowledge Article.

## What are the differences between the Tenable Core + Tenable Nessus backup and Nessus Configuration-Only backup options?

The full backup includes all of `/opt/nessus` and a few files from `/etc`. It can be restored on a broken system to get a working `nessus`. This is Tenable Core designed and handles the full backup. Configuration-only backups need to be restored on a working system.

## Do both Tenable Core + Tenable Nessus backups and Nessus Configuration-Only backups contain scan data?

Configuration-only backups taken on Tenable Core contain scan data. Configuration-only backups taken from the command line do not. Cross-operating system migrations include scan data.