tenable network security

Nessus 6.1 Installation and Configuration Guide

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(Revision 4)

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Introduction

This document describes the installation and configuration of Tenable Network Security's **Nessus 6.1** vulnerability scanner. Please email any comments and suggestions to support@tenable.com.

Tenable Network Security, Inc. is the author and maintainer of the Nessus vulnerability scanner. In addition to constantly improving the Nessus engine, Tenable writes most of the plugins available to the scanner, as well as compliance checks and a wide variety of audit policies.

Prerequisites, deployment options, and a walk-through of an installation are described in this document. A basic understanding of Unix and vulnerability scanning is assumed.

Standards and Conventions

Throughout the documentation, filenames, daemons, and executables are indicated with a **courier bold** font such as **setup.exe**.

Command line options and keywords are also indicated with the **courier bold** font. Command line examples may or may not include the command line prompt and output text from the results of the command. Command line examples will display the command being run in **courier bold** to indicate what the user typed while the sample output generated by the system will be indicated in courier (not bold). Following is an example running of the Unix **pwd** command:

```
# pwd
/opt/nessus/
#
```

Important notes and considerations are highlighted with this symbol and grey text boxes.

Tips, examples, and best practices are highlighted with this symbol and white on blue text.

Organization

Since the Nessus GUI is standard regardless of operating system, this document is laid out with operating system specific information first, followed by functionality that is common to all operating systems.

New in Nessus 6.1

The following list shows official Nessus product names:

- Nessus®
- Nessus Enterprise
- Nessus Enterprise Cloud
- Nessus Home

Key Feature Updates

The following are some of the features available in Nessus 6.1. For a complete list of changes, please refer to the Release Notes on the Discussions Forum.

- Unified scan view that combines scanning and schedules into a single view.
- Results from scans are aggregated under one scan result

- Hosts and Vulnerabilities can be selected via checkbox and deleted/modified in bulker a history tab.
- New policy scan editor that uses templates and organizes the settings into categories.
- Users can now define if Nessus automatically updates and which components are updated.
- Revamped multi-scanner settings allow for a scanner to serve as both a primary and secondary.
- Improved Settings view for Nessus and Nessus Enterprise
- Enhanced launch control for scans, including new options for specifying targets when launching scans
- With Cisco ISE support, users can quarantine and unquarantine hosts based on vulnerability findings

Operating System Support

Nessus is available and supported for a variety of operating systems and platforms:

- Debian 6 and 7 / Kali Linux (x86-64)
- Fedora 19 and 20 (x86-64)
- FreeBSD 10 (x86-64)
- Mac OS X 10.8 and 10.9 (x86-64)
- Red Hat ES 5 / CentOS 5 / Oracle Linux 5 (x86-64)
- Red Hat ES 6 / CentOS 6 / Oracle Linux 6 (x86-64) [Server, Desktop, Workstation]
- Red Hat ES 7 / CentOS 7 / Oracle Linux 7 (x86-64) [Server, Desktop, Workstation]
- SuSE 10 and 11 (x86-64)
- Ubuntu 10.04 (9.10 package), 11.10, 12.04, 12.10, 13.04, 13.10, and 14.04 (x86-64)
- Windows Server 2008, Server 2008 R2*, Server 2012, Server 2012 R2, 7, and 8 (x86-64)

Note that on Windows Server 2008 R2, the bundled version of Microsoft IE does not interface with a Java installation properly. This causes Nessus not to perform as expected in some situations. Further, Microsoft's policy recommends not using MSIE on server operating systems.

Nessus utilizes several third-party software packages distributed under varying licenses. Running **`nessusd`** (or **`nessusd.exe`** on Windows) with the **`-l`** argument will display a list of those third-party software licenses.

Background

Nessus is a powerful and easy to use network security scanner with an extensive plugin database that is updated on a daily basis. It is currently rated among the top products of its type throughout the security industry and is endorsed by professional information security organizations such as the SANS Institute. Nessus allows you to remotely audit a given network and determine if it has been compromised or misused in some way. Nessus also provides the ability to locally audit a specific machine for vulnerabilities, compliance specifications, content policy violations, and more.

- **Intelligent Scanning –** Unlike many other security scanners, Nessus does not take anything for granted. That is, it will not assume that a given service is running on a fixed port. This means if you run your web server on port 1234, Nessus will detect it and test its security appropriately. It will attempt to validate a vulnerability through exploitation when possible. In cases where a Nessus scan is not reliable or may negatively impact the target, Nessus may rely on a server banner to determine the presence of the vulnerability. In such cases, it will be clear in the report output if this method was used.

- **Modular Architecture –** The client/server architecture provides the flexibility to deploy the scanner (server) and connect to the GUI (client) from any machine with a web browser, reducing management costs (one server can be accessed by multiple clients).

- **CVE Compatible –** Most plugins link to CVE for administrators to retrieve further information on published vulnerabilities. They also frequently include references to Bugtraq (BID), OSVDB, and vendor security alerts.
- **Plugin Architecture –** Each security test is written as an external plugin and grouped into one of the plugin families. This way, you can easily add your own tests, select specific plugins, or choose an entire family without having to read the code of the Nessus server engine, `nessusd`. The complete list of the Nessus plugins is available at http://www.nessus.org/plugins/index.php?view=all.
- **NASL –** The Nessus scanner includes NASL (Nessus Attack Scripting Language), a language designed specifically to write security tests easily and quickly.
- **Up-to-date Security Vulnerability Database –** Tenable focuses on the development of security checks for newly disclosed vulnerabilities. Our security check database is updated on a daily basis and all the newest security checks are available at http://www.tenable.com/plugins/index.php?view=newest.
- **Tests Multiple Hosts Simultaneously –** Depending on the configuration of the Nessus scanner system, you can test a large number of hosts concurrently.
- **Smart Service Recognition –** Nessus does not expect the target hosts to respect IANA assigned port numbers. This means that it will recognize a FTP server running on a non-standard port (e.g., 31337) or a web server running on port 8080 instead of 80.
- **Multiple Services –** If two or more web servers are run on a host (e.g., one on TCP port 80 and another on TCP port 8080), Nessus will identify and test all of them.
- **Plugin Cooperation –** The security tests performed by Nessus plugins cooperate so that unnecessary checks are not performed. If your FTP server does not offer anonymous logins, then anonymous login related security checks will not be performed.
- **Complete Reports –** Nessus will not only tell you what security vulnerabilities exist on your network and the risk level of each (Info, Low, Medium, High, and Critical), but it will also tell you how to mitigate them by offering solutions.
- **Full SSL/TLS Support –** Nessus has the ability to test services offered over SSL such as HTTPS, SMTPS, IMAPS, and more.
- **Smart Plugins (optional) –** Nessus has an “optimization” option that will determine which plugins should or should not be launched against the remote host. For example, Nessus will not test sendmail vulnerabilities against Postfix.
- **Non-Destructive (optional) –** Certain checks can be detrimental to specific network services. If you do not want to risk causing a service failure on your network, enable the “safe checks” option of Nessus, which will make Nessus rely on banners rather than exploiting real flaws to determine if a vulnerability is present.
- **Open Forum –** Found a bug? Questions about Nessus? Start a discussion at https://discussions.nessus.org/.

Prerequisites

Tenable recommends the following hardware depending on how Nessus is used. Note that these resources are recommended specifically for running Nessus. Additional software or workload on the machine warrants additional resources.

Scenario	CPU/Memory	Disk Space
Nessus scanning smaller networks	CPU: 1 Dual-core 2GHz Intel CPU (dual-core Intel® for Mac OS X)	30 GB

	Memory: 2 GB RAM (4 GB RAM recommended)	
Nessus scanning large networks including audit trails and PDF report generation	CPU: 1 Dual-core 2GHz Intel CPU (2 dual-core recommended) Memory: 3 - 4 GB RAM (8 GB RAM recommended)	30 GB

Nessus can be run under a VMware instance, but if the virtual machine is using Network Address Translation (NAT) to reach the network, many of Nessus' vulnerability checks, host enumeration, and operating system identification will be negatively affected.

As of the Nessus 6.0 release, only 64-bit architectures are supported.

Nessus Unix

Before installing Nessus on Unix or Linux, there are several libraries that are required. Many operating systems install these by default and typically do not require separate installation:

- zlib
- GNU C Library (i.e., libc)
- Oracle Java or OpenJDK (for PDF reporting only)

Java must be installed on the host before Nessus is installed. If Java is installed afterwards, then Nessus will need to be reinstalled. Further, the same architecture version must be installed, meaning Nessus 6 will only recognize a 64-bit installation of Java. Many web browsers are 32-bit, meaning visiting the Java download page will automatically provide the 32-bit version of Java. You may need to manually download the 64-bit version.

Nessus does not support installing to a directory or location via a symlink. If required disk space exists outside of the `/opt` file system, mount the desired target directory using "`mount --bind <olddir> <newdir>`". Make sure that the file system is automatically mounted on reboot by editing the `/etc/fstab` file accordingly.

Nessus Windows

For increased performance and scan reliability, it is highly recommended that Nessus Windows be installed on a server product from the Microsoft Windows family such as Windows Server 2008 R2. For more information on this issue, please see the "Nessus Windows Troubleshooting" section.

Deployment Options

When deploying Nessus, knowledge of routing, filters, and firewall policies is often helpful. It is recommended that Nessus be deployed so that it has good IP connectivity to the networks it is scanning. Deploying behind a NAT device is not desirable unless it is scanning the internal network. Any time a vulnerability scan flows through a NAT device or application proxy of some sort, the check can be distorted and a false positive or negative can result. In addition, if the system running Nessus has personal or desktop firewalls in place, these tools can drastically limit the effectiveness of a remote vulnerability scan.

Host-based firewalls can interfere with network vulnerability scanning. Depending on your firewall's configuration, it may prevent, distort, or hide the probes of a Nessus scan.

Certain network devices that perform stateful inspection, such as firewalls, load balancers, and Intrusion Detection/Prevention Systems, may react negatively when a scan is conducted through them. Nessus has a number of tuning options that can help reduce the impact of scanning through such devices, but the best method to avoid the problems inherent in scanning through such network devices is to perform a credentialed scan.

Host-Based Firewalls

If your Nessus server is configured on a host with a "personal" firewall such as ZoneAlarm, Windows firewall, or any other firewall software, it is required that connections be allowed from the Nessus client's IP address.

By default, TCP port 8834 is used for the Nessus Web Server (user interface). To open up TCP port 8834, choose the "**Exceptions**" tab and then add port "8834" to the list.

For other personal firewall software, consult the vendor's documentation for configuration instructions.

Vulnerability Plugins

Numerous new vulnerabilities are made public by vendors, researchers, and other sources every day. Tenable strives to have checks for as many recently published vulnerabilities tested and available as soon as possible, usually within 24 hours of disclosure. The check for a specific vulnerability is known by the Nessus scanner as a "plugin". A complete list of all the Nessus plugins is available at http://www.tenable.com/plugins/index.php?view=all.

Plugins are downloaded directly from Tenable through an automated process within Nessus. Nessus verifies the digital signatures of all plugin downloads to ensure file integrity. For Nessus installations without access to the Internet, there is an offline update process that can be used to ensure the scanner stays up to date.

You are required to register for plugins and update them before Nessus will start and the Nessus scan interface becomes available. The plugin update occurs in the background after initial scanner registration and can take several minutes.

Nessus Product Types

Tenable provides commercial support, via the Tenable Support Portal or email, to Nessus customers who are using version 5 or later. Nessus also includes a set of host-based compliance checks for Unix and Windows that are very useful when performing compliance audits such as for SOX, FISMA, or PCI DSS.

You may purchase Nessus through Tenable's Online Store at https://store.tenable.com/ or via a purchase order through Authorized Nessus Partners. You will then receive an Activation Code from Tenable. This code will be used when configuring your copy of Nessus for updates.

If you are using Nessus in conjunction with Tenable's SecurityCenter, it will automatically update your Nessus scanners without additional interaction.

If you are a 501(c)(3) charitable organization, you may be eligible to use Nessus at no cost. For more information, please visit the Tenable Charitable Organization Subscription Program web page.

If you are using Nessus at home for non-professional purposes, you may subscribe to Nessus Home. There is no charge to use Nessus Home, however, there is a separate subscription agreement for Nessus Home that users must agree to comply with.

IPv6 Support

Nessus supports scanning of IPv6 based resources. Many operating systems and devices are shipping with IPv6 support enabled by default. To perform scans against IPv6 resources, at least one IPv6 interface must be configured on the host

where Nessus is installed, and Nessus must be on an IPv6 capable network (Nessus cannot scan IPv6 resources over IPv4, but it can enumerate IPv6 interfaces via credentialed scans over IPv4). Both full and compressed IPv6 notation is supported when initiating scans.

Scanning IPv6 Global Unicast IP address ranges is not supported unless the IPs are entered separately (i.e., list format). Nessus does not support ranges expressed as hyphenated ranges or CIDR addresses. Nessus does support Link-local ranges with the "link6" directive as the scan target or local link with "**%eth0**".

Evaluation to Licensed Upgrade

If you install Nessus with an evaluation license, it is strongly recommended that you uninstall it before migrating to a fully licensed copy. Any policies or scan results you created can be exported and re-imported into the new installation.

Unix/Linux

Upgrading

This section explains how to upgrade Nessus from a previous Nessus installation.

Download the latest version of Nessus from the Nessus download page or through the Tenable Support Portal. Confirm the integrity of the installation package by comparing the download MD5 checksum with the one listed in the product release notes.

Unless otherwise noted, all commands must be performed as the system's `root` user. Regular user accounts typically do not have the privileges required to install this software.

The following table provides upgrade instructions for the Nessus server on all previously supported platforms. Configuration settings and users that were created previously will remain intact.

Make sure any running scans have finished before stopping **nessusd**.

Any special upgrade instructions are provided in a note following the example. Nessus can be installed with several package managers including **rpm** and **yum**. Syntax for installation using **rpm** is shown below. These commands can be replaced by your package manager of choice in most cases. For example, administrators that prefer to use **yum** would use the following syntax:

```
# yum -y localinstall [pkg]
```

Platform	Upgrade Instructions
Red Hat ES 5, CentOS 5, and Oracle Linux 5; Red Hat ES 6, CentOS 6, and Oracle Linux 6; Red Hat ES 7, CentOS 7, and Oracle Linux 7 (64 bit)	

Upgrade Commands	`# service nessusd stop`
	
	Use one of the appropriate commands below that corresponds to the version of Red Hat you are running:
	
	`# rpm -Uvh Nessus-6.1.0-es5.x86_64.rpm`
	`# rpm -Uvh Nessus-6.1.0-es6.x86_64.rpm`

	`# rpm -Uvh Nessus-6.1.0-es7.x86_64.rpm`
	
	Once the upgrade is complete, restart the **nessusd** service with the following command:
	
	`# service nessusd start`

Sample Output	`# service nessusd stop`
	`Shutting down Nessus services: [ OK ]`
	`# rpm -Uvh Nessus-6.1.0-es5.x86_64.rpm`
	`Preparing...`
	`########################################### [100%]`
	`Shutting down Nessus services: /etc/init.d/nessusd: …`
	`1:Nessus`
	`########################################### [100%]`
	`Fetching the newest plugins from nessus.org...`
	`Fetching the newest updates from nessus.org...`
	`Done. The Nessus server will start processing these plugins within a minute`
	`nessusd (Nessus) 6.1.0 [build R23016] for Linux`
	`(C) 1998 - 2014 Tenable Network Security, Inc.`
	
	`Processing the Nessus plugins...`
	`[##################################################]`
	
	`All plugins loaded`
	`- You can start nessusd by typing /sbin/service nessusd start`
	`- Then go to https://localhost:8834/ to configure your scanner#`
	`service nessusd start`
	`Starting Nessus services: [ OK ]`
	`#`

Fedora 19 and 20 (64 bit)	

Upgrade Commands	`# service nessusd stop`
	
	Use one of the appropriate commands below that corresponds to the version of Fedora you are running:
	
	`# rpm -Uvh Nessus-6.1.0-fc20.x86_64.rpm`
	
	Once the upgrade is complete, restart the **nessusd** service with the following command:
	
	`# service nessusd start`

Sample Output	`# service nessusd stop`
	`Shutting down Nessus services: [ OK ]`
	`# rpm -Uvh Nessus-6.1.0-fc20.x86_64.rpm`
	
	`[..]`
	
	`# service nessusd start`
	`Starting Nessus services: [ OK ]`
	`#`

SuSE 10 and 11 (64 bit)	
Upgrade Commands	# **service nessusd stop** Use one of the appropriate commands below that corresponds to the version of SuSE you are running: # **rpm -Uvh Nessus-6.1.0-suse10.x86_64.rpm** # **rpm -Uvh Nessus-6.1.0-suse11.x86_64.rpm** Once the upgrade is complete, restart the **nessusd** service with the following command: # **service nessusd start**
Sample Output	# **service nessusd stop** Shutting down Nessus services: [OK] # **rpm -Uvh Nessus-6.1.0-suse11.x86_64.rpm** Preparing... [..] # **service nessusd start** Starting Nessus services: [OK] #
Debian 6 and 7 / Kali (64 bit)	
Upgrade Commands	# **/etc/init.d/nessusd stop** Use one of the appropriate commands below that corresponds to the version of Debian you are running: # **dpkg -i Nessus-6.1.0-debian6_amd64.deb** # **/etc/init.d/nessusd start**
Sample Output	# **/etc/init.d/nessusd stop** # **dpkg -i Nessus-6.1.0-debian6_amd64.deb** (Reading database ... 19831 files and directories currently installed.) Preparing to replace nessus 5.2.7 (using Nessus-6.1.0-debian6_amd64.deb) ... [..] # **/etc/init.d/nessusd start** Starting Nessus : . #
Ubuntu 10.04 (9.10 package), 11.10, 12.04, 12.10, 13.04, 13.10, and 14.04 (x86-64)	
Upgrade Commands	# **/etc/init.d/nessusd stop** Use one of the appropriate commands below that corresponds to the version of

	Ubuntu you are running: **# dpkg -i Nessus-6.1.0-ubuntu910_amd64.deb** **# dpkg -i Nessus-6.1.0-ubuntu1110_amd64.deb** **# /etc/init.d/nessusd start**
Sample Output	**# /etc/init.d/nessusd stop** **# dpkg -i Nessus-6.1.0-ubuntu1110_amd64.deb** (Reading database ... 19831 files and directories currently installed.) Preparing to replace nessus 5.2.7 (using Nessus-6.1.0-ubuntu1110_amd64.deb) ... [..] **# /etc/init.d/nessusd start** Starting Nessus : . #
FreeBSD 10 (64 bit)	
Upgrade Commands	**# service nessusd stop** **# pkg info | grep -i nessus** This command will produce a list of all the packages installed and their descriptions. The following is example output for the previous command showing the Nessus package: Nessus-5.2.7 A powerful security scanner Remove the Nessus package using the following command: **# pkg delete <package name>** Use one of the appropriate commands below that corresponds to the version of FreeBSD you are running: **# pkg add Nessus-6.1.0-fbsd10-amd64.txz** **# service nessusd start**
Sample Output	**# killall nessusd** **# pkg delete Nessus-5.2.7** **# pkg add Nessus-6.1.0-fbsd10.amd64.tbz** nessusd (Nessus) 6.1.0 for FreeBSD (C) 2014 Tenable Network Security, Inc. [..] **# /usr/local/nessus/sbin/nessusd -D** nessusd (Nessus) 6.1.0 for FreeBSD (C) 2014 Tenable Network Security, Inc.

	Processing the Nessus plugins... [##] All plugins loaded #
Notes	To upgrade Nessus on FreeBSD you must first uninstall the existing version and then install the newest release. This process will not remove the configuration files or files that were not part of the original installation.

Installation

Download the latest version of Nessus from the Nessus download page or through the Tenable Support Portal. Confirm the integrity of the installation package by comparing the download MD5 checksum with the one listed in the product release notes.

Unless otherwise noted, all commands must be performed as the system's `root` user. Regular user accounts typically do not have the privileges required to install this software.

The following table provides installation instructions for the Nessus server on all supported platforms. Any special installation instructions are provided in a note following the example.

Platform	Installation Instructions
Red Hat ES 5, CentOS 5, and Oracle Linux 5; Red Hat ES 6, CentOS 6, and Oracle Linux 6; Red Hat ES 7, CentOS 7, and Oracle Linux 7 (64 bit)	
Install Command	Use one of the appropriate commands below that corresponds to the version of Red Hat you are running: **# rpm -ivh Nessus-6.1.0-es5.x86_64.rpm** **# rpm -ivh Nessus-6.1.0-es6.x86_64.rpm** **# rpm -ivh Nessus-6.1.0-es7.x86_64.rpm**
Sample Output	**# rpm -ivh Nessus-6.1.0-es7.x86_64.rpm** Preparing... ## [100%] 1:Nessus ## [100%] nessusd (Nessus) 6.1.0 [build R20541] for Linux (C) 1998 - 2014 Tenable Network Security, Inc. Processing the Nessus plugins... [##] All plugins loaded - You can start nessusd by typing /sbin/service nessusd start - Then go to https://localhost:8834/ to configure your scanner #
Fedora 19 and 20 (64 bit)	
Install Command	Use one of the appropriate commands below that corresponds to the version of Fedora you are running:

	`# rpm -ivh Nessus-6.1.0-fc20.x86_64.rpm`

Sample Output	`Preparing...`
	`[..]`
	
	`#`

SuSE 10 and 11 (64 bit)	

Install Command	Use one of the appropriate commands below that corresponds to the version of SuSE you are running:
	
	`# rpm -ivh Nessus-6.1.0-suse10.x86_64.rpm`
	`# rpm -ivh Nessus-6.1.0-suse11.x86_64.rpm`

Sample Output	`# rpm -ivh Nessus-6.1.0-suse11.x86_64.rpm`
	`Preparing...########################################## [100%]`
	`1:Nessus ########################################## [100%]`
	
	`[..]`
	
	`#`

Debian 6 and 7 / Kali (64 bit)	
Install Command	Use one of the appropriate commands below that corresponds to the version of Debian you are running: `# dpkg -i Nessus-6.1.0-debian6_amd64.deb`

Sample Output	`# dpkg -i Nessus-6.1.0-debian6_amd64.deb`
	`Selecting previously deselected package nessus.`
	`(Reading database ... 36954 files and directories currently installed.)`
	`Unpacking nessus (from Nessus-6.1.0-debian6_amd64.deb) ...`
	`Setting up nessus (6.1.0) ...`
	
	`[..]`
	
	`#`

Ubuntu 10.04 (9.10 package), 11.10, 12.04, 12.10, 13.04, 13.10, and 14.04 ((x86-64)	

Install Command	Use one of the appropriate commands below that corresponds to the version of Ubuntu you are running:
	
	`# dpkg -i Nessus-6.1.0-ubuntu910_amd64.deb`
	`# dpkg -i Nessus-6.1.0-ubuntu1110_amd64.deb`

Sample Output	`# dpkg -i Nessus-6.1.0-ubuntu1110_amd64.deb`
	`Selecting previously deselected package nessus.`
	`(Reading database ... 32444 files and directories currently installed.)`
	`Unpacking nessus (from Nessus-6.1.0-ubuntu1110_amd64.deb) ...`
	`Setting up nessus (6.1.0) ...`

	[..] #
FreeBSD 10 (64 bit)	
Install Command	Use one of the appropriate commands below that corresponds to the version of FreeBSD you are running: # **pkg add Nessus-6.1.0-fbsd10-amd64.txz**
Sample Output	# **pkg add Nessus-6.1.0-fbsd10-amd64.txz** nessusd (Nessus) 6.1.0 for FreeBSD (C) 1998 - 2014 Tenable Network Security, Inc. [..] #

When the installation is completed, start the **nessusd** daemon as instructed in the next section depending on the distribution. Once Nessus is installed, you must visit the scanner URL provided to complete the registration process.

Note: Unix-based installations may provide a URL containing a relative host name that is not in DNS (e.g., https://myserver:8834/). If the host name is not in DNS, you must connect to the Nessus server using an IP address or a valid DNS name.

After that process is complete, it is recommended that you authenticate and customize the configuration options for your environment as described in the "Feed Registration and GUI Configuration" section.

Start the Nessus Daemon

Start the Nessus service as `root` with the following command:

Linux:
```
# /opt/nessus/sbin/nessus-service -D
```

FreeBSD:
```
# service nessusd start
```

Below is an example of the screen output for starting **nessusd** for Red Hat:

```
[root@squirrel ~]# /sbin/service nessusd start
Starting Nessus services:                                  [  OK  ]
[root@squirrel ~]#
```

If you wish to suppress the output of the command, use the "**-q**" option as follows:

Linux:
```
# /opt/nessus/sbin/nessus-service -q -D
```

FreeBSD:
```
# /usr/local/nessus/sbin/nessus-service -q -D
```

Alternatively, Nessus may be started using the following command depending on the operating system platform:

Operating System	Command to Start `nessusd`
Red Hat, CentOS, & Oracle Linux	`# /sbin/service nessusd start`
Fedora	`# /sbin/service nessusd start`
SuSE	`# /etc/rc.d/nessusd start`
Debian/Kali	`# /etc/init.d/nessusd start`
FreeBSD	`# service nessusd start`
Ubuntu	`# /etc/init.d/nessusd start`

Continue with the section "Feed Registration and GUI Configuration" to install the plugin Activation Code.

Stop the Nessus Daemon

It is recommended that you use the more graceful shutdown script provided by your operating system:

Operating System	Command to Stop `nessusd`
Red Hat, CentOS, & Oracle Linux	`# /sbin/service nessusd stop`
Fedora	`# /sbin/service nessusd stop`
SuSE	`# /etc/rc.d/nessusd stop`
Debian/Kali	`# /etc/init.d/nessusd stop`
FreeBSD	`# service nessusd stop`
Ubuntu	`# /etc/init.d/nessusd stop`

If you need to stop the **`nessusd`** service for any reason, the following command will halt Nessus **and abruptly stop any on-going scans**:

```
# killall nessusd
```

Removing Nessus

The following table provides instructions for removing the Nessus server on all supported platforms. Except for the Mac OS X instructions, the instructions provided will not remove the configuration files or files that were not part of the original installation. Files that were part of the original package but have changed since installation will not be removed either. To completely remove the remaining files use the following command:

Linux:

```
# rm -rf /opt/nessus
```

FreeBSD:

```
# rm -rf /usr/local/nessus/bin
```

Platform	Removal Instructions
Red Hat ES 5, CentOS 5, and Oracle Linux 5; Red Hat ES 6, CentOS 6, and Oracle Linux 6; Red Hat ES 7, CentOS 7, and Oracle Linux 7 (64 bit)	

Remove Command	Determine the package name:
	`# rpm -qa | grep Nessus`
	Use the output from the above command to remove the package:
	`# rpm -e <Package Name>`

Sample Output	`# rpm -qa | grep -i nessus`
	`Nessus-6.1.0-es5`
	`# rpm -e Nessus-6.1.0-es5`
	`#`

Fedora 19 and 20 (64 bit)	

Remove Command	Determine the package name:
	`# rpm -qa | grep Nessus`
	Use the output from the above command to remove the package:
	`# rpm -e <Package Name>`

SuSE 10 and 11 (64 bit)	

Remove Command	Determine the package name:
	`# rpm -qa | grep Nessus`
	Use the output from the above command to remove the package:
	`# rpm -e <Package Name>`

Debian 6 and 7 / Kali (64 bit)	

Remove Command	Determine the package name:
	`# dpkg -l | grep -i nessus`
	Use the output from the above command to remove the package:
	`# dpkg -r <package name>`

Sample Output	`# dpkg -l | grep nessus` `ii  nessus  6.1.0  Version 6 of the Nessus Scanner`

	# dpkg -r nessus #
Ubuntu 10.04 (9.10 package), 11.10, 12.04, 12.10, 13.04, 13.10, and 14.04 (x86-64)	
Remove Command	Determine the package name: # dpkg -l | grep -i nessus Use the output from the above command to remove the package: # dpkg -r <package name>
Sample Output	# dpkg -l | grep -i nessus ii nessus 6.1.0 Version 6 of the Nessus Scanner #
FreeBSD 10 (64 bit)	
Remove Command	Stop Nessus: # killall nessusd Determine the package name: # pkg_info | grep -i nessus Remove the Nessus package: # pkg_delete <package name>
Sample Output	# killall nessusd # pkg_info | grep -i nessus Nessus-6.1.0 A powerful security scanner # pkg_delete Nessus-6.1.0 #

Migrating Nessus

It is not uncommon for a system administrator to have to migrate a Nessus implementation from one machine to another. To migrate a Nessus installation from one Linux system to another, follow the steps below. The steps cover copying over the critical files needed as well as correctly installing Nessus on the new system.

The important files that need to be migrated from the old installation to the new installation are:

- `/opt/nessus/var/nessus/global.db`
- `/opt/nessus/var/nessus/master.key`
- `/opt/nessus/var/nessus/policies.db`

The important directories that need to be migrated from the old installation to the new installation are:

- `/opt/nessus/var/nessus/`

- **/opt/nessus/etc/nessus**
- **/opt/nessus/sbin**

The migration steps works for Nessus 5 and higher. You will be able to migrate from Nessus 5.2.7 to Nessus 6, but not be able to downgrade.

The first steps are done on the original system where you have Nessus installed.

1. Open a terminal window and run the **sudo** or **su** command to enable root privileges. You will be prompted for the user password:

   ```
   # sudo -s
   Password:
   ```

2. Stop the Nessus service:

   ```
   # /sbin/service nessusd stop
   ```

3. Change to the root directory:

   ```
   # cd /
   ```

4. Backup the critical files in **/opt/nessus/var/nessus** and all of the **/opt/nessus/etc/nessus** directory. Given these will be copied to another system, Tenable recommends creating a tar ball of the files and directories:

   ```
   # tar -zcvf /tmp/tarOfMyNessusInstallation.tar.gz
   /opt/nessus/nessus/global.db
   /opt/nessus/var/nessus/master.key
   /opt/nessus/var/nessus/policies.db
   /opt/nessus/var/nessus/users
   /opt/nessus/etc/nessus
   ```

   This will create a tarball in the **/tmp** directory with the name **tarOfMyNessusInstallation.tar** format.

5. Copy over the tar ball to the new server:

   ```
   # scp /tmp/tarOfMyNessusInstallation.tar.gz mynewsystem:/tmp
   ```

On the new server, do the following steps:

1. Install the Nessus 6.1 x64 Linux package, according to the installation instructions at the beginning of the Linux section of this document.

2. Open a terminal window and run the **sudo** command. You will be prompted for the user password:

   ```
   # sudo -s
   Password:
   ```

3. Log in to the Tenable Support Portal and reset the Nessus activation code for this installation.

4. Restore and overwrite the critical files from the older server. To do this, untar the tar ball in the correct directory:

   ```
   # mv /tmp/tarOfMyNessusInstallation.tar.gz /
   # tar -xvf tarOfMyNessusInstallation.tar.gz
   ```

5. Register the activation code with this installation. This will also have Nessus fetch the latest plugins.

```
# /opt/nessus/sbin/nessuscli fetch --register <activation code>
```

6. Reindex Nessus plugins. This may take up to 15-20 minutes, depending on your system.

```
# /opt/nessus/sbin/nessus-service -R
```

7. Once Nessus completes the reindexing process, restart the Nessus service:

```
# /sbin/service nessusd start
```

8. Log in to your Nessus scanner using the Nessus UI at https://yoursystem:8834.
9. Once you confirm your new system is working correctly and all the files are migrated, go through the removal process on the original system listed in the Mac OS X section of this document.

Windows

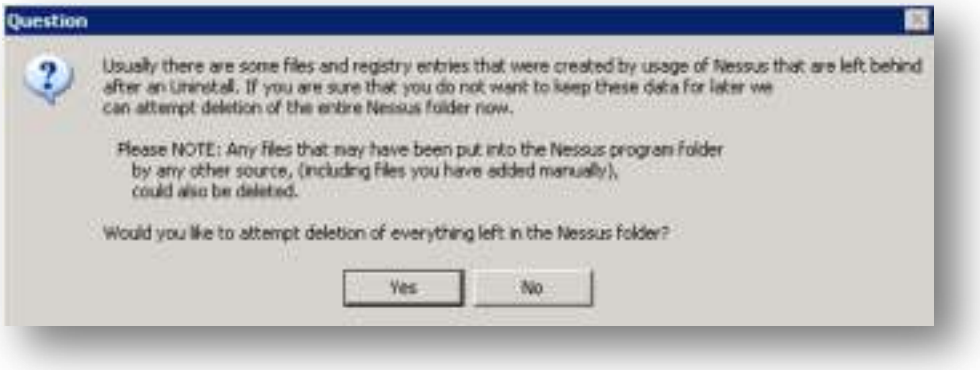
Upgrading

Upgrading from 5.x to 6 is straightforward and does not require any special considerations. Instructions are below.

Upgrading from 5.x

Download the latest version of Nessus from the Nessus download page or through the Tenable Support Portal. Confirm the integrity of the installation package by comparing the download MD5 checksum with the one listed in the product release notes.

When upgrading Nessus from a 5.x version to the Nessus 6 distribution, the upgrade process will ask if the user wants to delete everything in the Nessus directory. Choosing this option (by selecting “Yes”) will mimic an uninstall process. If you choose this option, previously created users, existing scan policies, and scan results will be removed, and the scanner will become unregistered.



Click on “Yes” to allow Nessus to attempt to delete the entire Nessus folder along with any manually added files or “No” to maintain the Nessus folder along with existing scans, reports, etc. After the new version of Nessus is installed, they will still be available for viewing and exporting.

The user may also be prompted to reboot the system depending on the version being installed, and the version currently on the system:

Installation

Downloading Nessus

Download the latest version of Nessus from the Nessus download page or through the Tenable Support Portal. Confirm the integrity of the installation package by comparing the download MD5 checksum with the one listed in the product release notes. Nessus 6 is available for Windows 7, Server 2008, Server 2008 R2, Server 2012, Server 2012 R2, and Windows 8.

Nessus distribution file sizes and names vary slightly from release to release, but are approximately 25 MB in size.

Installing

Nessus is distributed as an executable installation file. Place the file on the system it is being installed on or a shared drive accessible by the system.

Download the file **`Nessus-6.x.x-x64.msi`**, and then double-click on it. This will start the install procedure.

You must install Nessus using an administrative account and not as a non-privileged user. If you receive any errors related to permissions, “Access Denied”, or errors suggesting an action occurred due to lack of privileges, ensure that you are using an account with administrative privileges. If you receive these errors while using command line utilities, run **`cmd.exe`** with “Run as…” privileges set to “administrator”.

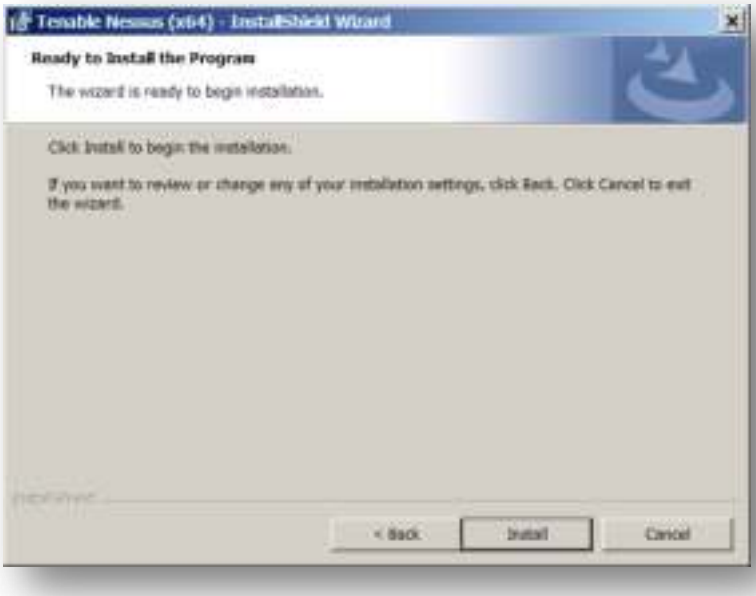
Some antivirus software packages can classify Nessus as a worm or some form of malware. This is due to the large number of TCP connections generated during a scan. If your AV software gives a warning, click on “allow” to let Nessus continue scanning. Most AV packages allow you to add processes to an exception list as well. Add **`Nessus.exe`** and **`Nessus-service.exe`** to this list to avoid such warnings.

It is recommended that you obtain a plugin feed activation code before starting the installation process, as that information will be required before you can authenticate to the Nessus GUI interface. For more information on obtaining an activation code, read the section titled Vulnerability Plugins.

Installation Questions

During the installation process, Nessus will prompt you for some basic information. Before you begin, you must read and agree to the license agreement:

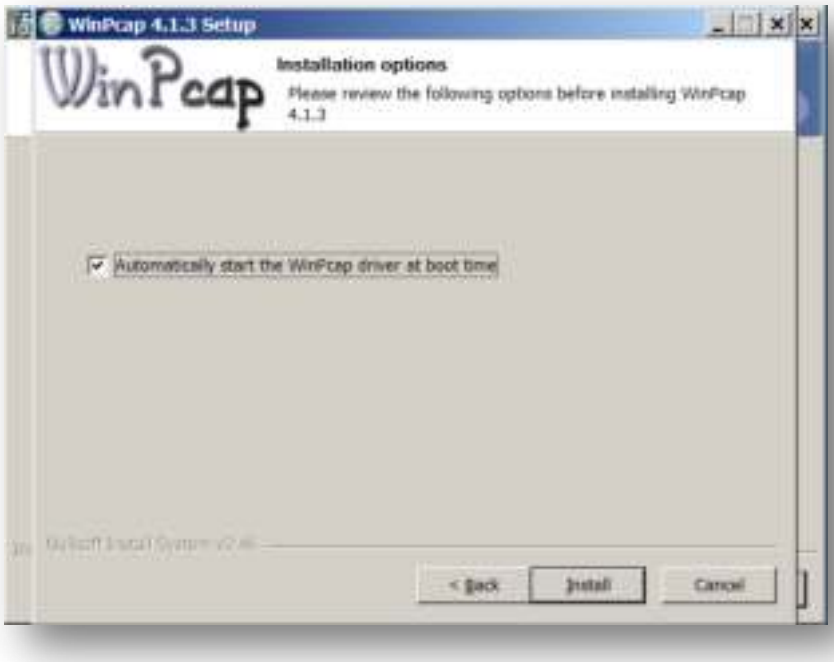
You will be prompted to confirm the installation location and then verify you want to install:



After the initial installation is complete, Nessus will initiate the installation of WinPcap, a third-party driver that is used to support Ethernet communication for Nessus, if it is not already present on your system:

You must also agree to the WinPcap license agreement:

WinPcap will also confirm that you want to launch the driver when the system boots up. It is strongly recommended that you keep this configuration option for seamless Nessus use:



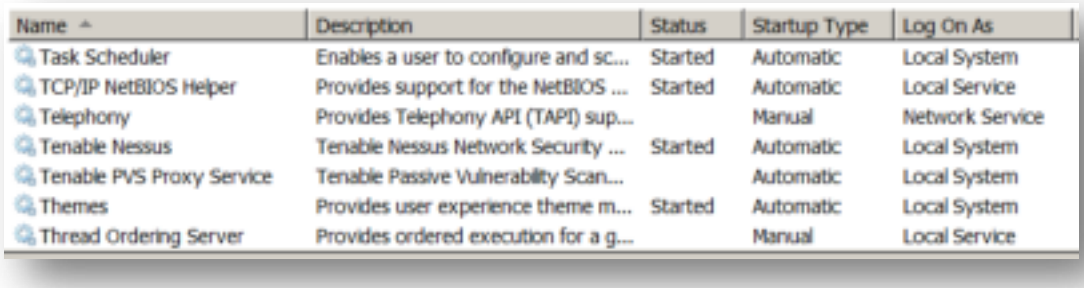
Once installation of both components is complete, click “Finish” to acknowledge each:

At this point, Nessus will continue by loading a page in your default web browser that will handle the initial configuration, which is discussed in the section "Feed Registration and GUI Configuration".

Starting and Stopping the Nessus Daemon

During the installation and daily operation of Nessus, manipulating the Nessus service is generally not required. There are times when an administrator may wish to temporarily stop or restart the service though.

This can be done on a Windows system by opening the "Start" menu and clicking "Run". In the "Run" box, type in "`services.msc`" to open the Windows Service Manager:



Name	Description	Status	Startup Type	Log On As
Task Scheduler	Enables a user to configure and sc...	Started	Automatic	Local System
TCP/IP NetBIOS Helper	Provides support for the NetBIOS ...	Started	Automatic	Local Service
Telephony	Provides Telephony API (TAPI) sup...		Manual	Network Service
Tenable Nessus	Tenable Nessus Network Security ...	Started	Automatic	Local System
Tenable PVS Proxy Service	Tenable Passive Vulnerability Scan...		Automatic	Local System
Themes	Provides user experience theme m...	Started	Automatic	Local System
Thread Ordering Server	Provides ordered execution for a g...		Manual	Local Service

Right clicking on the "**Tenable Nessus**" service displays a dialogue box that allows you to start, stop, pause, resume, or restart the service depending on the current status.

In addition, the Nessus service can be manipulated via the command line. For more information, consult the "Nessus Service Manipulation via Windows CLI" section in this document.

Removing Nessus

To remove Nessus, under the Control Panel open "**Add or Remove Programs**". Select "**Tenable Nessus**" and then click on the "**Change/Remove**" button. This will open the InstallShield Wizard. Follow the directions in this wizard to completely remove Nessus. You will be prompted to decide if you want to remove the entire Nessus folder. Reply "Yes" only if you do not want to retain any scan results or policies that you may have generated.

When uninstalling Nessus, Windows will ask if you want to continue, but display what appears to be an arbitrary `.msi` file that is unsigned. For example:

C:\Windows\Installer\778608.msi
Publisher: Unknown

This is due to Windows keeping an internal copy of the Nessus installer and using it to initiate the uninstall process. It is safe to approve this request.

Migrating Nessus

It is not uncommon for a system administrator to have to migrate a Nessus implementation from one machine to another. To migrate a Nessus installation from one Windows system to another, follow the steps below. The steps cover copying over the critical files needed as well as correctly installing Nessus on the new system.

The important files that need to be migrated from the old installation to the new installation are:

- `C:\ProgramData\Tenable\Nessus\global.db`
- `C:\ProgramData\Tenable\Nessus\master.key`
- `C:\ProgramData\Tenable\Nessus\policies.db`

The important directories that need to be migrated from the old installation to the new installation are:

- `C:\ProgramData\Tenable\Nessus\users`
- `C:\ProgramData\Tenable\Nessus\conf`

The migration steps works for Nessus 5 and higher. You will be able to migrate from Nessus 5.2.7 to Nessus 6, but not be able to downgrade.

The first steps are done on the original system where you have Nessus installed.

1. Run **cmd.exe** with “Run as…” privileges set to “Administrator”.
2. At the Windows command prompt, stop the Nessus service:

   ```
   C:\> net stop "Tenable Nessus"
   ```

3. Backup the critical files in **C:\ProgramData\Tenable\Nessus** and the entire **C:\ProgramData\Tenable\Nessus\conf** directory. Given these will be copied to another system, Tenable recommends compressing the files and directories. For information on how to compress files on Windows, see http://windows.microsoft.com/en-us/windows/compress-uncompress-files-zip-files.
4. Copy over the file archive to the new server via a network share (\\computername\share) or manually depending on your environment.

On the new server, do the following steps:

1. Install the Nessus 6.1 installation package, according to the installation instructions at the beginning of the Windows section of this document.
2. When the Nessus login page opens in your web browser, close the page or tab.
3. Run **cmd.exe** with “Run as…” privileges set to “Administrator”.
4. At the Windows command prompt, stop the Nessus service:

   ```
   C:\> net stop "Tenable Nessus"
   ```

5. Leave this **cmd.exe** window open.
6. Log in to the Tenable Support Portal and reset the Nessus activation code for this installation.
7. Restore and overwrite the critical files from the older server. To do this, uncompress the archive and copy the files to the correct directory. Select yes to **Replace and Move** or **Replace and Copy**.
8. Register the activation code with this installation. This will also have Nessus fetch the latest plugins.

   ```
   C:\> cd C:\Program Files\Tenable\Nessus
   C:\> nessuscli fetch --register <activation code>
   ```

9. Re-index the Nessus plugins. This may take up to 15-20 minutes, depending on your system resources.

   ```
   C:\> cd C:\Program Files\Tenable\Nessus
   C:\> nessusd -R
   ```

10. Once Nessus completes the re-indexing process, restart the Nessus service:

    ```
    C:\> net start "tenable nessus"
    ```

11. Log in to your Nessus scanner using the Nessus UI at https://yoursystem:8834/.
12. Once you confirm your new system is working correctly and all the files are migrated, go through the removal process on the original system listed in the Windows section of this document.

Mac OS X

Upgrading

Upgrading from an older version of Nessus is the same as performing a fresh install. Download the file **`Nessus-6.x.x.dmg.gz`**, and then double-click on it to unzip it. Double click on the **`Nessus-6.x.x.dmg`** file, which will mount the disk image and make it appear under “Devices” in “Finder”. Once the volume “Nessus 6” appears in “Finder”, double click on the file Nessus 6. When the installation is complete, log in to Nessus via your browser at https://localhost:8834/.

Installation

Download the latest version of Nessus from the Nessus download page or through the Tenable Support Portal. Confirm the integrity of the installation package by comparing the download MD5 checksum with the one listed in the product release notes. Nessus is available for Mac OS X 10.8 and 10.9.

The Nessus distribution file size for Mac OS X varies slightly from release to release, but is approximately 45 MB in size.

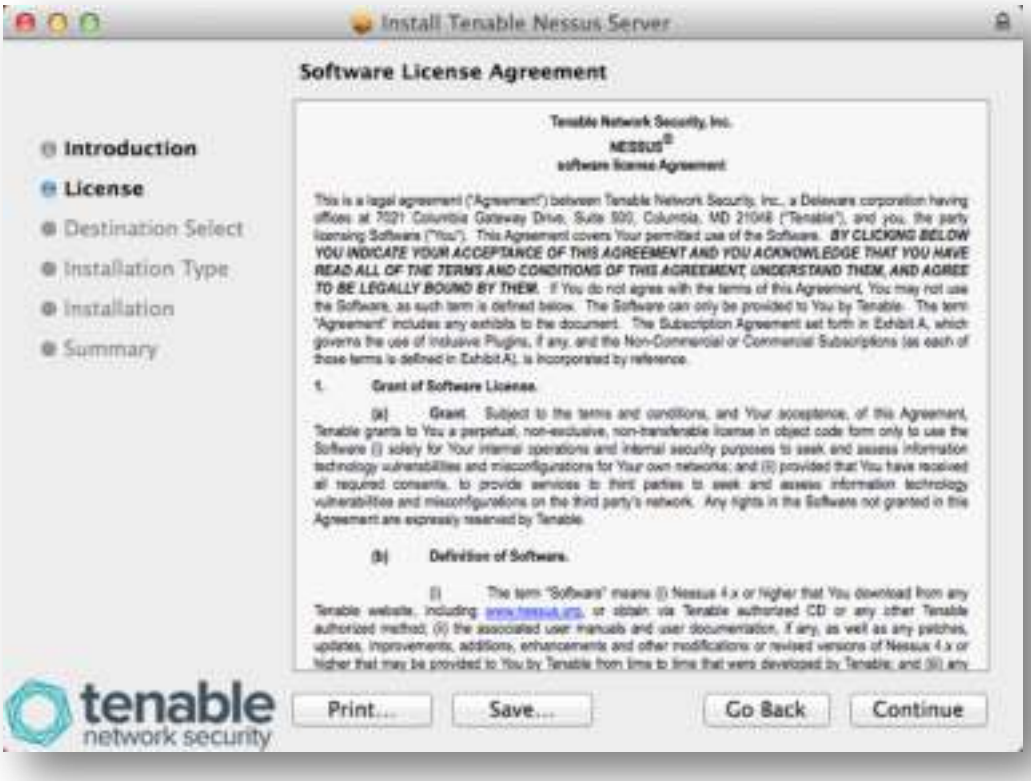
To install Nessus on Mac OS X, you need to download the file **`Nessus-6.x.x.dmg.gz`**, and then double click on it to unzip it. Double click on the **`Nessus-6.x.x.dmg`** file, which will mount the disk image and make it appear under “Devices” in “Finder”. Once the volume “Nessus 6” appears in “Finder”, double click on the file **`Install Nessus`** package as shown below:

Note that you will be prompted for a system user name and password during the installation with administrator rights.

Installation Questions

The installation will be displayed as follows:

Click “Continue”, and the software license will be displayed. Click “Continue” again, and a dialog box will appear requiring that you accept the license terms before continuing:



After accepting the license, another dialog box is displayed permitting you to change the default installation location as shown:

Click on the “Install” button to continue the installation. You will be required to enter the administrator username and password at this point:

The installation has successfully completed when the following screen is displayed:

At this point, Nessus will continue by loading a page in your default web browser that will handle the initial configuration, which is discussed in the section "Feed Registration and GUI Configuration".

Starting and Stopping the Nessus Service

After the installation, the **nessusd** service will start. During each reboot, the service will automatically start. If there is a reason to start or stop the service, it can be done via a Terminal window (command line) or via System Preferences. If performed via the command line, it must be run as "root", or via **sudo**:

Action	Command to Manage nessusd
Start	`# launchctl load -w /Library/LaunchDaemons/com.tenablesecurity.nessusd.plist`
Stop	`# launchctl unload -w /Library/LaunchDaemons/com.tenablesecurity.nessusd.plist`

Alternately, the Nessus service can be managed via System Preferences:

Click on “Nessus” in System Preferences to load the **Nessus.Preferences** pane:

To make changes to the service state, click the lock icon and provide the root password. This will allow you to change the system startup setting, or start and stop the Nessus service:

Removing Nessus

To remove Nessus, delete the following directories (including subdirectories) and files:

```
/Library/Receipts/Nessus*
/Library/LaunchDaemons/com.tenablesecurity.nessusd.plist
/Library/Nessus
/Library/PreferencePanes/Nessus Preferences.prefPane
/Applications/Nessus
```

If you are unfamiliar with Unix command line usage on a Mac OS X system, please contact Tenable Support for assistance.

There are freeware tools such as “DesInstaller.app” (http://www.macupdate.com/info.php/id/7511) and “CleanApp” (http://www.macupdate.com/info.php/id/21453/cleanapp) that can also be used to remove Nessus. Tenable has no affiliation with these tools and they have not been specifically tested for removing Nessus.

Migrating Nessus

It is not uncommon for a system administrator to have to migrate a Nessus implementation from one machine to another. To migrate a Nessus installation from one Mac OS X system to another, follow the steps below. The steps cover copying over the critical files needed as well as correctly installing Nessus on the new system.

The important files that need to be migrated from the old installation to the new installation are:

- **/Library/Nessus/run/var/nessus/global.db**
- **/Library/Nessus/run/var/nessus/master.key**
- **/Library/Nessus/run/var/nessus/policies.db**

The important directories that need to be migrated from the old installation to the new installation are:

- **/Library/Nessus/run/var/nessus/users**
- **/Library/Nessus/run/etc/nessus**

The migration steps works for Nessus 5 and higher. You will be able to migrate from Nessus 5.2.7 to Nessus 6, but not be able to downgrade.

The first steps are done on the original system where you have Nessus installed.

1. Open a terminal window and run the **sudo** or **su** command to enable root privileges. You will be prompted for the user password:
2. Stop the Nessus service:

   ```
   # launchctl unload -w /Library/LaunchDaemons/com.tenablesecurity.nessusd.plist
   ```
3. Change to the root directory:

   ```
   # cd /
   ```
4. Backup the critical files in **/Library/Nessus/run/var/nessus** and the entire **/Library/Nessus/run/etc/nessus** directory. Given these will be copied to another system, Tenable recommends creating a tar ball of the files and directories:

   ```
   # tar -zcvf /tmp/tarOfMyNessusInstallation.tar.gz
   /Library/Nessus/run/var/nessus/global.db
   /Library/Nessus/run/var/nessus/master.key
   /Library/Nessus/run/var/nessus/policies.db
   /Library/Nessus/run/var/nessus/users
   /Library/Nessus/run/etc/nessus
   ```

   This will create a tar file in the **/tmp** directory with the name **tarOfMyNessusInstallation.tar** format.

5. Copy over the tar ball to the new server:

```
# scp /tmp/tarOfMyNessusInstallation.tar.gz mynewsystem:/tmp
```

On the new server, do the following steps:

1. Install the Nessus 6.1 x64 DMG package, according to the installation instructions at the beginning of the Mac OS X section of this document.
2. When the Nessus login page opens in your web browser, close the page or tab.
3. Open a terminal window and run the **sudo** command. You will be prompted for the user password:

```
# sudo -s
Password:
```

4. Stop the Nessus service:

```
# launchctl unload -w /Library/LaunchDaemons/com.tenablesecurity.nessusd.plist
```

5. Log in to the Tenable Support Portal and reset the Nessus activation code for this installation.
6. Restore and overwrite the critical files from the older server. To do this, untar the tar ball in the correct directory:

```
# mv tmp/tarOfMyNessusInstallation.tar.gz /
# tar -zxvf tarOfMyNessusInstallation.tar.gz
```

7. Register the activation code with this installation. This will also have Nessus fetch the latest plugins.

```
# /Library/Nessus/run/sbin/nessuscli fetch -register <activation code>
```

8. Re-index Nessus plugins. This may take up to 15-20 minutes, depending on your system.

```
# /Library/Nessus/run/sbin/nessus-service -R
```

9. Once Nessus completes the re-indexing process, restart the Nessus service:

```
# launchctl load -w /Library/LaunchDaemons/com.tenablesecurity.nessusd.plist
```

10. Log in to your Nessus scanner using the Nessus UI at https://yoursystem:8834/.
11. Once you confirm your new system is working correctly and all the files are migrated, go through the removal process on the original system listed in the Mac OS X section of this document.

Feed Registration and UI Configuration

This section describes how to configure the Nessus 6 server on all platforms. The initial configuration options such as proxy options and supplying an Activation Code is performed via a web-based process. After the installation of Nessus, you have six hours to complete the registration process for security reasons. If the registration is not completed in that time, restart **nessusd** and restart the registration process.

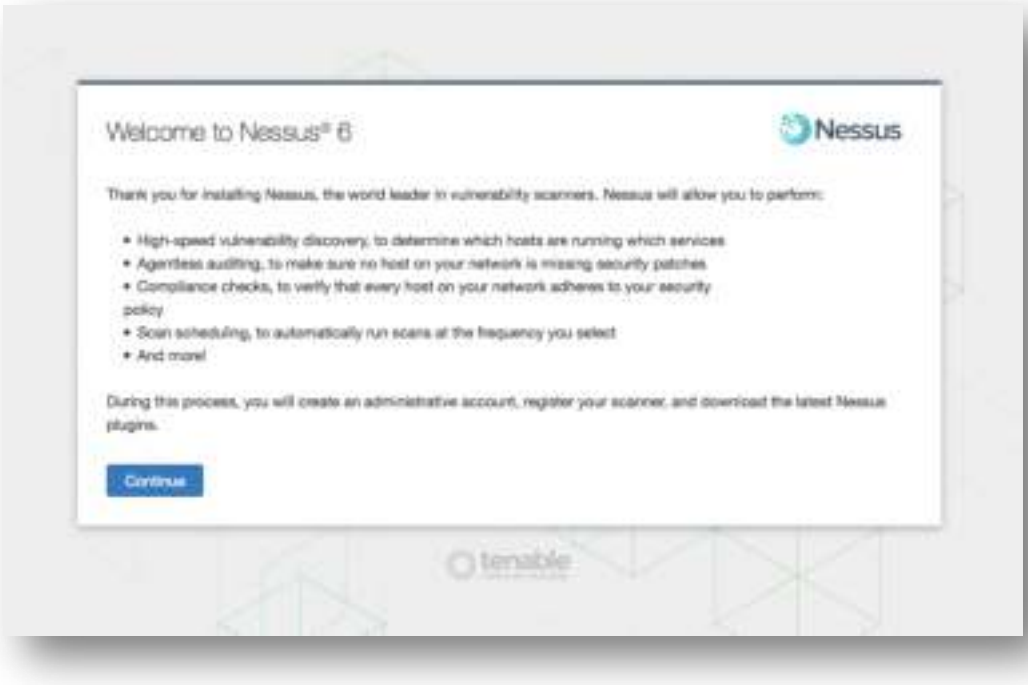
If the software installation does not open your web browser to the configuration page, you can load a browser and go to https://[Nessus Server IP]:8834/WelcomeToNessus-Install/welcome (or the URL provided during the install process) to begin the process. Note: Unix-based installations may give a URL containing a relative host name that is not in DNS (e.g., http://mybox:8834/). If the host name is not in DNS, you must connect to the Nessus server using an IP address or a valid DNS name.

The initial screen serves as a warning that all traffic to the Nessus GUI uses SSL (HTTPS). The first time you connect to the Nessus web server, your browser will display some type of error indicating the connection is not trusted due to a self-signed SSL certificate. For the first connection, accept the certificate to continue configuration. Instructions for installing a custom certificate are covered later in this document, in the "Configuring Nessus with Custom SSL Certificate" section.

Due to the technical implementation of SSL certificates, it is not possible to ship a certificate with Nessus that would be trusted to browsers. In order to avoid this warning, a custom certificate to your organization must be used.

Depending on the browser you use, there may be an additional dialog that provides the ability to accept the certificate:

Once accepted, you will be redirected to the initial registration screen that begins the walk-through. Click **Continue**.



The first step is to create an account for the Nessus server. The initial account will be an administrator; this account has access to execute commands on the underlying OS of the Nessus installation, so it should be considered in the same manner as any other administrator account:

The next screen requests a plugin Activation Code and allows you to configure optional proxy settings. If you do not have a code, you can obtain one via the Tenable Support Portal or through your sales channel. Once registered, you will then

receive an email with a link to activate the code. You must activate your code within 24 hours for Nessus to continue to operate.

If you are using the Tenable SecurityCenter, the Activation Code and plugin updates are managed from SecurityCenter. Nessus needs to be started to be able to communicate with SecurityCenter, which it will normally not do without a valid Activation Code and plugins. To have Nessus ignore this requirement and start (so that it can get the information from SecurityCenter), input “SecurityCenter” (case insensitive) without quotes into the Activation Code box. After starting Nessus, SecurityCenter users have completed the initial installation and configuration of their Nessus scanner and can continue to the section “Working with SecurityCenter”.

If you do not register your copy of Nessus, you will not receive any new plugins and will be unable to start the Nessus server. Note: The Activation Code is not case sensitive.

If you select offline for your activation, please note that “offline” is case sensitive.

Once the Activation Code and **optional** proxy setting configuration has been completed, click "**Next**" to register your scanner:

After registration, Nessus must download the plugins from Tenable. This process may take several minutes to an hour, depending on your connection speed, as it transfers a considerable amount of data to the machine, verifies file integrity, and compiles them into an internal database. Note that subsequent plugin updates are processed much more quickly.

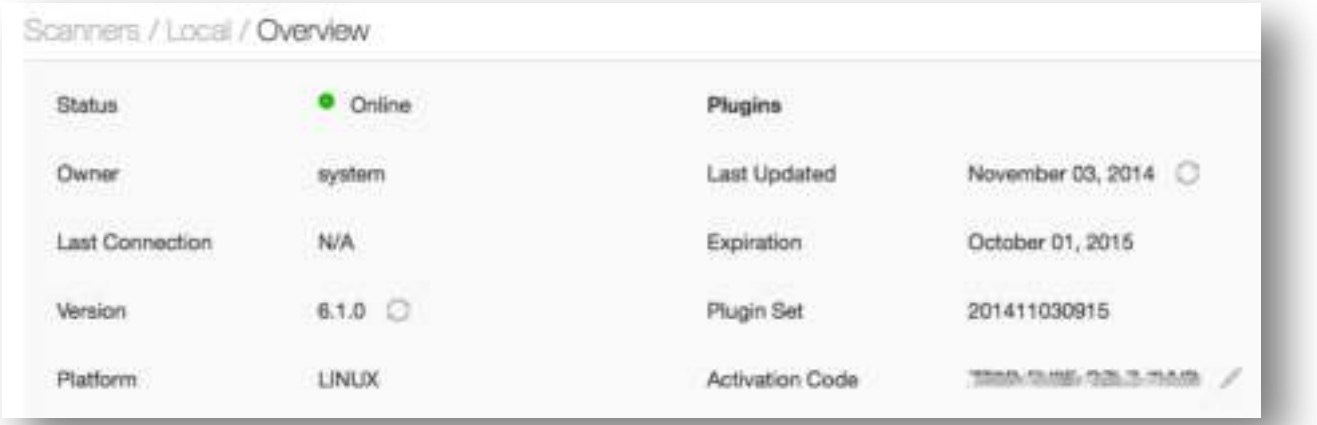
After the initial registration, Nessus will download and compile the plugins obtained from port 443 of plugins.nessus.org, plugins-customers.nessus.org, or plugins-us.nessus.org in the background.

Once the plugins have been downloaded and compiled, the Nessus GUI will initialize and the Nessus server will start:

After initialization, Nessus is ready for use!

Using the administrative credentials created during the installation, log in to the Nessus interface to verify access.

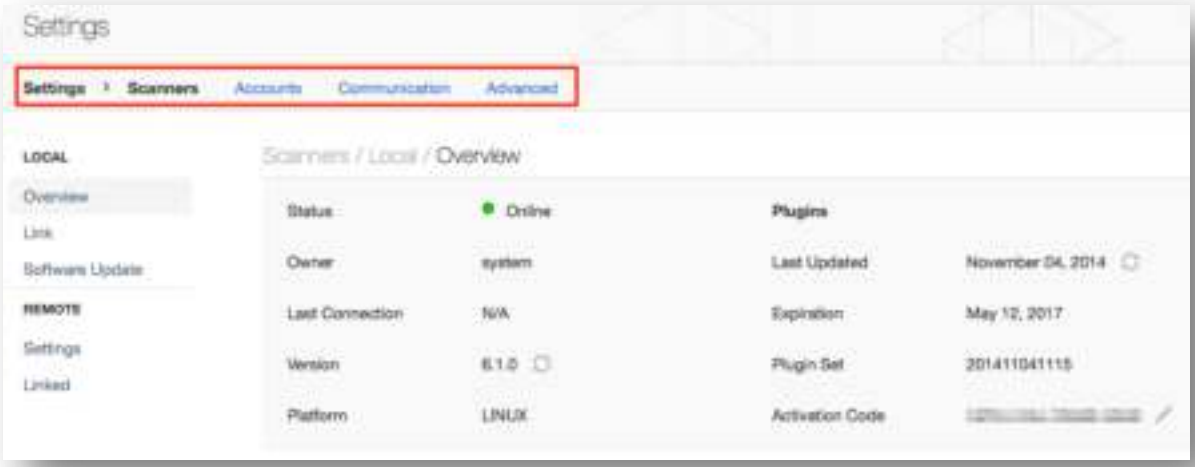
Once authenticated, click on the down arrow next to the username (e.g., “admin”) and select “**Settings**” to view information about Nessus and the plugin set.



System Configuration

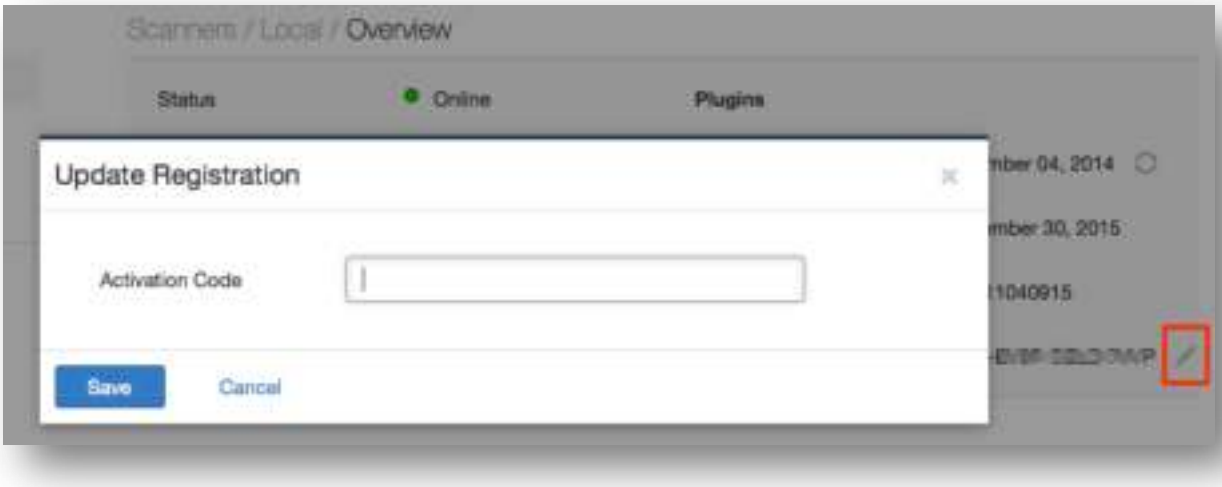
Nessus server configuration is managed via the GUI. The `nessusd.conf` file is deprecated. In addition, proxy settings, subscription feed registration, offline updates, mail server, and LDAP server settings are managed via the GUI.

Note that the configuration is divided into four sections: **Scanners**, **Accounts**, **Communication**, and **Advanced**.



Resetting Activation Codes

After the initial Activation Code is entered during the setup process, subsequent Activation Code changes are performed through the "**Overview**" link under "**Local**". This can be accessed by clicking the pencil next to the activation code on the lower right of the UI.



Inputting a new code in the "**Update Registration**" field of the "**Register**" button and clicking "Save" will update the Nessus scanner with the new code (e.g., if upgrading from Nessus Home to commercial Nessus).

If at any time you need to verify a registration code is in use for a given scanner, you can use the `--code-in-use` option to the `nessuscli fetch` program. Note that this option requires administrative privileges and network connectivity.

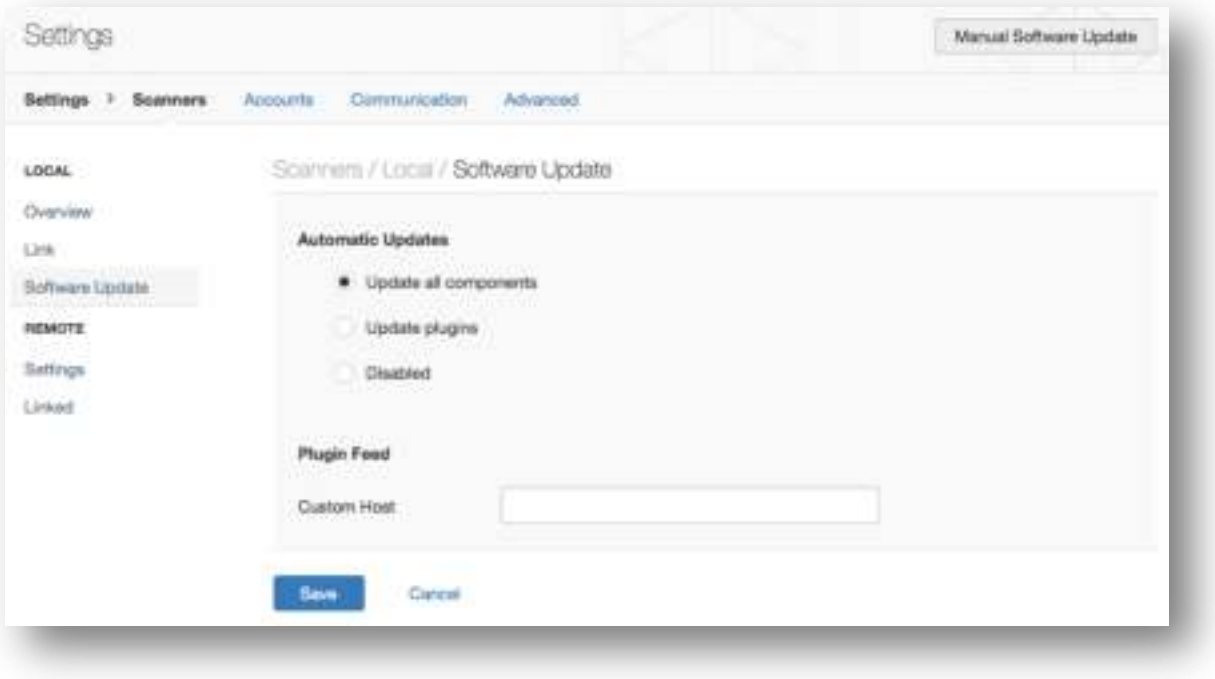
Scanners

The Scanners section of the Settings shows the local scanner Nessus version and plugin information and software updates. This also includes information on remote scanners.

Software Updates on the Local Scanner

Under the Local scanner, you can configure "**Software Update."** This can be used to force Nessus to update plugins from a specific host. For example, if plugins must be updated from a site residing in the U.S., you can specify "`plugins-us.nessus.org`".

Additionally, you can update the plugins or all components automatically. This is toggled through the radio buttons listed below **Automatic Updates**.

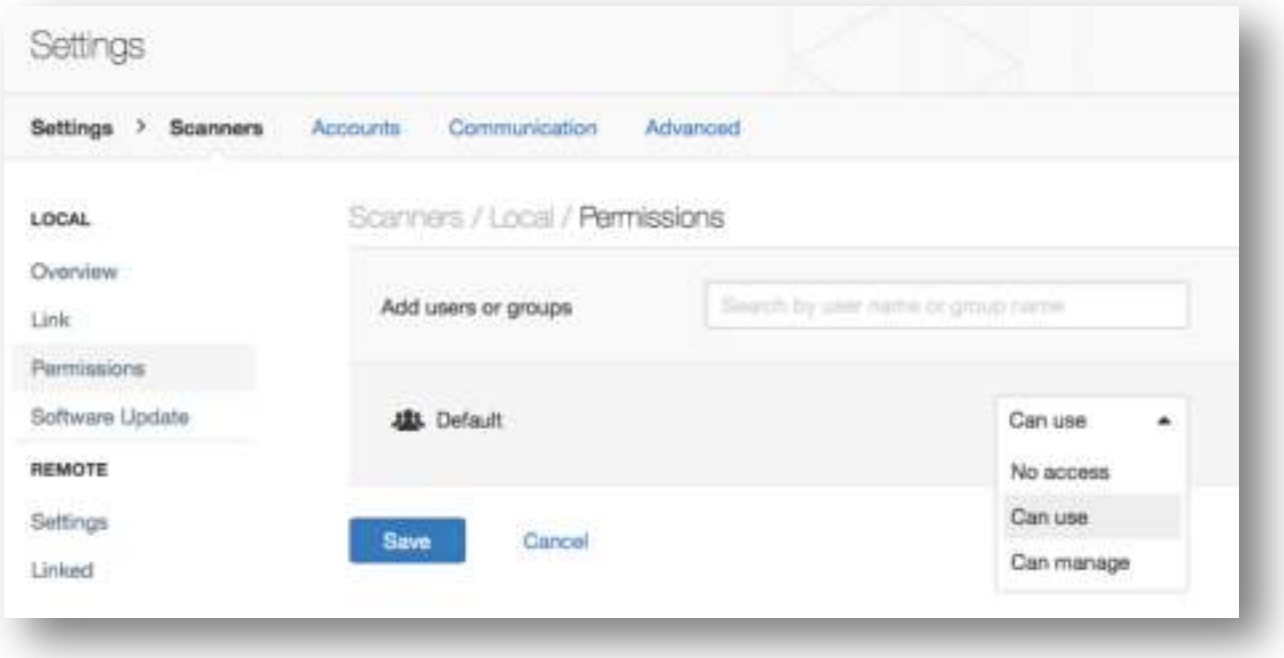


The "**Manual Software Update**" button allows you to specify plugins for updating, update all components, or a customer plugin library for processing. This also allows you to do offline updates.

For more details on offline updating, consult the "Nessus without Internet Access" section later in this document.

Note that if “Update plugins” is selected, the scanner will not receive automatic updates for the Web UI and engine, which could prevent new features from working.

In Nessus Enterprise, you can control the permissions of the scanner:

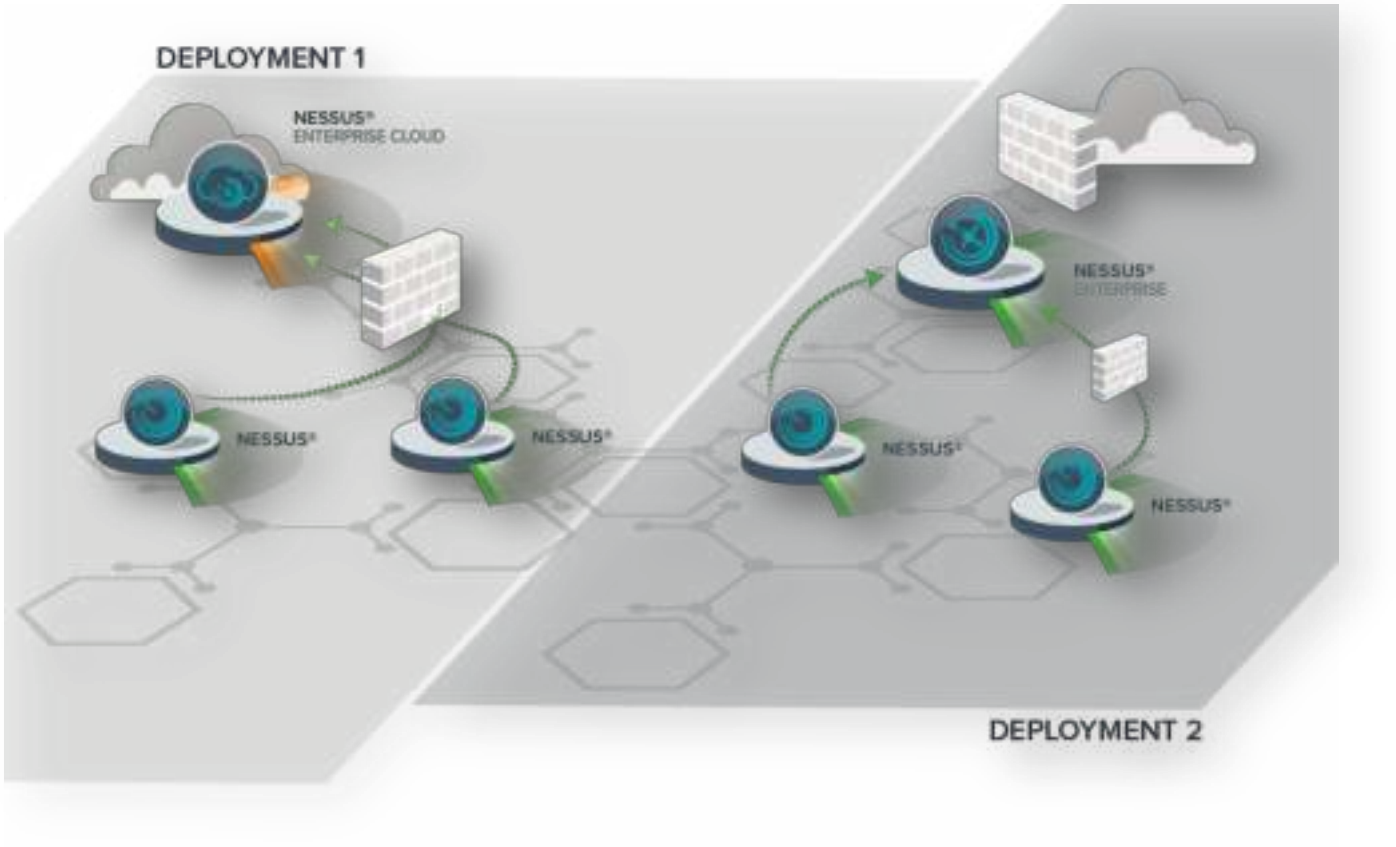


Configuring Multi-Scanner

The Multi Scanner functionality gives your Nessus scanner the ability to delegate vulnerability scanning to multiple secondary servers, or be delegated to perform scans for another. You can use your own Nessus server to act as the

primary, or you can configure your Nessus Enterprise Cloud scanner in the cloud to be the primary. This allows for consolidated reporting in a single Nessus user interface with scheduled scanning and emailing results.

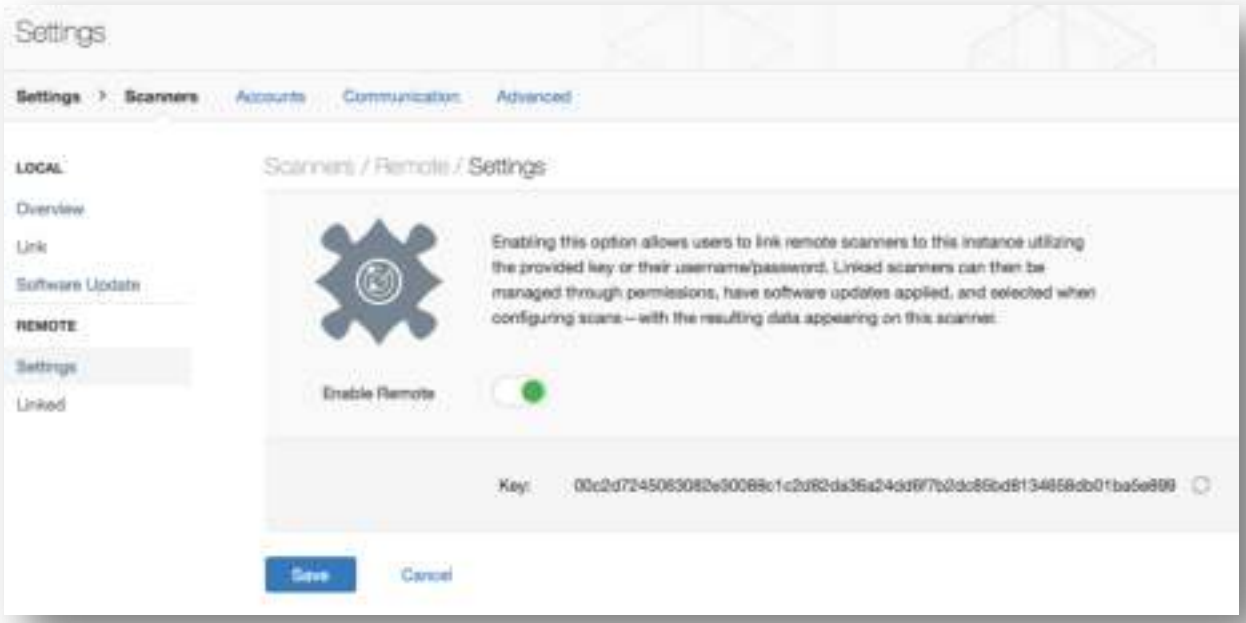
The use of this functionality positions companies to create an extended network of Nessus scanners that give added value. Through strategic positioning of scanners, you are able to not only test for vulnerabilities and misconfigurations, but also examine systems from different viewpoints on the network. This can greatly assist you in ensuring that network screening devices (e.g., firewalls, routers) are properly restricting access to a given system. This also helps in ensuring those devices aren't affecting the accuracy of the scan.



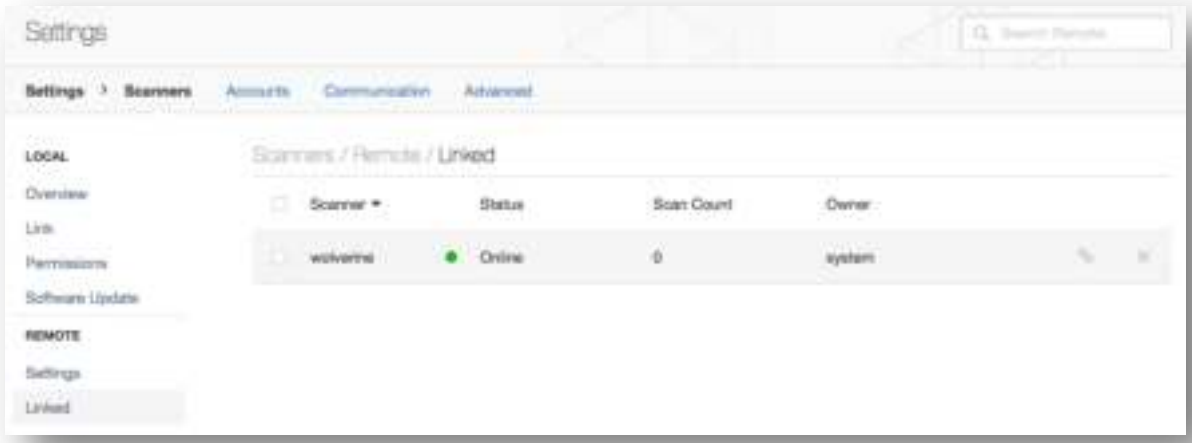
It is important to note that primary scanners do not reach out to the secondary scanners. Instead, secondary scanners periodically poll the primary scanner they are registered with to receive new instructions. When deploying a network of Nessus scanners using this functionality, this must be kept in mind to ensure that nothing will prevent connections from a secondary scanner to its primary.

Scanners that are managed by SecurityCenter cannot use the Multi-Scanner functionality.

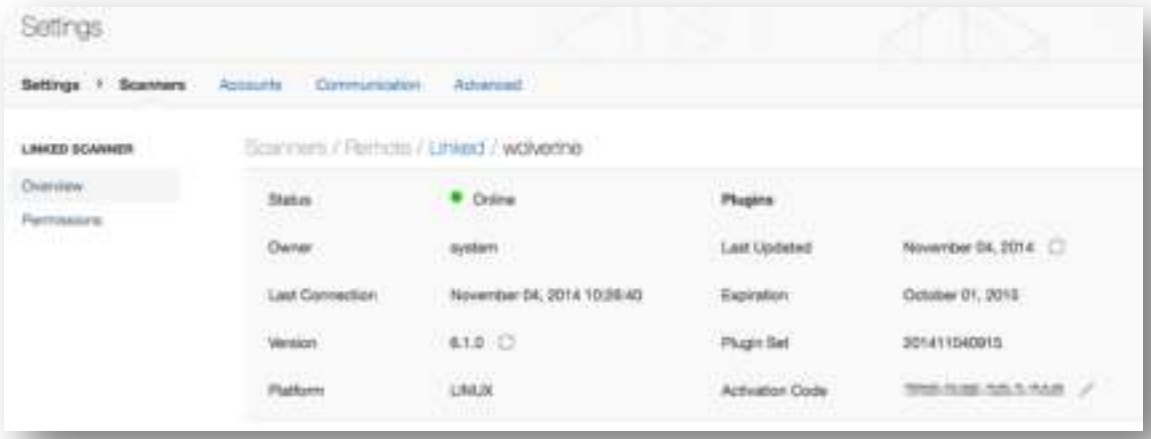
By default, a Nessus scanner will have this feature disabled. As a primary scanner, your installation will gain the ability to designate scans to additional scanners that have been configured to be a secondary scanner. After selecting the "**Settings**" under the Remote scanner section, select "**Enable Remote**". A key will be generated that is used as a shared secret for a secondary scanner to authenticate to the primary:



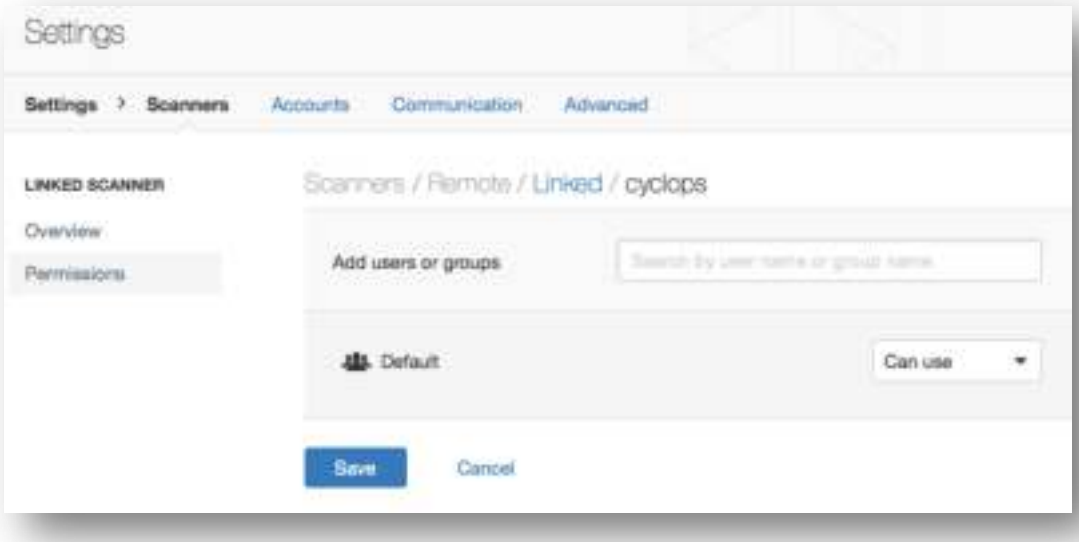
This key is only used for the initial linking of two scanners. Subsequent communication is done via a separate set of credentials. At any time, you can disable this functionality by clicking the "**Delete**" button after selecting the scanner. If there is ever concern over the shared secret becoming compromised, you can regenerate the key at any time by clicking the arrows to the right of the key. Regenerating the key will not disable any secondary scanners that are already registered. Once the secondary scanner has established communications with the primary scanner, it will display on this interface under **Remote** scanners menu under the **Linked** menu:



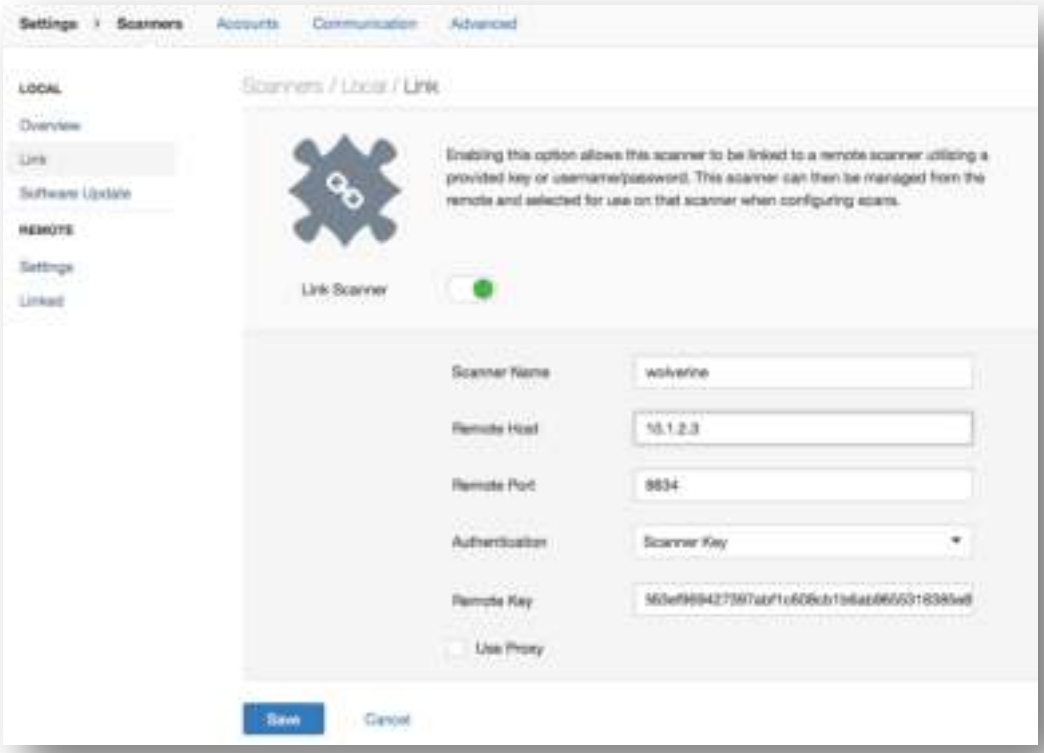
As a primary scanner, you can unlink a secondary scanner via the icon on the left. Unlinking the scanner will make it unavailable for scheduled scans until re-linked. To completely remove a scanner, click the "X". To retrieve information about the secondary scanner, click on the scanner name:



In Nessus Enterprise, you can configure the permissions of the users or groups who **Can use**, **Can manage**, or have **No access** the remote scanner:



To configure your scanner to be a secondary scanner, check the "**Link Scanner**" under the Local scanner **Link** menu item:



Assign the scanner a unique name for easy identification, along with the key generated from the primary scanner, the primary scanner IP address, and primary scanner port. If communication must be directed through a proxy, select this option. Once selected, the scanner will use the proxy configured under `Settings` > `Proxy`. Note that authentication for the secondary scanner must be either the primary scanner key or a Nessus Enterprise Cloud username and password. Once configured, Nessus will ensure that the scanner can reach and access the primary scanner and assign it a UUID for identification.

At any time, you can disable the secondary scanner setup via the button on the upper right. Once a scanner is designated Primary, it cannot be a secondary at the same time.

To unlink a scanner, go to the **Local** scanner and click **Link**. Deselect **Link Scanner** and click the **Save** button. This will clean out any previously linked scanner that is allowed to manage your local scanner.

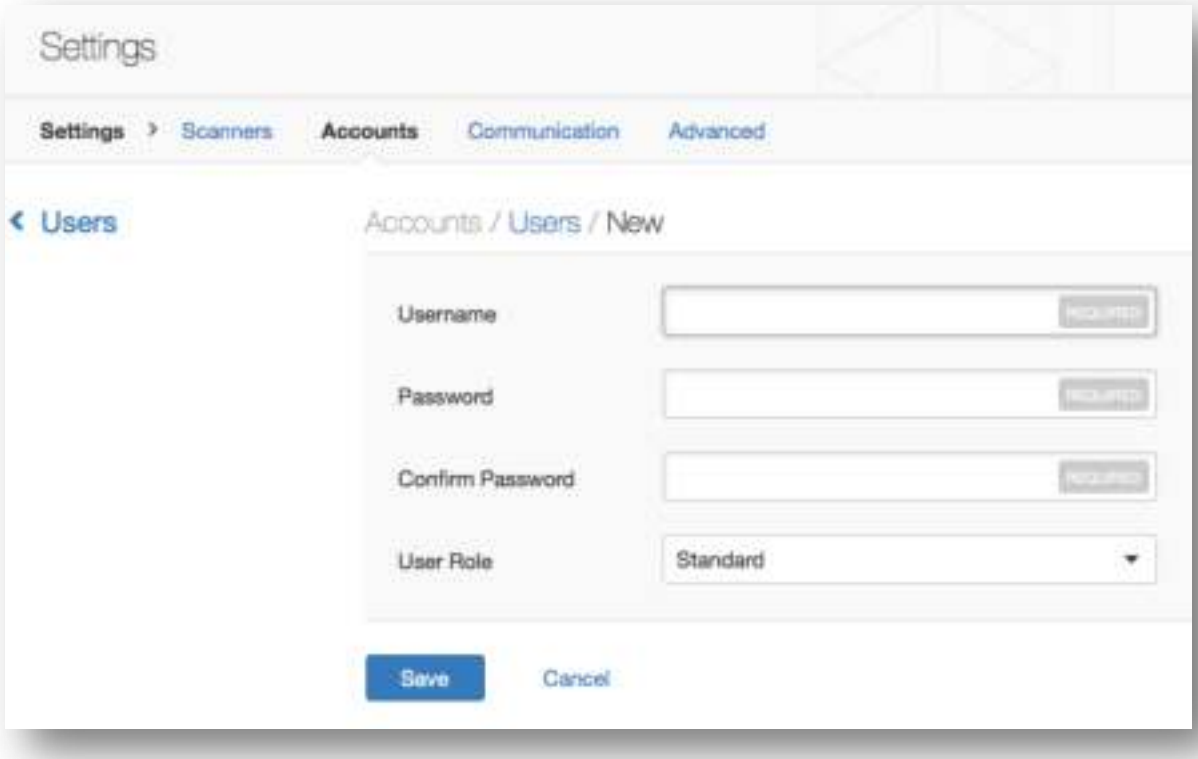
Accounts

The **Accounts** section of the Settings allows an administrator to create new user accounts and manage the accounts. In Nessus Enterprise, there are additional user roles and user groups that can be created.

Create and Manage Nessus Users

During the initial setup, one administrative user is created. Using the credentials specified during the setup, log in to the Nessus GUI. Once authenticated, click on the "**Users**" heading at the top:

To create a new user, click "**New User**" on the upper left. This will open a dialogue box prompting for required details:

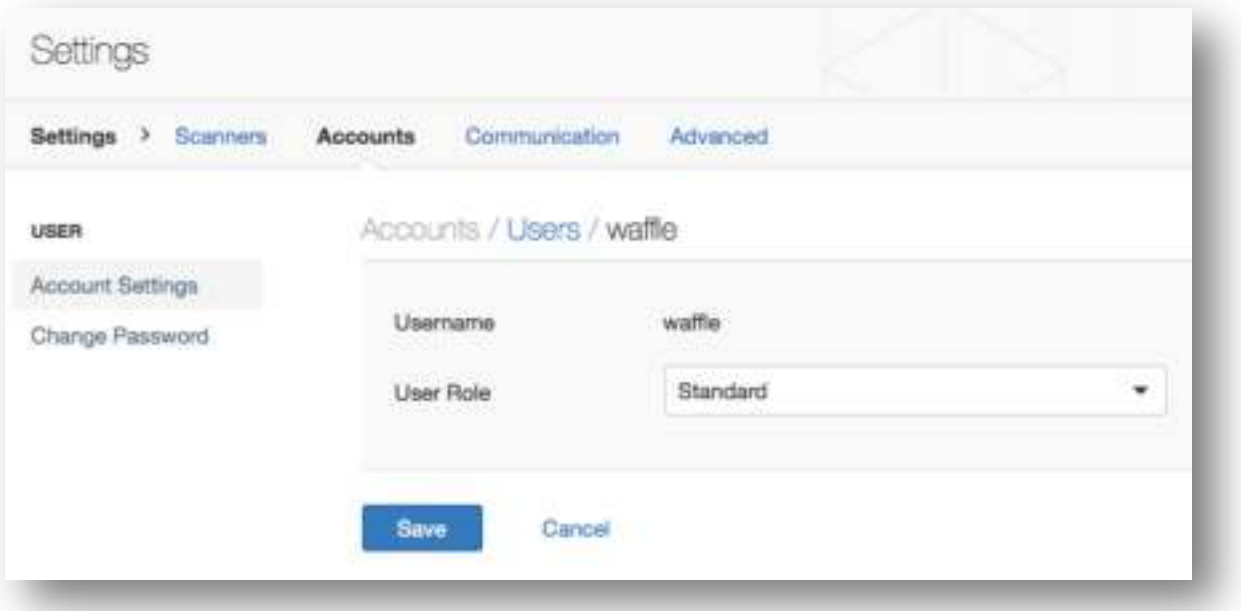


Input the username and password, verify the password, and determine if the user will have administrator privileges.

Option	Description
Username	Nessus user account name
Password	The Nessus user's password
Confirm Password	Re-type the password for confirmation
User Role	There are two types of user roles in Nessus: standard and system administrator. System administrators can link scanners, administer user accounts and other system settings, and can configure software updates.

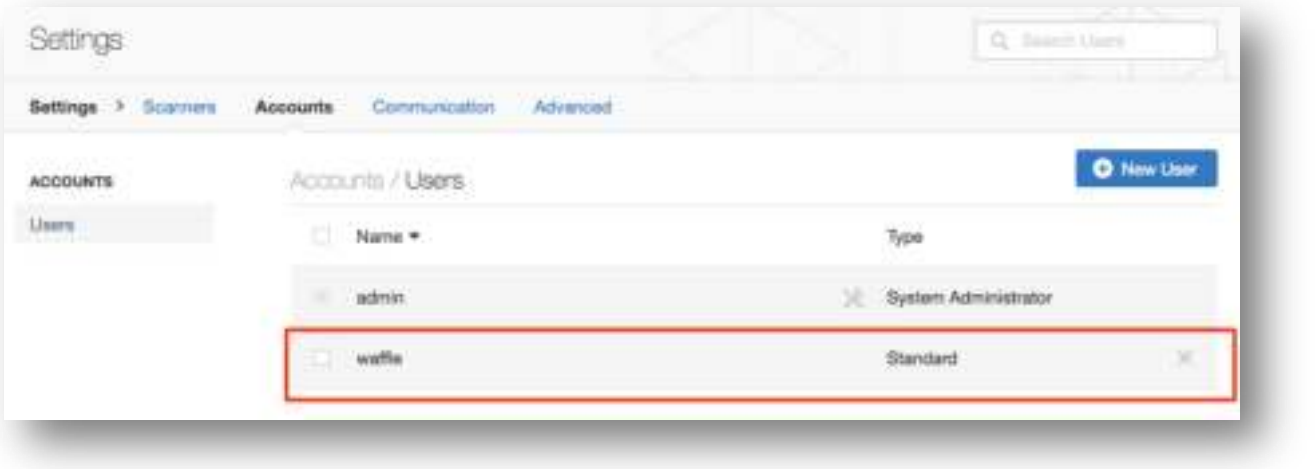
Nessus user roles are different in Nessus Enterprise. They are discussed later in the document.

If a user account needs to be modified, click on the user name. This enables you to change the user role to standard or system administrator under **Account Settings**, or **Change Password** on the selected account.



You cannot rename a user. If you want to change the name of a user, delete the user and create a new user with the appropriate login name.

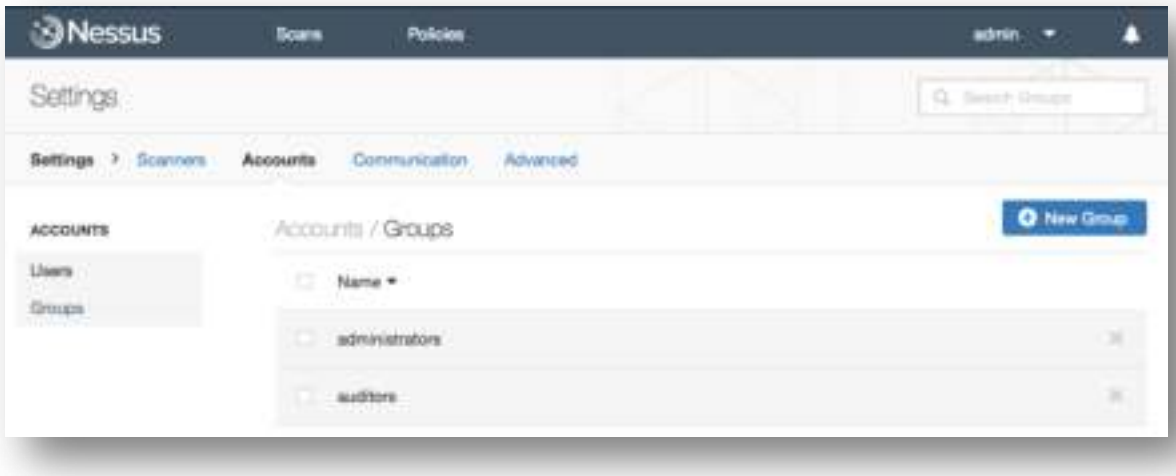
To remove a user, either select the check box to the right of the account name on the list and then "**Delete**" at the top, or click the "**X**" to the right of the account name. You will be prompted for confirmation after deleting the account:



If you require a Nessus user account to have scanning restrictions placed on it, use the command-line interface (CLI) covered later in this document in the "Using and Managing Nessus from the Command Line" section.

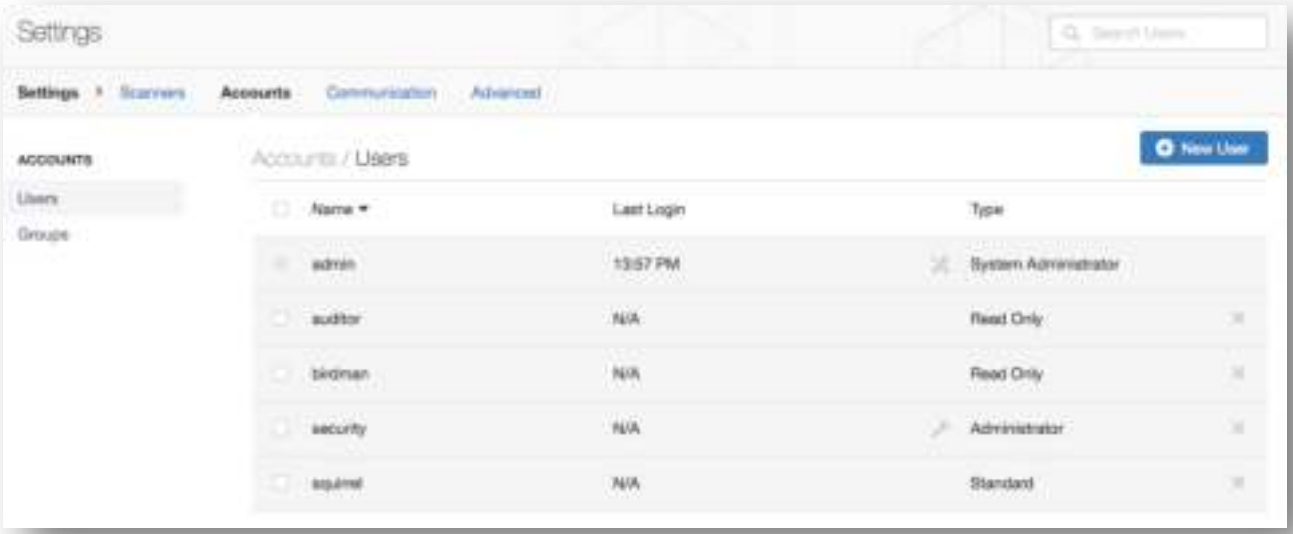
Create and Manage Nessus Enterprise User Roles and Groups

Nessus Enterprise has an extensive set of user and group roles that allow for granular sharing of policies, schedules, and scan results. In the **Settings** under "Accounts", you will be able to configure both users and groups.

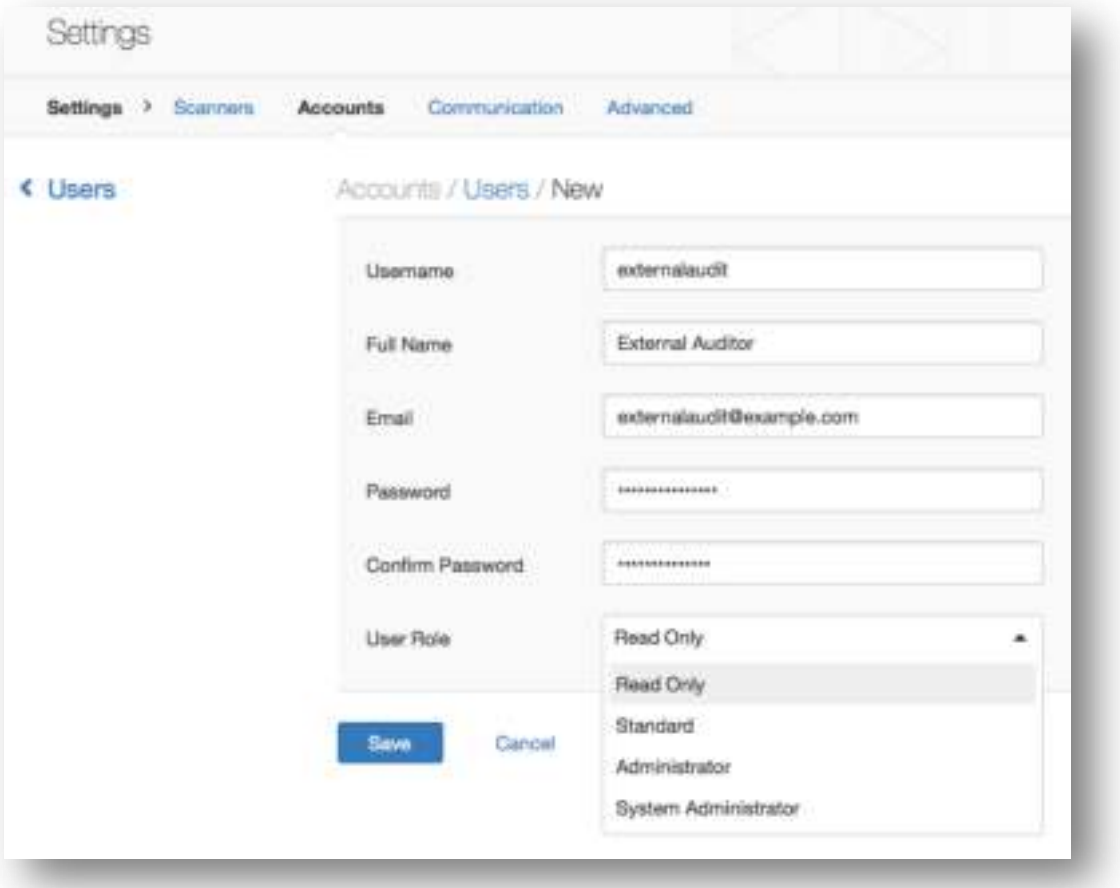


Users in Nessus Enterprise can be managed via an LDAP server or with Nessus Enterprise. Instructions on configuring LDAP are under the LDAP Server section of this document.

Like Nessus, Nessus Enterprise allows you to create new users and passwords. Users in Nessus Enterprise have four roles available instead of the two available in Nessus.



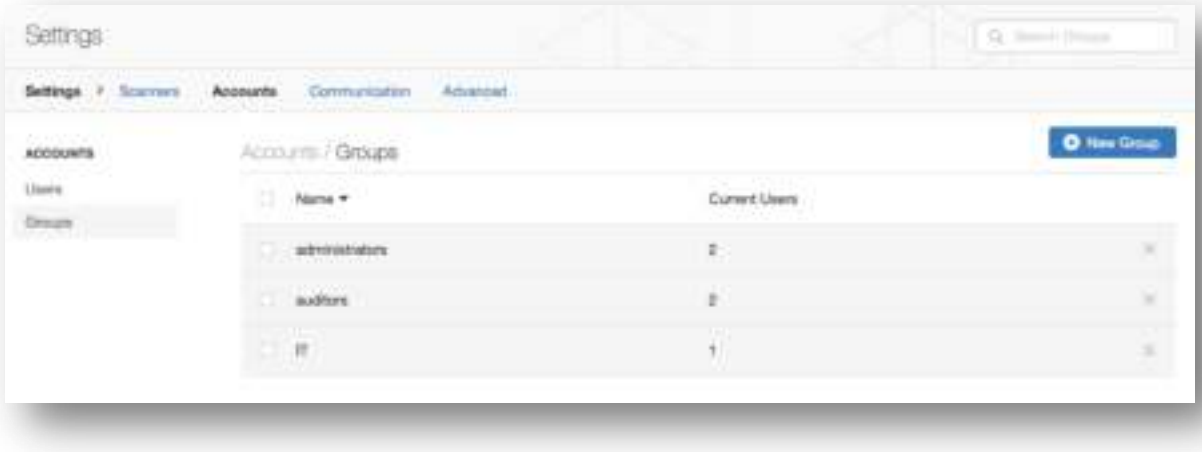
The "**Accounts**" shows the current authenticated user as well as the user role: **Read Only**, **Standard**, **Administrator**, or **System Administrator**. The default "**admin**" account has the user role **System Administrator**.



The user roles in Nessus Enterprise are defined below:

User Role	Description
Read Only	Users with the Read Only user role can only read scan results.
Standard	Users with the Standard user role can create scans, policies, schedules, and reports. They cannot change any user, user groups, scanner, or system configurations.
Administrator	Users with the administrator role have the same privileges as the standard user but can also manage users, user groups, and scanners.
System Administrator	Users with the system administrator role have the same privileges as the administrator and can also configure the system.

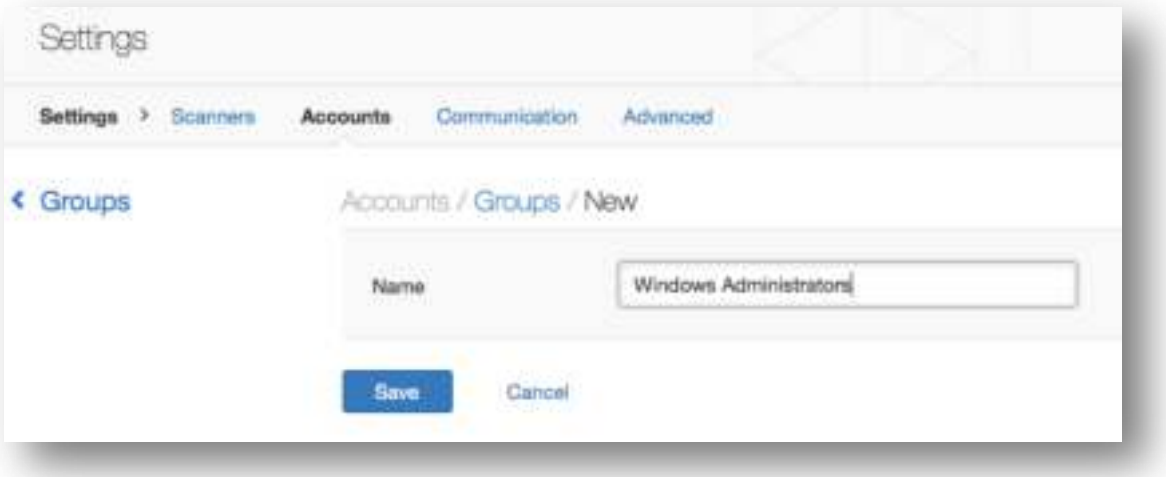
Additionally, users can be placed into groups depending on their function or classification (e.g., Windows Administrators, Auditors, Firewall Administrators, or Security Analysts).



Click on **Groups** to navigate to the group view. This will list all the available groups and the list of total users in each specific group.

To remove a group, click on the delete button to the right of the group name.

To create a new group, click on the "**New Group**" button in the upper right. This will navigate you to the **New Group** dialog:



Once the group is created, the display will return to the list of groups. Click on the desired group name to manage the users within the group:

To remove a user from the group, click on the delete button to the right of each user. If you wish to delete multiple users at a time, select the desired users and click the remove button.

To add a user to the group, click the "**Add User**" button. This will display a new dialog:

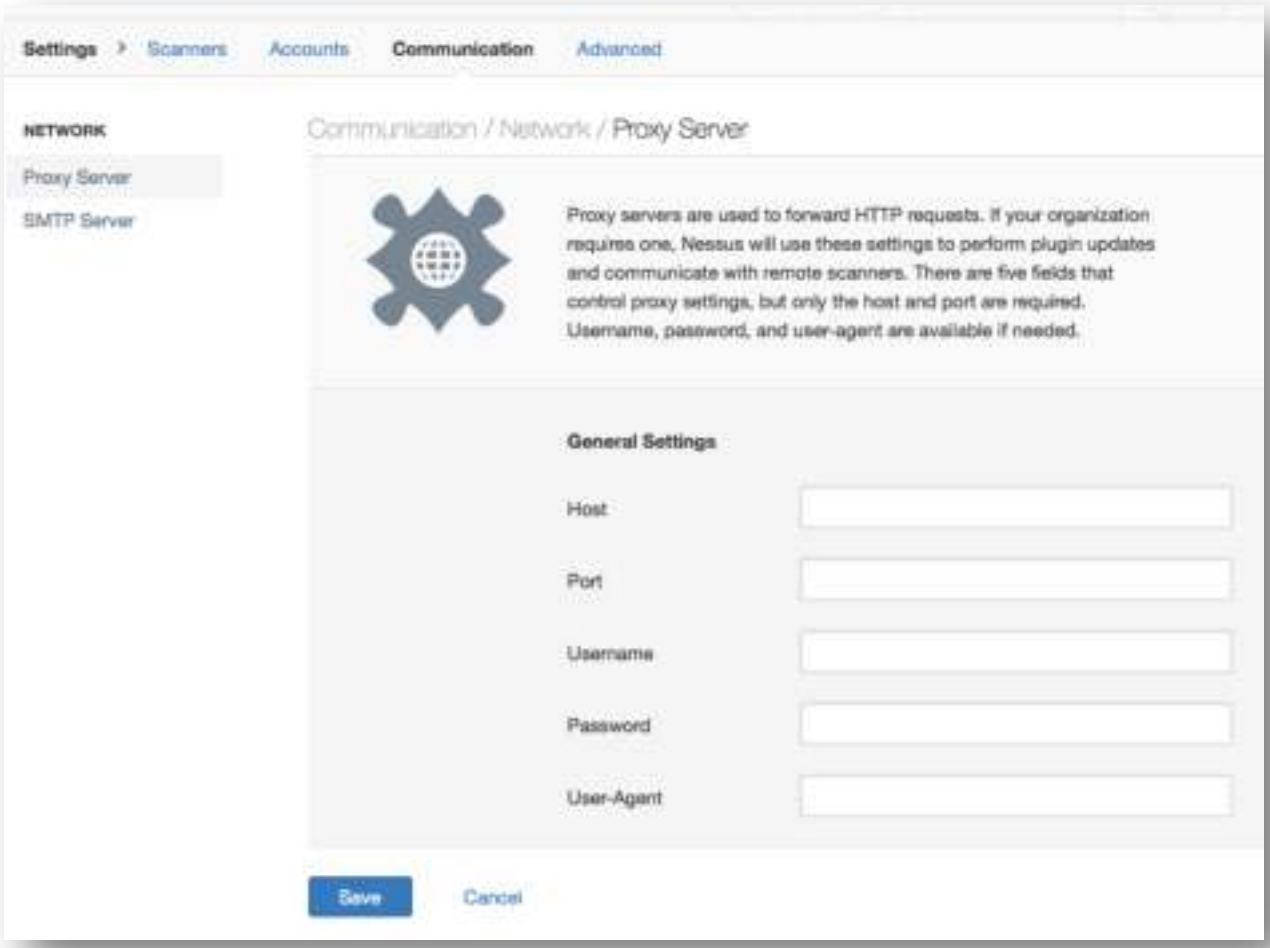
From the drop-down, select the desired user to add to the group. This will return you to the group listing.

Communication

The communication section covers configuring Nessus to interact with external servers. This includes the proxy server and the SMTP server. For Nessus Enterprise, this also includes the LDAP server and the Cisco ISE.

Proxy Settings

Under the "**Network**" menu via the drop-down on the top left, the "**Proxy Setting**" tab allows you to configure a web proxy for plugin updates. This is required if your organization requires that all web traffic be directed through a corporate proxy:

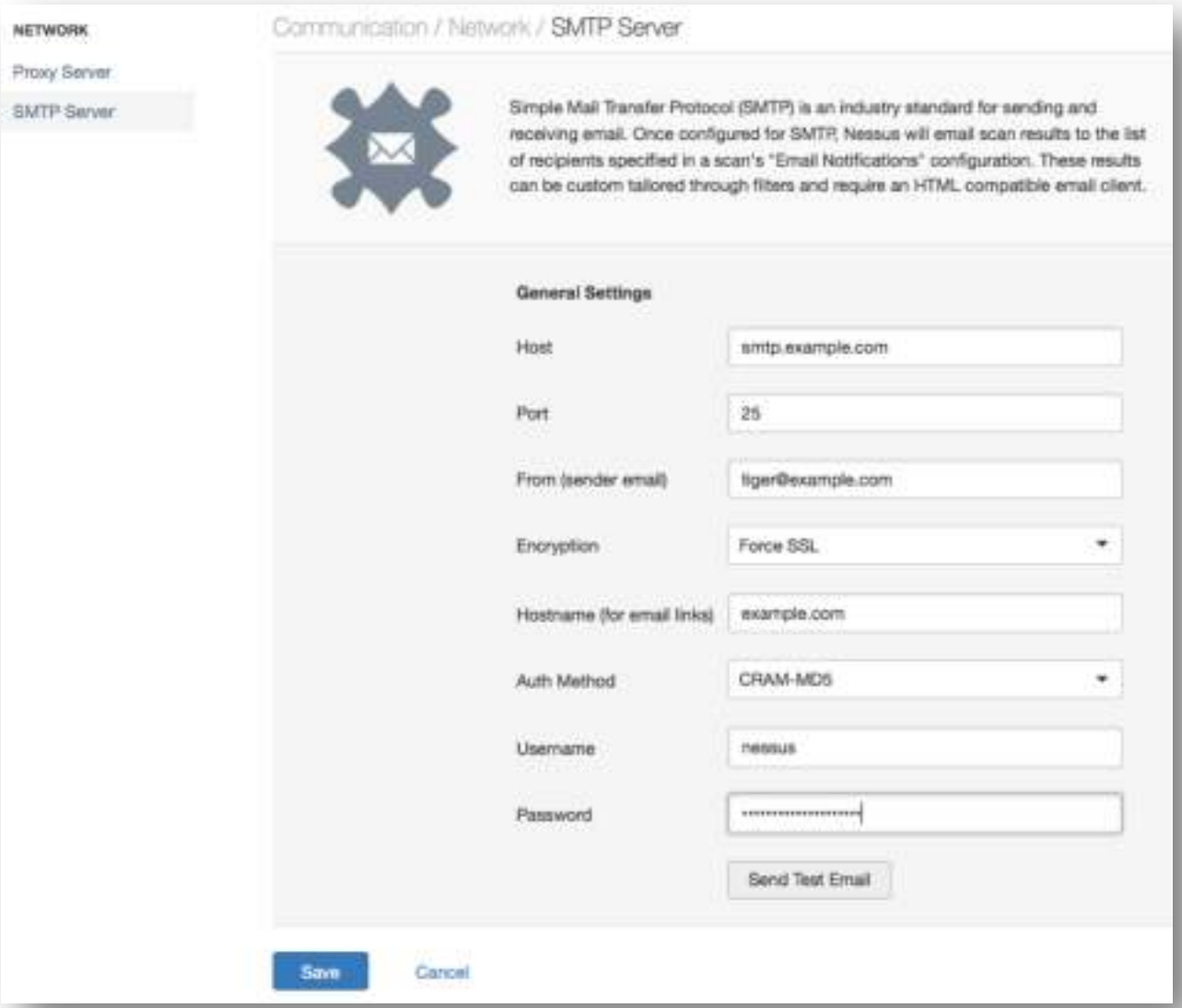


There are five fields that control proxy settings, but only the host and port are required. Optionally, a username and password can be supplied, if necessary.

Option	Description
Host	The hostname or IP of the proxy (e.g., proxy.example.com).
Port	The port of the proxy (e.g., 8080).
Username	Optional: If a username is required for proxy usage (e.g., “jdoe”).
Password	Optional: If a password is required for proxy usage (e.g., “guineapigs”).
User-Agent	Optional: If the proxy you are using filters specific HTTP user agents, a custom user-agent string can be supplied.

STMP Server

The “**STMP Server**” tab (under the “**Network**” menu), allows you to configure an SMTP server to notify users of scan completion via email.



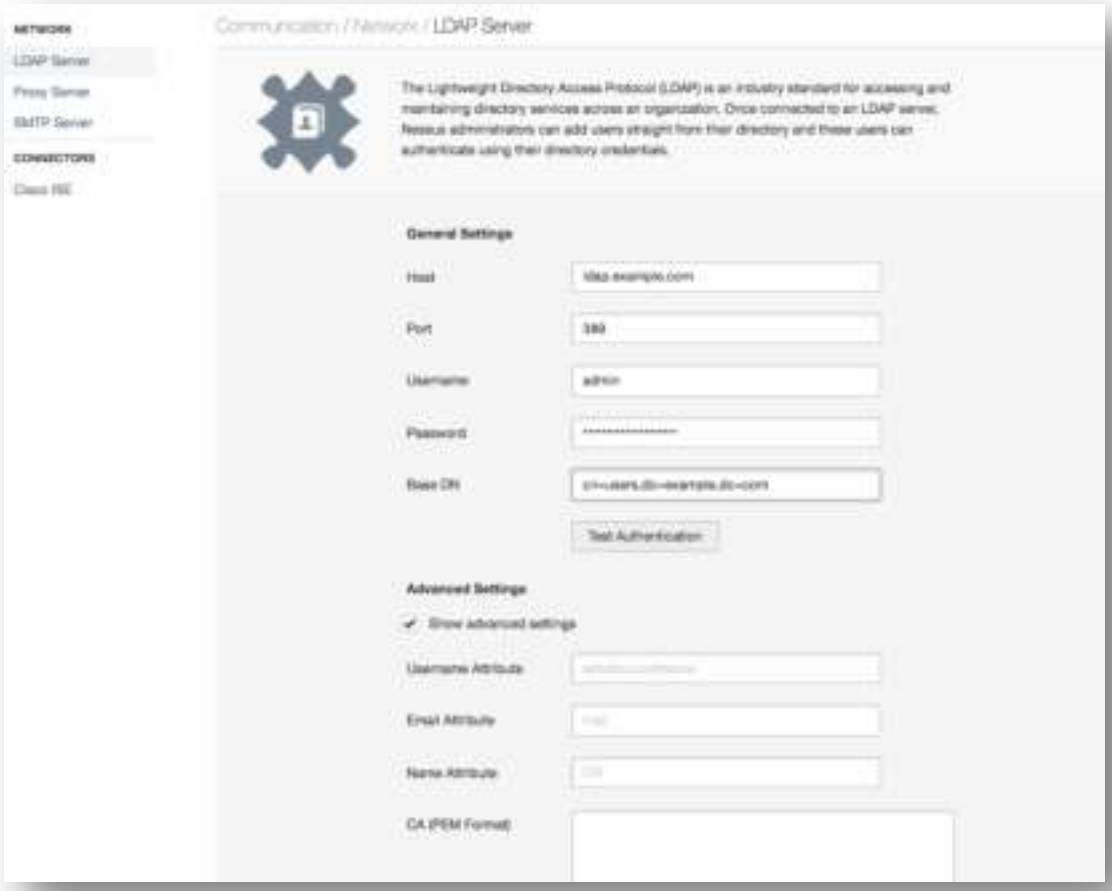
Option	Description
Host	The host or IP of the SMTP server (e.g., smtp.example.com).
Port	The port of the SMTP server (e.g., 25).
From (sender email)	Who the report should appear to be from.

Nessus Server Hostname (for email links)	The IP address or hostname for the Nessus server. Note that this will only work if the Nessus host is reachable to the user reading the report.
Encryption	Specify what type of encryption should be used.
Auth Method	Method for authenticating to the SMTP server. Supported methods are None, Plain, NTLM, Login, and CRAM-MD5.
Username	The username used to authenticate to the SMTP server.
Password	The password associated with the username, provided the SMTP server requires a username and authentication.

LDAP Server

In Nessus Enterprise, the "**LDAP Server**" tab (under the "**Settings**" menu the left), allows you to configure an LDAP server so users can authenticate to the Nessus server using LDAP domain credentials.

If you try to add a user to Nessus from LDAP with a character such as "!" or "$" in it, Nessus gives a 400 error. Nessus only accepts the `A-Z`, `0-9`, `.`, `_`, `-`, `+` and `@` characters in the username field.



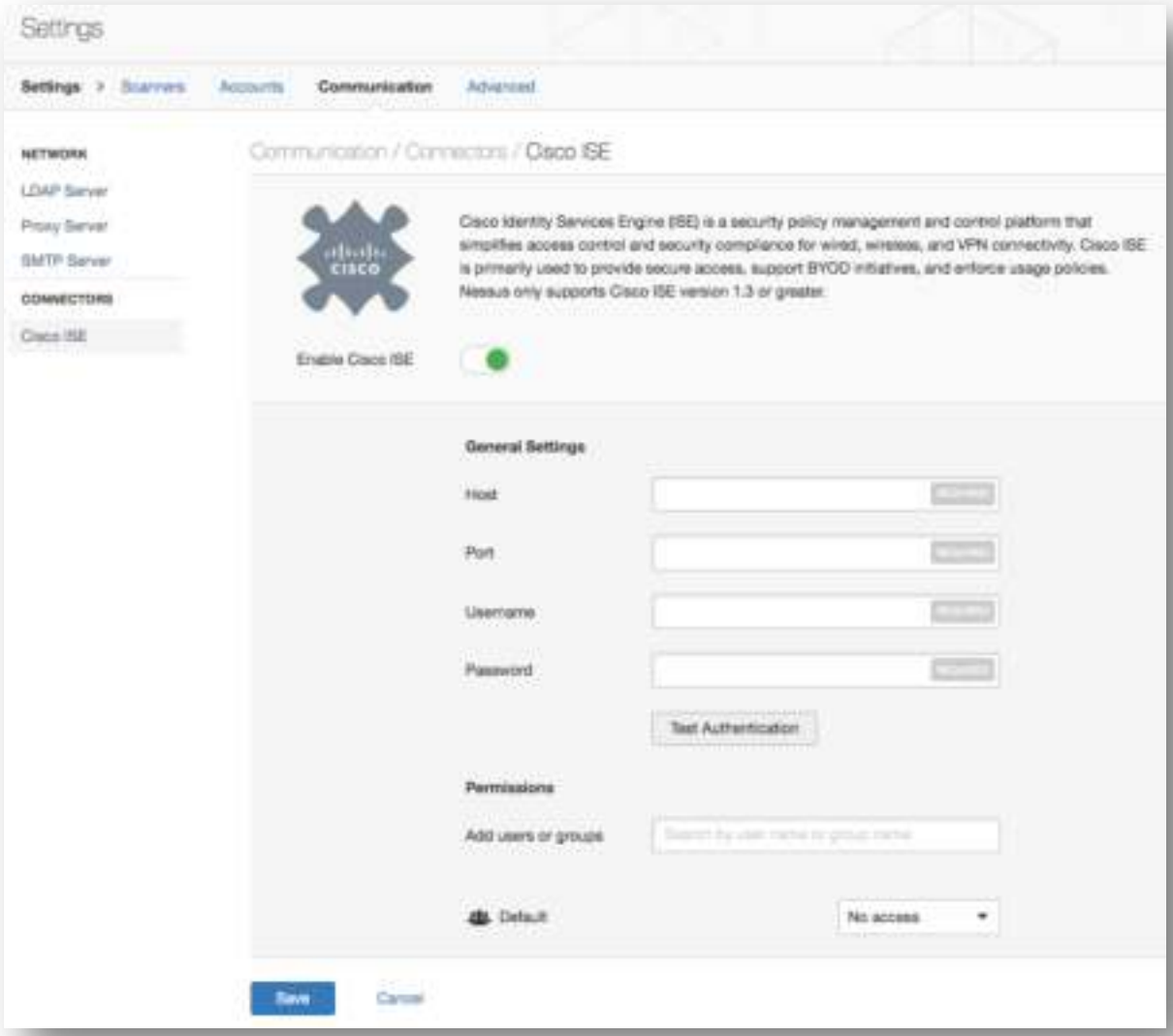
Option	Description
Host	The host or IP of the LDAP server (e.g., ldap.example.com)
Port	The port of the LDAP server (e.g., 389)
Username	LDAP account with administrator access
Password	Password for the LDAP account name above
Base DN	Top level of the LDAP directory tree. Example for a common name of users in example.com is `cn=users,dc=example,dc=com`.

If **Show advanced settings** is enabled, the following options are available:

Option	Description
Username Attribute	Default LDAP properties used for mapping a username
Email Attribute	Default LDAP properties used for mapping an email address
Name Attribute	Default LDAP properties used for mapping a real name
CA (PEM Format)	Digital certificate of the Certificate Authority (CA) in PEM format

Cisco ISE

In Nessus Enterprise, the "**Cisco ISE**" setting (under the "**Connectors**" menu on the left) allows you to configure a Cisco Identity Services Engine (ISE) server to retrieve information from the ISE and to request the ISE quarantine vulnerable devices.

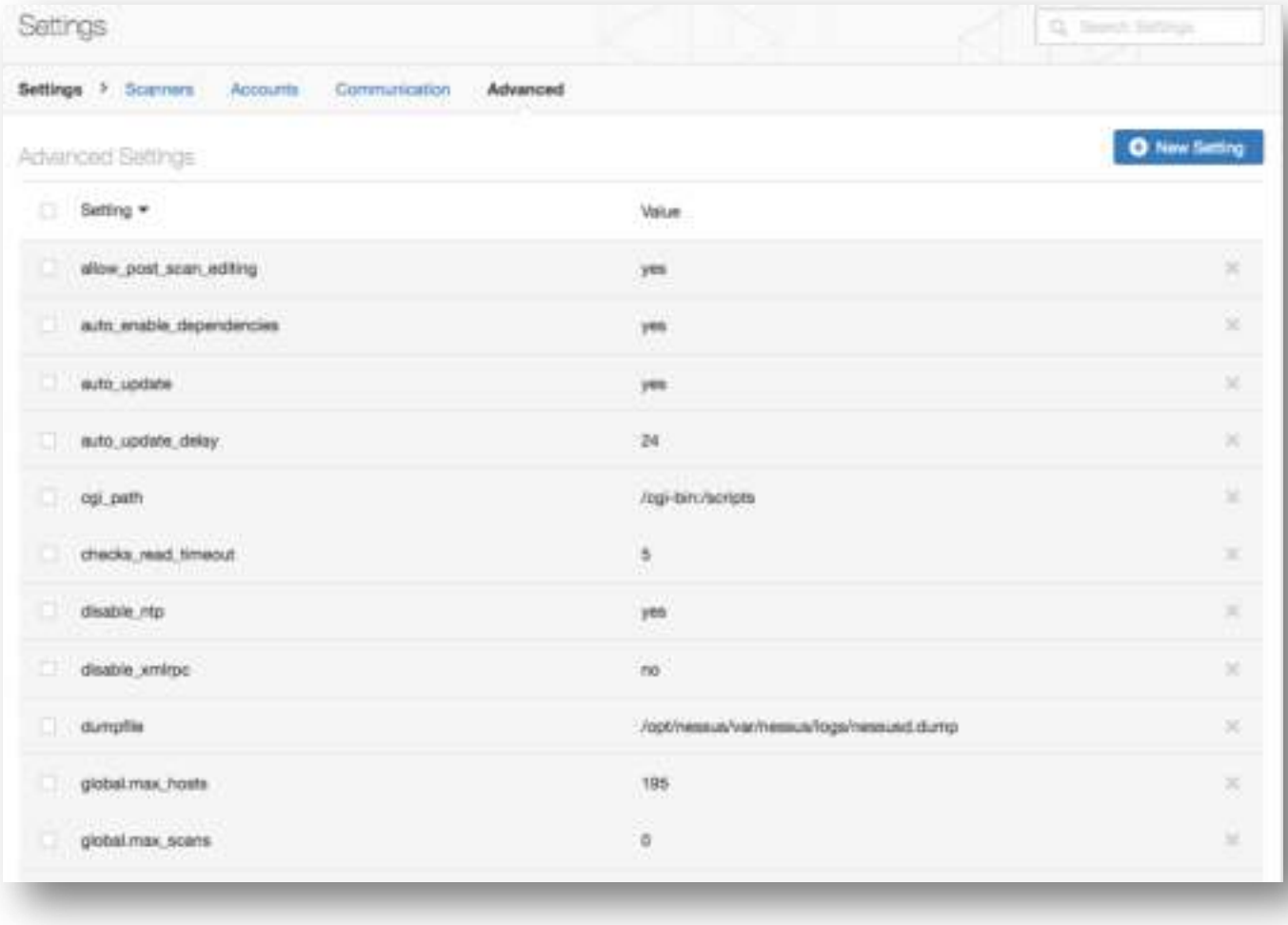


Option	Description
Host	Host name or IP address of Cisco ISE server
Port	Port for accessing Cisco ISE server (e.g. 1700)
Username	User account to access Cisco ISE
Password	Password for the user account

Advanced

Nessus uses a wide variety of configuration options to offer more granular control of how the scanner operates. Under the "Advanced" option on the top menu an administrative user can manipulate these settings.

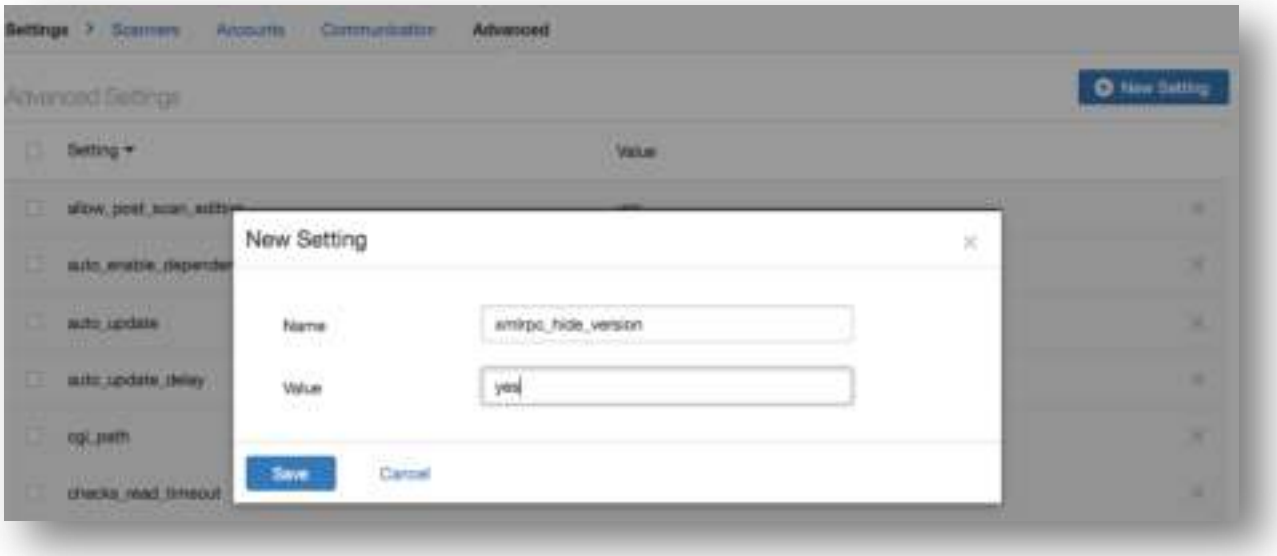
WARNING: Any changes to the Nessus scanner configuration will affect ALL Nessus users. Edit these options carefully!



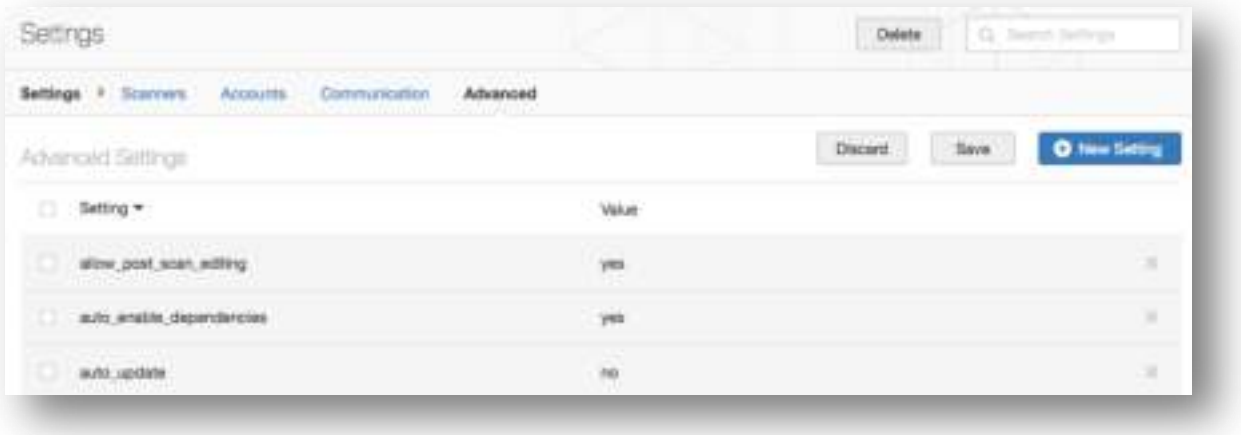
Each option can be configured by editing the corresponding field and clicking the "Save" button at the bottom of the screen. In addition, the option can be removed completely by clicking the ✖ button.

By default, the Nessus GUI operates on TCP port 8834. To change this port, edit the `xmlrpc_listen_port` to the desired port. The Nessus server will process the change within a few minutes.

If additional preferences are required, click on the "**New Setting**" button, input the name and value, and click on "**Save**". Once a preference has been updated and saved, Nessus will process the changes within a couple of minutes.



After clicking "**Save**", three buttons appear on the Advanced Settings:



After the changes are made, you can **Save** or **Discard** them. Note that **Save** will reload the configuration with the new changes.

For details on each of the configuration options, consult the "Configure the Nessus Daemon (Advanced Users)" section of this document.

Note that there are two optional advanced preferences that are not default, but can be added to enhance the security of the Nessus installation:

- Setting "**`xmlrpc_hide_version`**" to "**`yes`**" in the preferences prevents an unauthenticated user from getting the version of the Nessus engine, but will still return the UI and webserver versions.
- Setting "**`user_max_login_attempt`**" to a numeric value (i.e., "`3`") will lock a given account after `n` invalid login attempts. Unlocking the user requires the admin to edit the user.

Configure the Nessus Daemon (Advanced Users)

The Nessus GUI configuration menu contains several configurable options. For example, this is where the maximum number of checks and hosts being scanned at one time, the resources you want **nessusd** to use and the speed at which data should be read are all specified, as well as many other options. It is recommended that these settings be reviewed and modified appropriately based on your scanning environment. The full list of configuration options is explained at the end of this section.

In particular, the **global.max_hosts**, **max_hosts**, and **max_checks** values can have a great impact on your Nessus system's ability to perform scans, as well as those systems being scanned for vulnerabilities on your network. Pay particular attention to these two settings.

A non-admin user cannot upload plugins to Nessus, cannot restart it remotely (needed after a plugin upload), and cannot override the **max_hosts/max_checks** setting in the configuration section. If the user is intended for use by SecurityCenter, it must be an admin user. SecurityCenter maintains its own user list and sets permissions for its users.

In Nessus Enterprise, only a system administrator user can upload plugins to Nessus, can restart it remotely (needed after a plugin upload), and can override the **max_hosts/max_checks** setting in the configuration section. If the user is intended for use by SecurityCenter, it must be an admin user. SecurityCenter maintains its own user list and sets permissions for its users.

Here are the three settings and their default values as seen in the configuration menu:

Option	Value
global_max_hosts	530
max_hosts	40
max_checks	5

Note that these settings will be over-ridden on a per-scan basis when using Tenable's SecurityCenter or within a custom policy in the Nessus User Interface. To view or modify these options for a scan template in SecurityCenter, edit the "**Scan Options**" in the template. In the Nessus User Interface, edit the scan policy and then click on the "Options" tab.

Note that the **max_checks** parameter has a hardcoded limit of 15. Any value over 5 will frequently lead to adverse effects as most servers cannot handle that many intrusive requests at once.

Notes on max_hosts:

As the name implies, this is the maximum number of target systems that will be scanned at any one time. The greater the number of simultaneously scanned systems by an individual Nessus scanner, the more taxing it is on that scanner system's RAM, processor, and network bandwidth. Take into consideration the hardware configuration of the scanner system and other applications running on it when setting the **max_hosts** value.

As a number of other factors that are unique to your scanning environment will also affect your Nessus scans (e.g., your organization's policy on scanning, other network traffic, the effect a particular type of scan has on your scan target hosts), experimentation will provide you with the optimal setting for **max_hosts**.

A conservative starting point to determine the best **max_hosts** setting in an enterprise environment is to set it to “20” on a Unix-based Nessus system and “10” on a Windows Nessus scanner.

In addition to **max_hosts**, the server allows a **global.max_hosts** setting that controls the total hosts that can be scanned across all users at the same time. Administrators are bound by the same restrictions on both settings to avoid excessive load on the scanning server, which may have adverse effects on other users.

Notes on max_checks:

This is the number of simultaneous checks or plugins that will be run against a single target host during a scan. Note that setting this number too high can potentially overwhelm the systems you are scanning depending on which plugins you are using in the scan.

Multiply **max_checks** by **max_hosts** to find the number of concurrent checks that can potentially be running at any given time during a scan. Because **max_checks** and **max_hosts** are used in concert, setting **max_checks** too high can also cause resource constraints on a Nessus scanner system. As with **max_hosts**, experimentation will provide you with the optimal setting for **max_checks**, but it is recommended that this always be set relatively low.

Configuration Options

The following table provides a brief explanation of each configuration option available in the configuration menu. Many of these options can be configured through the user interface when creating a scan policy.

Option	Description
allow_post_scan_editing	Allows a user to make edits to scan results after the scan completes.
auto_enable_dependencies	Automatically activate the plugins that are depended on. If disabled, not all plugins may run despite being selected in a scan policy.
auto_update	Automatic plugin updates. If enabled and Nessus is registered, fetch the newest plugins from plugins.nessus.org automatically. Disable if the scanner is on an isolated network that is not able to reach the Internet.
auto_update_delay	Number of hours to wait between two updates. Four (4) hours is the minimum allowed interval.
cgi_path	During the testing of web servers, use this colon delimited list of CGI paths.
checks_read_timeout	Read timeout for the sockets of the tests.
disable_ntp	Disable the old NTP legacy protocol.
disable_xmlrpc	Disable the new XMLRPC (Web Server) interface.
dumpfile	Location of a dump file for debugging output if generated.
enable_listen_ipv4	Directs Nessus to listen on IPv4.
enable_listen_ipv6	Directs Nessus to listen on IPv6 if the system supports IPv6 addressing.

global.max_hosts	Maximum number of simultaneous checks against each host tested.
global.max_scans	If set to non-zero, this defines the maximum number of scans that may take place in parallel. **Note**: If this option is not used, no limit is enforced.
global.max_simult_tcp_ sessions	Maximum number of simultaneous TCP sessions between all scans. **Note**: If this option is not used, no limit is enforced.
global.max_web_users	If set to non-zero, this defines the maximum of (web) users who can connect in parallel. **Note**: If this option is not used, no limit is enforced.
host.max_simult_tcp_ sessions	Maximum number of simultaneous TCP sessions per scanned host.
listen_address	IPv4 address to listen for incoming connections. If set to 127.0.0.1, this will restrict access to local connections only.
log_whole_attack	Log every detail of the attack? Helpful for debugging issues with the scan, but this may be disk intensive.
logfile	Location where the Nessus log file is stored.
login_banner	A text banner that will be displayed before the initial login to the Flash or HTML5 client.
max_hosts	Maximum number of hosts checked at one time during a scan.
max_checks	Maximum number of simultaneous checks against each host tested.
max_simult_tcp_sessions	Maximum number of simultaneous TCP sessions per scan.
min_password_len	Directs Nessus to enforce a policy for the length of a password for users of the scanner.
nasl_log_type	Direct the type of NASL engine output in **`nessusd.dump`**.
nasl_no_signature_check	Determines if Nessus will consider all NASL scripts as being signed. Selecting “yes” is unsafe and not recommended.
nessus_syn_scanner. global_throughput.max	Sets the max number of SYN packets that Nessus will send per second during its port scan (no matter how many hosts are scanned in parallel). Adjust this setting based on the sensitivity of the remote device to large numbers of SYN packets.
non_simult_ports	Specifies ports against which two plugins cannot not be run simultaneously.
optimize_test	Optimize the test procedure. Changing this to “no” will cause scans to take longer and typically generate more false positives.
paused_scan_timeout	Kill a paused scan after the specified number of minutes (0 for no timeout).
plugin_timeout	Kill the plugin after a specified number of second (0 for no timeout).

plugin_upload	Designate if admin users may upload plugins.
plugins_timeout	Maximum lifetime of a plugin's activity (in seconds).
port_range	Range of the ports the port scanners will scan. Can use keywords "default" or "all", as well as a comma delimited list of ports or ranges of ports.
purge_plugin_db	Determines if Nessus will purge the plugin database at each update. This directs Nessus to remove, re-download, and re-build the plugin database for each update. Choosing yes will cause each update to be considerably slower.
qdb_mem_usage	Directs Nessus to use more or less memory when idle. If Nessus is running on a dedicated server, setting this to "high" will use more memory to increase performance. If Nessus is running on a shared machine, settings this to "low" will use considerably less memory, but at the price of a moderate performance impact.
reduce_connections_on_congestion	Reduce the number of TCP sessions in parallel when the network appears to be congested.
report_crashes	Anonymously report crashes to Tenable.
rules	Location of the Nessus Rules file (**`nessusd.rules`**).  The **`nessusd.rules`** file applies to Nessus administrative users too.
safe_checks	Safe checks rely on banner grabbing rather than active testing for a vulnerability.
save_knowledge_base	Save the knowledge base on disk for later use.
silent_dependencies	If enabled, the list of plugin dependencies and their output are not included in the report. A plugin may be selected as part of a policy that depends on other plugins to run. By default, Nessus will run those plugin dependencies, but will not include their output in the report. Setting this option to **no** will cause both the selected plugin, and any plugin dependencies to all appear in the report.
slice_network_addresses	If this option is set, Nessus will not scan a network incrementally (10.0.0.1, then 10.0.0.2, then 10.0.0.3, and so on) but will attempt to slice the workload throughout the whole network (e.g., it will scan 10.0.0.1, then 10.0.0.127, then 10.0.0.2, then 10.0.0.128, and so on).
source_ip	In the case of a multi-homed system with different IPs on the same subnet, this option tells the Nessus scanner which NIC/IP to use for the tests. If multiple IPs are provided, Nessus will cycle through them whenever it performs a connection.
ssl_cipher_list	Make sure only "strong" SSL ciphers are used when connecting to port 1241. Supports the keyword "strong" or the general OpenSSL designations as listed at http://www.openssl.org/docs/apps/ciphers.html.
stop_scan_on_disconnect	Stop scanning a host that seems to have been disconnected during the scan.
stop_scan_on_hang	Stop a scan that seems to be hung.

throttle_scan	Throttle scan when CPU is overloaded.
use_kernel_congestion_detection	Use Linux's TCP congestion messages to scale back scan activity as required.
www_logfile	Location where the Nessus Web Server (user interface) log is stored.
xmlrpc_idle_session_timeout	XMLRPC Idle Session Timeout in minutes. (0 for no timeout).
xmlrpc_listen_port	Port for the Nessus Web Server to listen to (new XMLRPC protocol).

By default, **`report_crashes`** is set to "yes". Information related to a crash in Nessus will be sent to Tenable to help debug issues and provide the highest quality software possible. No personal or system-identifying information is sent to Tenable. This setting may be set to "no" by a Nessus admin user.

Configuring Nessus with Custom SSL Certificate

The default installation of Nessus uses a self-signed SSL certificate. When first using the web interface to access the Nessus scanner, your web browser will display an error indicating the certificate is not trusted:

To avoid browser warnings, a custom SSL certificate specific to your organization can be used. During the installation, Nessus creates two files that make up the certificate: **`servercert.pem`** and **`serverkey.pem`**. These files must be replaced with certificate files generated by your organization or a trusted Certificate Authority (CA).

Before replacing the certificate files, stop the Nessus server. Replace the two files and re-start the Nessus server. Subsequent connections to the scanner should not display an error if the certificate was generated by a trusted CA.

The following table lists the location of the certificate files based on the operating system:

Operating System	Certificate File Locations
Linux	`/opt/nessus/com/nessus/CA/servercert.pem` `/opt/nessus/var/nessus/CA/serverkey.pem`
FreeBSD	`/usr/local/nessus/com/nessus/CA/servercert.pem` `/usr/local/nessus/var/nessus/CA/serverkey.pem`
Windows Vista and later	`C:\ProgramData\Tenable\Nessus\nessus\CA\`
Mac OS X	`/Library/Nessus/run/com/nessus/CA/servercert.pem` `/Library/Nessus/run/var/nessus/CA/serverkey.pem`

Nessus 6 supports SSL certificate chains.

You can also visit `https://[IP address]:8834/getcert` to install the root CA in your browser, which will remove the warning.

To set up an intermediate certificate chain, a file named **`serverchain.pem`** must be placed in the same directory as the **`servercert.pem`** file. This file contains the 1-n intermediate certificates (concatenated public certificates) necessary to construct the full certificate chain from the Nessus server to its ultimate root certificate (one trusted by the user's browser).

Authenticating To Nessus with SSL Certificate

SSL Client Certificate Authentication

Nessus supports use of SSL client certificate authentication. This allows use of SSL client certificates, smart cards, and CAC authentication when the browser is configured for this method.

Nessus allows for password-based or SSL Certificate authentication methods for user accounts. When creating a user for SSL certificate authentication, the **`nessuscli mkcert-client`** utility is used through the command line on the Nessus server.

Configure Nessus for Certificates

The first step to allow SSL certificate authentication is to configure the Nessus web server with a server certificate and CA. This process allows the web server to trust certificates created by the Certificate Authority (CA) for authentication purposes. Generated files related to certificates must be owned by `root:root`, and have the correct permissions by default.

1. (Optional) Create a new custom CA and server certificate for the Nessus server using the **`nessuscli mkcert`** command at the command line. This will place the certificates in their correct directories.

When prompted for the hostname, enter the DNS name or IP address of the server in the browser such as `https://hostname:8834/` or `https://ipaddress:8834/`. The default certificate uses the hostname.

2. If a CA certificate is to be used instead of the Nessus generated one, make a copy of the self-signed CA certificate using the appropriate command for your OS:

   Linux/Unix:
   `# cp /opt/nessus/com/nessus/CA/cacert.pem /opt/nessus/com/nessus/CA/ORIGcacert.pem`

Windows Vista and later:
C:\> copy \ProgramData\Tenable\Nessus\nessus\CA\cacert.pem
C:\ProgramData\Tenable\Nessus\nessus\CA\ORIGcacert.pem

3. If the certificates to be used for authentication are created by a CA other than the Nessus server, the CA certificate must be installed on the Nessus server:

   Linux/Unix:
   Copy the organization's CA certificate to **/opt/nessus/com/nessus/CA/cacert.pem**

   Windows 7 and later:
   Copy the organization's CA certificate to **C:\ProgramData\Tenable\Nessus\nessus\CA\cacert.pem**

4. Configure the Nessus server for certificate authentication. Once certificate authentication is enabled, login using a username and password is disabled.

   Linux/Unix:
   # **/opt/nessus/sbin/nessuscli fix --set force_pubkey_auth=yes**

   Windows:
   C:\> **\program files\Tenable\Nessus\nessuscli fix --set force_pubkey_auth=yes**

5. Once the CA is in place and the **force_pubkey_auth** setting is enabled, restart the Nessus services with the **service nessusd restart** command.

After Nessus has been configured with the proper CA certificate(s), users may log in to Nessus using SSL client certificates, Smart Cards, and CACs.

Create Nessus SSL Certificates for Login

To log in to a Nessus server with SSL certificates, the certificates must be created with the proper utility. For this process, the **nessuscli mkcert-client** command-line utility is used on the system. The six questions asked are to set defaults for the creation of users during the current session. These include certificate lifetime, country, state, location, organization, and organizational unit. The defaults for these options may be changed during the actual user creation if desired. The user(s) will then be created one at a time as prompted. At the end of the process the certificates are copied appropriately and are used to log in to the Nessus server.

1. On the Nessus server, run the **nessuscli mkcert-client** command.

   Linux/Unix:
   # **/opt/nessus/sbin/nessuscli mkcert-client**

   Windows (Run as a local Administrator user):
   C:\> **\Program Files\Tenable\Nessus\nessuscli mkcert-client**

2. Fill in the fields as prompted. The process is identical on a Linux/Unix or Windows server.

```
Do you want to register the users in the Nessus server as soon as you create their
      certificates ? [n]: y

--------------------------------------------------------------------------------
                        Creation Nessus SSL client Certificate
--------------------------------------------------------------------------------

This script will now ask you the relevant information to create the SSL
client certificates for Nessus.
Client certificate life time in days [365]:
```

```
Your country (two letter code) [US]:
Your state or province name [NY]: MD
Your location (e.g. town) [New York]: Columbia
Your organization []: Content
Your organizational unit []: Tenable
**********
We are going to ask you some question for each client certificate
If some question have a default answer, you can force an empty answer by entering a
       single dot '.'
*********
User #1 name (e.g. Nessus username) []: squirrel
Should this user be administrator?  [n]: y
Country (two letter code) [US]:
State or province name [MD]:
Location (e.g. town) [Columbia]:
Organization [Content]:
Organizational unit [Tenable]:
e-mail []:

User rules
----------
nessusd has a rules system which allows you to restrict the hosts that firstuser has
       the right to test. For instance, you may want him to be able to scan his own
       host only.

Enter the rules for this user, and enter a BLANK LINE once you are done:
(the user can have an empty rules set)

User added to Nessus.
Another client certificate?  [n]:
Your client certificates are in C:\Users\admin\AppData\Local\Temp\nessus-0000040e
You will have to copy them by hand
```

The client certificates will be placed in the temporary directory in Nessus: **/opt/nessus/var/nessus/tmp/** in Linux, **/Library/Nessus/run/var/nessus/tmp/** in Mac OS X, and **C:\programdata\tenable\nessus\tmp** in Windows.

Windows installations of Nessus do not come with “man” pages (local manual instructions). Consult the Tenable Support Portal for additional details on commonly used Nessus executables.

3. There will be two files created in the temporary directory, for example, **cert_squirrel.pem** and **key_squirrel.pem** (where “squirrel” is the hostname of the system used in this example). These files must be combined and exported into a format that may be imported into the web browser such as **.pfx**. This may be accomplished with the **openssl** program and the following command:

   ```
   # openssl pkcs12 -export -out combined_squirrel.pfx -inkey key_squirrel.pem -in
   cert_squirrel.pem -chain -CAfile /opt/nessus/com/nessus/CA/cacert.pem -passout
   pass: 'SecretWord' -name 'Nessus User Certificate for: squirrel'
   ```

   The resulting file **combined_squirrel.pfx** will be created in the directory from which the command is launched. This file must then be imported into the web browser’s personal certificate store.

Enable Connections with Smart Card or CAC Card

Once the CAcert for the smart card, CAC, or similar device has been put in place, corresponding users must be created to match within Nessus. During this process, the users created must match the CN used on the card with which the user will use to connect.

1. On the Nessus server, run the **nessus-mkcert-client** command.

   Linux/Unix:
   ```
   # /opt/nessus/sbin/nessuscli mkcert-client
   ```

   Windows (Run as a local Administrator user):
   ```
   C:\> \Program Files\Tenable\Nessus\nessuscli.exe mkcert-client
   ```

2. Fill in the fields as prompted. The process is identical on a Linux/Unix or Windows server. The user name must match the CN supplied by the certificate on the card.

```
Do you want to register the users in the Nessus server as soon as you create their
certificates ? [n]: y

-------------------------------------------------------------------------------
                        Creation Nessus SSL client Certificate
-------------------------------------------------------------------------------

This script will now ask you the relevant information to create the SSL
client certificates for Nessus.
Client certificate life time in days [365]:
Your country (two letter code) [US]:
Your state or province name [NY]: MD
Your location (e.g. town) [New York]: Columbia
Your organization []: Content
Your organizational unit []: Tenable
**********
We are going to ask you some question for each client certificate
If some question have a default answer, you can force an empty answer by entering a
single dot '.'
*********
User #1 name (e.g. Nessus username) []: squirrel
Should this user be administrator?  [n]: y
Country (two letter code) [US]:
State or province name [MD]:
Location (e.g. town) [Columbia]:
Organization [Content]:
Organizational unit [Tenable]:
e-mail []:

User rules
----------
nessusd has a rules system which allows you to restrict the hosts that firstuser has
the right to test. For instance, you may want him to be able to scan his own host
only.

Enter the rules for this user, and enter a BLANK LINE once you are done:
(the user can have an empty rules set)

User added to Nessus.
Another client certificate?  [n]:
```

```
Your client certificates are in C:\Users\admin\AppData\Local\Temp\nessus-0000040e
You will have to copy them by hand
```

Client certificates are created in a randomized temporary directory appropriate to the system. The temporary directory will be identified on the line beginning with “Your client certificates are in”. For the use of card authentication, these certificates are not needed and may be deleted.

3. Once created, a user with the proper card may access the Nessus server and authenticate automatically once their PIN or similar secret is provided.

Connect with Certificate or Card Enabled Browser

The following information is provided with the understanding that your browser is configured for SSL certificate authentication. This includes the proper trust of the CA by the web browser. Please refer to your browser’s help files or other documentation to configure this feature.

The process for certificate login begins when a user connects to Nessus.

1. Launch a browser and navigate to the Nessus server.
2. The browser will present a list of available certificate identities to select from:

3. Once a certificate has been selected, a prompt for the PIN or password for the certificate is presented (if required) to access your certificate. When the PIN or password is successfully entered, the certificate will be available for the current session with Nessus.

4. Upon navigating to the Nessus web interface, the user may briefly see the username and password screen followed by an automatic login as the designated user. The Nessus user interface may be used normally.

If you log out of the session, you will be presented with the standard Nessus login screen. If you wish to log in again with the same certificate, refresh your browser. If you need to use a different certificate, you must restart your browser session.

Nessus without Internet Access

This section describes the steps to register your Nessus scanner, install the Activation Code, and receive the latest plugins when your Nessus system does not have direct access to the Internet.

Activation Codes retrieved using the off-line process described below are tied to the Nessus scanner used during the off-line update process. You cannot use the downloaded plugin package with another Nessus scanner.

Begin by following the instructions provided by Nessus. When it requests an Activation Code, enter “Offline” as instructed.

Generate a Challenge Code

You must retrieve your Activation Code from either your Tenable Support Portal account for Nessus or your Nessus Home registration email.

Note that you can only use one Activation Code per scanner. If the scanners are managed by SecurityCenter, no activation code is needed.

Once you have the Activation Code, run the following command on the system running Nessus:

Windows:
```
C:\Program Files\Tenable\Nessus> nessuscli.exe fetch --challenge
```

Linux:
```
# /opt/nessus/sbin/nessuscli fetch --challenge
```

FreeBSD:
```
# /usr/local/nessus/bsin/nessuscli fetch --challenge
```

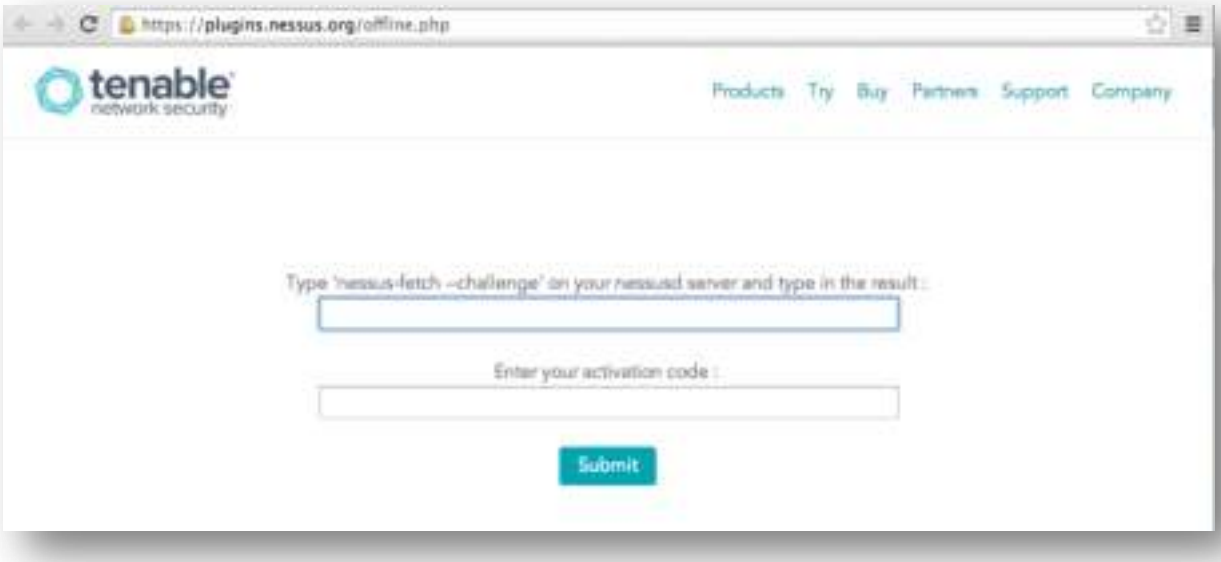
Mac OS X:
```
# /Library/Nessus/run/sbin/nessuscli fetch --challenge
```

This will produce a string called a “challenge code” that looks like the following:

```
569ccd9ac72ab3a62a3115a945ef8e710c0d73b8
```

Obtain and Install Up-to-date Plugins

Next, go to https://plugins.nessus.org/offline.php and copy and paste the “challenge” string as well as the Activation Code that you received previously into the appropriate text boxes:



This will produce a URL similar to the screen capture below:

This screen gives you access to download the latest Nessus plugin feed (**all-2.0.tar.gz**) along with a link to the **nessus-fetch.rc** file at the bottom of the screen.

Save this URL because you will use it every time you update your plugins, as described below.

A registration code used for offline registration cannot then be used for online registration, unless the code has been reset via the Tenable Support Portal first. However, once a scanner has been registered offline, if it has access to the Internet it will also be able to update itself online without re-registration.

Next, run the following command to register Nessus offline, and install the **nessus-fetch.rc** file to the Nessus directory on the host:

Windows 2K3:
```
C:\Program Files\Tenable\Nessus> nessuscli.exe fetch --register-offline "C:\Documents and Settings\All Users\Application Data\Tenable\Nessus\conf\nessus-fetch.rc"
```

Windows 7/8/2008/2012:
```
C:\Program Files\Tenable\Nessus> nessuscli.exe fetch --register-offline "C:\ProgramData\Tenable\Nessus\conf\nessus-fetch.rc"
```

Linux:
```
# /opt/nessus/sbin/nessuscli fetch --register-offline /opt/nessus/etc/nessus/nessus-fetch.rc
```

FreeBSD:
```
# /usr/local/nessus/sbin/nessuscli fetch --register-offline /usr/local/nessus/etc/nessus/nessus-fetch.rc
```

Mac OS X:
```
# /Library/Nessus/run/bin/nessuscli fetch --register-offline /Library/Nessus/run/etc/nessus/nessus-fetch.rc
```

Note that, by default, Nessus will attempt to update its plugins every 24 hours after you have registered it. If you do not want this online update attempted, edit the "**auto_update**" setting to "**no**" under the "**Configuration**" -> "**Advanced**" menu.

Perform this step each time you perform an offline update of your plugins.

Once downloaded, move the **all-2.0.tar.gz** file to the Nessus directory. Next, instruct Nessus to process the plugin archive:

Windows:
```
C:\Program Files\Tenable\Nessus> nessuscli.exe update all-2.0.tar.gz
```

Unix and Mac OS X (modify path for your installation):
```
# /opt/nessus/sbin/nessuscli update all-2.0.tar.gz
```

Once processed, Nessus must be restarted for the changes to take effect. Consult the "Nessus Service Manipulation via Windows CLI" or "Start/Stop the Nessus Daemon" (Unix) sections for details on performing a restart.

Once the plugins have been installed, you do not need to keep the **all-2.0.tar.gz** file. However, Tenable recommends that you retain the latest version of the downloaded plugin file in case it is needed again.

Now, you will have the latest plugins available. Each time you wish to update your plugins while not having Internet access, you must go to the provided URL, obtain the `tar/gz` file, copy it to the system running Nessus, and repeat the process above.

Using and Managing Nessus from the Command Line

Nessus Major Directories

The following table lists the installation location and primary directories used by Nessus on *nix/Linux:

Nessus Home Directory	Nessus Sub-Directories	Purpose
Unix Distributions		
Red Hat, SuSE, Debian, Ubuntu: `/opt/nessus`	`./etc/nessus/`	Configuration files
	`./var/nessus/users/<username>/kbs/`	User knowledgebase saved on disk
FreeBSD: `/usr/local/nessus`	`./lib/nessus/plugins/`	Nessus plugins
Mac OS X: `/Library/Nessus/run`	`./var/nessus/logs/`	Nessus log files

The following table lists the installation location and primary directories used by Nessus on Windows:

Nessus Home Directory	Nessus Sub-Directories	Purpose
Windows		
`\Program Files\Tenable\Nessus`	`\conf`	Configuration files
	`\data`	Stylesheet templates
	`\nessus\plugins`	Nessus plugins
	`\nessus\users\<username>\kbs`	User knowledgebase saved on disk
	`\nessus\logs`	Nessus log files

Create and Manage Nessus Users with Account Limitations

A single Nessus scanner can support a complex arrangement of multiple users. For example, an organization may need multiple personnel to have access to the same Nessus scanner but have the ability to scan different IP ranges, allowing only some personnel access to restricted IP ranges.

Note that the following is only available for Nessus, not Nessus Enterprise.

The following example highlights the creation of a second Nessus user with password authentication and user rules that restrict the user to scanning a class B subnet, 172.20.0.0/16. For further examples and the syntax of user rules please see the Nessus v6 Command Line Reference guide for **nessuscli**.

```
# /opt/nessus/sbin/nessuscli adduser
Login : tater-nessus
Login password :
Login password (again) :
Do you want this user to be a Nessus 'admin' user ? (can upload plugins, etc...) (y/n)
      [n]: y
User rules
----------
nessusd has a rules system which allows you to restrict the hosts
that tater-nessus has the right to test. For instance, you may want
him to be able to scan his own host only.

Please see the nessus-adduser manual for the rules syntax

Enter the rules for this user, and enter a BLANK LINE once you are done :
(the user can have an empty rules set)
accept 172.20.0.0/16
deny 0.0.0.0/0



Login             : tater-nessus
Password          : ***********
This user will have 'admin' privileges within the Nessus server
Rules             :
accept 172.20.0.0/16
deny 0.0.0.0/0
Is that ok ? (y/n) [y] y
User added
```

Nessusd Command Line Options

In addition to running the **nessusd** server, there are several command line options that can be used as required. The following table contains information on these various optional commands.

Option	Description
-c <config-file>	When starting the **nessusd** server, this option is used to specify the server-side **nessusd** configuration file to use. It allows for the use of an alternate configuration file instead of the standard **/opt/nessus/etc/nessus/nessusd.db** (or **/usr/local/nessus/etc/nessus/nessusd.db** for FreeBSD).
-a <address>	When starting the **nessusd** server, this option is used to tell the server to only listen to connections on the address **<address>** that is an IP, not a machine name. This option is useful if you are running **nessusd** on a gateway and if you do not want people on the outside to connect to your **nessusd**.
-S <ip[,ip2,...]>	When starting the **nessusd** server, force the source IP of the connections established by Nessus during scanning to <ip>. This option is only useful if you have a multi-homed machine with multiple public IP addresses that you would like to use instead of the default one. For this setup to work, the host running **nessusd** must have multiple

	NICs with these IP addresses set.
-D	When starting the **nessusd** server, this option will make the server run in the background (daemon mode).
-v	Display the version number and exit.
-l	Display the plugin feed license information and exit.
-h	Show a summary of the commands and exit.
--ipv4-only	Only listen on IPv4 socket.
--ipv6-only	Only listen on IPv6 socket.
-q	Operate in “quiet” mode, suppressing all messages to **stdout**.
-R	Force a re-processing of the plugins.
-t	Check the timestamp of each plugin when starting up to only compile newly updated plugins.
-K	Set a master password for the scanner.

If a master password is set, Nessus will encrypt all policies and any credentials contained in them with the user-supplied key (considerably more secure than the default key). If a password is set, the web interface will prompt you for the password during startup.

WARNING: If the master password is set and lost, it cannot be recovered by your administrator or Tenable Support.

On Nessus in Unix and Mac OS X, **nessus-service** is a wrapper for **nessusd**. Tenable recommends using the **nessus-service** on Unix and Mac OS X implementations instead of calling **nessusd** directly.

An example of the command line usage is shown below:

Linux:

```
# /opt/nessus/sbin/nessus-service [-vhD] [-c <config-file>] [-p <port-number>] [-a
<address>] [-S <ip[,ip,...]>]
```

FreeBSD:

```
# /usr/local/nessus/sbin/nessus-service [-vhD] [-c <config-file>] [-p <port-number>] [-a
<address>] [-S <ip[,ip,...]>]
```

Mac OS X:

```
# Library/Nessus/run/sbin/nessus-service [-vhD] [-c <config-file>] [-p <port-number>] [-a
<address>] [-S <ip[,ip,...]>]
```

Nessus Service Manipulation via Windows CLI

Nessus can also be started or stopped from the command line. Note that the command window must be called with Administrative privileges:

```
C:\Windows\system32>net stop "Tenable Nessus"
The Tenable Nessus service is stopping.
The Tenable Nessus service was stopped successfully.


C:\Windows\system32>net start "Tenable Nessus"
The Tenable Nessus service is starting.
The Tenable Nessus service was started successfully.


C:\Windows\system32>
```

Working with SecurityCenter

SecurityCenter Overview

Tenable's SecurityCenter is a web-based management console that unifies the process of vulnerability detection and management, event and log management, compliance monitoring, and reporting on all of the above. SecurityCenter enables efficient communication of security events to IT, management, and audit teams.

SecurityCenter supports the use of multiple Nessus scanners in concert for the scanning of virtually any size network on a periodic basis. Using the Nessus API (a custom implementation of the XML-RPC protocol), SecurityCenter communicates with associated Nessus scanners to send scanning instructions and receive results.

SecurityCenter enables multiple users and administrators with different security levels to share vulnerability information, prioritize vulnerabilities, show which network assets have critical security issues, make recommendations to system administrators for fixing these security issues and to track when the vulnerabilities are mitigated. SecurityCenter also receives data from many leading intrusion detection systems such as Snort and ISS via the Log Correlation Engine (LCE).

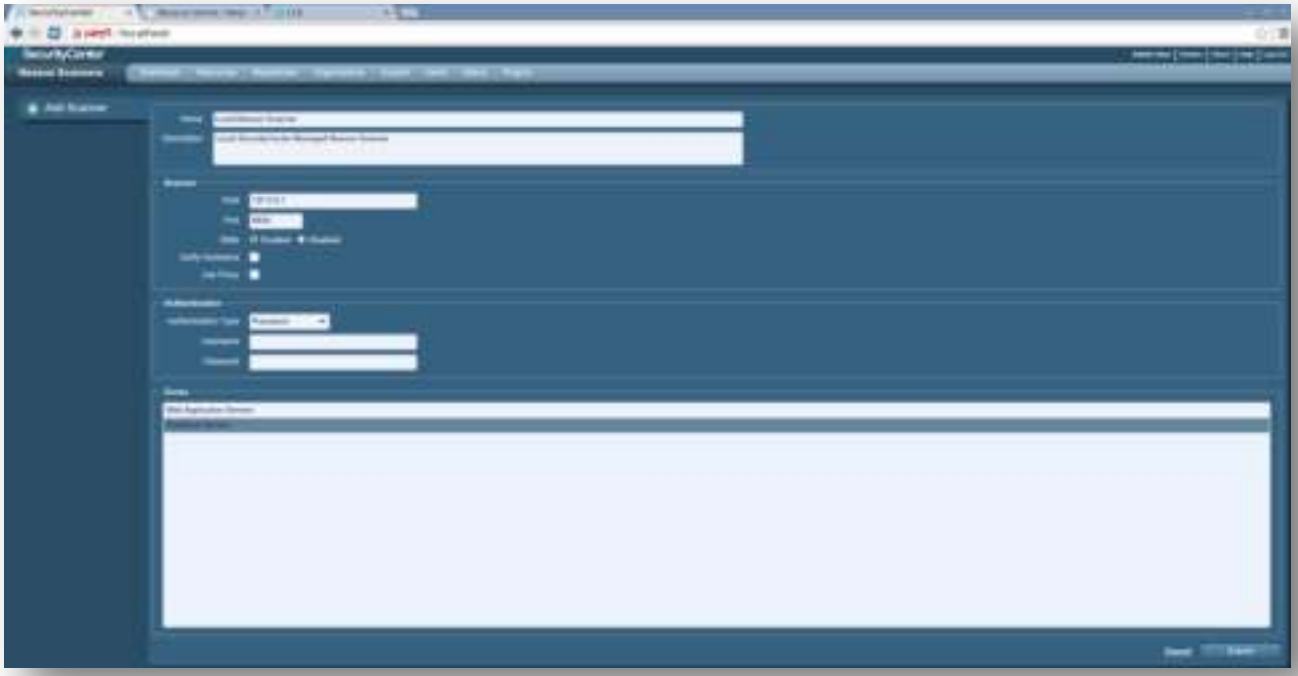
SecurityCenter can also receive passive vulnerability information from Tenable's Passive Vulnerability Scanner (PVS) such that end users can discover new hosts, applications, vulnerabilities, and intrusions without the need for active scanning with Nessus.

Note that if Nessus Enterprise manages secondary scanners, those scanners will **not** be available to SecurityCenter. Any secondary scanners will remain exclusive to Nessus Enterprise.

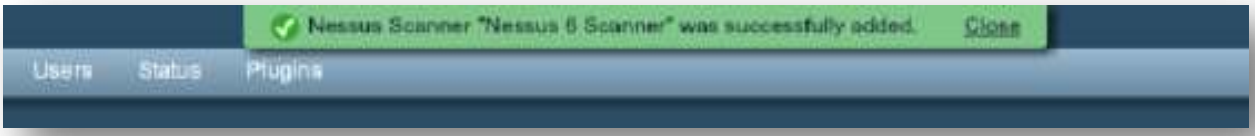
Configuring SecurityCenter to work with Nessus

The SecurityCenter administration interface is used to configure access and control of any Nessus scanner that is version 4.2.x or higher. Click the "**Resources**" tab and then click "**Nessus Scanners**". Click "**Add**" to open the "**Add Scanner**" dialog. The Nessus scanner's IP address or hostname, Nessus port (default: 8834), authentication type (created while configuring Nessus), and administrative login ID and password or certificate information are required. The password fields are not available if "**SSL Certificate**" authentication is selected. The ability to Verify Hostname is provided to check the CommonName (CN) of the SSL certificate presented by the Nessus server. The state of the Nessus scanner may be set to Enabled or Disabled as needed, the use of a proxy may be selected, and selection of Scan Zones for the Nessus scanner to be assigned to can be selected.

An example screen capture of the SecurityCenter 4.8 "**Add Scanner**" page is shown below:



After successfully adding the scanner, the following banner is displayed:



For more information on integrating Nessus and SecurityCenter, please refer to the "SecurityCenter Administration Guide" available on the Tenable Support Portal.

Host-Based Firewalls

If your Nessus server is configured with a local firewall such as the default Windows firewall, or any other installed third-party firewall software, it is required that connections be opened from SecurityCenter's IP address. By default, TCP port 8834 is used to communicate with SecurityCenter. If a connection is not currently allowed for TCP port 8834 an exception will have to be made in the firewall to allow access.

Nessus Windows Troubleshooting

Installation /Upgrade Issues

Issue: The nessusd.messages log indicates nessusd started, but it hasn't.

Solution: The "nesssud <version> started" message only indicates that the `nessusd` program was executed. The message "nessusd is ready" indicates that the Nessus server is running and ready to accept connections.

Issue: I am receiving the following error when I try to install Nessus Windows:

"1607: Unable to install InstallShield Scripting Runtime"

Solution: This error code can be produced if the Windows Management Instrumentation (WMI) service has been disabled for any reason. Please verify that the service is running.

If the WMI service is running, then this may be a problem between the Microsoft Windows Operating System settings and the InstallShield product that is used for installing and removing Nessus Windows. There are knowledge base articles from both Microsoft and InstallShield that detail potential causes and the resolution of the issue.

- Microsoft Knowledge Base Article ID 910816:
  http://support.microsoft.com/?scid=kb;en-us;910816
- InstallShield Knowledge Base Article ID Q108340:
  http://consumer.installshield.com/kb.asp?id=Q108340

Scanning Issues

Issue: A virus scan of my system reports a large number of viruses or malware in Nessus Windows.

Solution: Certain anti-virus applications may show some of the Nessus plugins as viruses. Exclude the plugins directory from virus scans since there are no executable programs in this directory. For more information on using Nessus in conjunction with Anti Malware software, consult the "Nessus 5 and Antivirus" document.

Issue: I am scanning an unusual device, such as a RAID controller, and the scan is aborted because Nessus has detected it as a printer.

Solution: Disable "Safe Checks" in the scan policy before scanning the device. A scan of a printer will usually result in the printer needing to be restarted, therefore when "Safe Checks" is set, devices detected as printers are not scanned.

Issue: SYN scans do not appear to wait for the port connection to be established in Nessus Windows.

Solution: This is correct in that the SYN scan does not establish a full TCP connect, however it does not change the scan results.

For Further Information

Tenable has produced a variety of documents detailing Nessus' installation, deployment, configuration, user operation, and overall testing:

- **Nessus 6.1 Installation and Configuration Guide** – step by step walk through of installation and configuration
- **Nessus 6.1 User Guide** – how to configure and operate the Nessus User Interface
- **Nessus Enterprise 6.1 User Guide** – how to configure and operate the Nessus User Interface for Nessus Enterprise
- **Nessus Enterprise Cloud User Guide** – describes use of Nessus Enterprise Cloud and includes subscription and activation, vulnerability scanning, compliance reporting, and Nessus Enterprise Cloud support
- **Nessus v6 Command Line Reference** – describes the command line tools of Nessus
- **Nessus Credentialed Checks for Unix and Windows** – information on how to perform authenticated network scans with the Nessus vulnerability scanner
- **Nessus Compliance Checks** – high-level guide to understanding and running compliance checks using Nessus and SecurityCenter
- **Nessus Compliance Checks Reference** – comprehensive guide to Nessus Compliance Check syntax
- **Nessus v2 File Format** – describes the structure for the .nessus file format, which was introduced with Nessus 3.2 and NessusClient 3.2
- **Nessus 5.0 REST Protocol Specification** – describes the REST protocol and interface in Nessus
- **Nessus and Antivirus** – outlines how several popular security software packages interact with Nessus, and provides tips or workarounds to allow the software to better co-exist without compromising your security or hindering your vulnerability scanning efforts
- **Nessus and Mobile Device Scanning** – describes how Nessus integrates with Microsoft Active Directory and mobile device management servers to identify mobile devices in use on the network
- **Nessus and Scanning Virtual Machines** – describes how Tenable Network Security's Nessus vulnerability scanner can be used to audit the configuration of virtual platforms as well as the software that is running on them
- **Strategic Anti-malware Monitoring with Nessus, PVS, and LCE** – describes how Tenable's USM platform can detect a variety of malicious software and identify and determine the extent of malware infections
- **Patch Management Integration** – document describes how Nessus and SecurityCenter can leverage credentials on the Red Hat Network Satellite, IBM TEM, Dell KACE 1000, and Microsoft WSUS and SCCM patch management systems to perform patch auditing on systems for which credentials may not be available to the Nessus scanner
- **Real-Time Compliance Monitoring** – outlines how Tenable's solutions can be used to assist in meeting many different types of government and financial regulations
- **Tenable Products Plugin Families** – provides a description and summary of the plugin families for Nessus, Log Correlation Engine, and the Passive Vulnerability Scanner
- **SecurityCenter Administration Guide**

Other online resources are listed below:

- Nessus Discussions Forum: https://discussions.nessus.org/
- Tenable Blog: http://www.tenable.com/blog
- Tenable Podcast: http://www.tenable.com/podcast
- Example Use Videos: http://www.youtube.com/user/tenablesecurity
- Tenable Twitter Feed: http://twitter.com/tenablesecurity

Please feel free to contact Tenable at support@tenable.com, sales@tenable.com, or visit our website at http://www.tenable.com/.

About Tenable Network Security

Tenable Network Security provides continuous network monitoring to identify vulnerabilities, reduce risk, and ensure compliance. Our family of products includes SecurityCenter Continuous View™, which provides the most comprehensive and integrated view of network health, and Nessus®, the global standard in detecting and assessing network data.

Tenable is relied upon by more than 24,000 organizations, including the entire U.S. Department of Defense and many of the world's largest companies and governments. We offer customers peace of mind thanks to the largest install base, the best expertise, and the ability to identify their biggest threats and enable them to respond quickly.

For more information, please visit tenable.com.