



Installing the Nasuni Filer on Virtual Platforms

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Document Information

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Version 7.10
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Preface

Audience

This guide is intended for the IT administrator or person responsible for installing the Nasuni Filer on a virtual platform within a corporate network.

What's in this Book

This guide contains the following chapters:

- [Chapter 1, “Platform Considerations,” on page 1](#) provides platform specifications for installing the Nasuni Filer.
- [Chapter 2, “Installing the Nasuni Filer,” on page 11](#) explains how to install the Nasuni Filer on your network using a supported platform.
- [Chapter 3, “Configuring the Virtual Platform,” on page 23](#) explains how to configure the virtual platform to change the cache disk, the copy-on-write (COW) disk, the memory, the number of CPU cores, and pass-through disks.
- [Chapter 4, “Controlling the Nasuni Filer,” on page 37](#) explains how to control the Nasuni Filer from the virtual platform.
- [Chapter 5, “Uninstalling the Nasuni Filer,” on page 39](#) explains how to remove the Nasuni Filer from your system if you are upgrading or replacing your hardware.

Text Conventions

The following text conventions are used in this document:

Convention	Description
1. Number	Used to indicate a step in a task.
• Bullet	Used for items in a list without any particular order.
Bold	Used to give emphasis to a word. Also used for named graphical elements.
<i>Italics</i>	Used to represent options or parameters.
<u>Underline</u>	Used for hyperlinks, such as links to Web sites.
Monospace	Used to indicate pathnames, filenames, folder names, typed information, and code.

Product Documentation

Electronic Publications

Extensive documentation is available for all aspects of installing, configuring, and operating the Nasuni Filer. The latest version of each of the following documents is available in PDF format at <http://www.nasuni.com/support/documentation>.

- *Hardware Getting Started Guide*: For setting up the Nasuni Filer on the Nasuni Filer hardware appliance.
To download this guide for the NF-60, visit:
http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/Nasuni_Filer_HW_GS_Guide_NF-60.pdf
To download this guide for the NF-200, visit:
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http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/Nasuni_Filer_HW_GS_Guide_NF-600.pdf
- *Installing the Nasuni Filer on Virtual Platforms*: For installing the Nasuni Filer on a virtual machine within a corporate network. To download this guide, visit:
<http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/Installing-on-Virtual.pdf>

- *Installing the Nasuni Filer on the Azure Platform*: For installing the Nasuni Filer on the Microsoft Azure cloud virtual machine. To download this guide, visit:
<http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/Installing-on-Azure.pdf>
- *Installing the Nasuni Filer on the EC2 Platform*: For installing the Nasuni Filer on the Amazon EC2 cloud virtual machine. To download this guide, visit:
<http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/Installing-on-EC2.pdf>
- *Initial Configuration Guide*: For configuring and deploying the Nasuni Filer after the initial installation on the hardware appliance or virtual machine. To download this guide, visit:
http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/Nasuni_Filer_Initial_Configuration_Guide.pdf
- *Administration Guide*: For managing unified storage using the Nasuni Filer. To download this guide, visit:
http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/Nasuni_Filer_Administration_Guide.pdf
- *Nasuni Management Console Guide*: For managing multiple Nasuni Filers. To download this guide, visit:
<http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/NMCGuide.pdf>
- *Nasuni Management Console Quick Start Guide*: To quickly get started using the Nasuni Management Console to manage multiple Nasuni Filers. To download this guide, visit:
<http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/NMCQuickStartGuide.pdf>
- *Using Multiple Protocols*: Discusses scenarios requiring particular access to data, and how different combinations of protocols can help provide the access that clients need. To download this guide, visit:
<http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/UsingMultipleProtocols.pdf>
- *Third-Party Licensing Guide*: Listing of third-party software used in the Nasuni Filer. To download this guide, visit:
http://info.nasuni.com/hubfs/Nasuni.com-assets/Support-Docs/Nasuni_Filer_Third-Party_Licensing_Guide.pdf

Release Notes for Nasuni Documentation Set

Date (As Of)	Changes
2018-03-02	Fixed incorrect screen shot, in <i>DFS Configuration Guide</i> .

Date (As Of)	Changes
2018-02-28	<p>Added information about time to generate an encryption key, in <i>Best Practices Guide</i>, <i>Encryption Key Best Practices</i>, <i>NMC Guide</i>, <i>Recovery Guide</i>, and <i>Administration Guide</i>.</p> <p>Added considerations about MTU on the EC2 platform, in <i>Installing the Nasuni Filer on the EC2 Platform</i>.</p> <p>Noted that enabling "Snapshot Directory Access" prevents directories from being deleted, in <i>NMC Guide</i>, <i>Administration Guide</i>, and <i>Best Practices Guide</i>.</p> <p>Clarified behavior of Security indication when permission of remote volume is set to Disabled, in <i>NMC Guide</i>.</p> <p>Noted that you cannot create an internal link to folders created by using the "%U" wildcard, in several documents.</p> <p>Clarified the relative size of the COW disk, in <i>Cache Configuration Guide</i> and <i>Installing on Virtual</i>.</p> <p>Added tip on hard links with Linux and Mac OS X clients using global locking with CIFS, in <i>Administration Guide</i>.</p> <p>Updated default number of cores to 4, in <i>Initial Configuration Guide</i> and <i>Installing on Virtual</i>.</p> <p>Added tip on case-sensitive volumes and multiple volume protocols, in <i>Administration Guide</i>.</p> <p>Added tip on using Windows "net use" command, in <i>Administration Guide</i> and <i>Initial Configuration Guide</i>.</p> <p>Added details of the suggested usage, in <i>Revit Configuration Guide</i>.</p> <p>Clarified how Auto Cache works, in <i>Administration Guide</i> and <i>NMC Guide</i>.</p> <p>Specified that the user names for CIFS Administrative Users should not have the leading domain, in <i>Administration Guide</i>.</p> <p>Added tip about Embedded Host Client for installing the Nasuni Filer into VMware ESXi using the vSphere Web interface, in <i>Installing on Virtual</i>.</p> <p>Added description of backup keys, which enable recovery of Nasuni Filers that don't have owned volumes or snapshots, in <i>Administration Guide</i> and <i>Recovery Guide</i>.</p> <p>Updated procedure for installing Nasuni Filer and NMC on Microsoft Azure platform, in <i>Configuring Customer-Provided Azure Tenant for the Nasuni Filer</i>.</p>

Date (As Of)	Changes
2017-11-15	<p>Added the Device ID and Logged In fields to the Mobile Licenses table, in <i>NMC Guide</i>.</p> <p>Added description of Prioritize Snapshot feature, in <i>NMC Guide</i> and <i>Administration Guide</i>.</p> <p>Created tip for error when installing to non-default location on Hyper-V, in <i>Installing on Virtual</i>.</p> <p>Clarified when the file syncs occur related to Global Locking, in <i>Cache Configuration Guide</i>, <i>Best Practices Guide</i>, <i>Global Locking Guide</i>, and <i>Administration Guide</i>.</p> <p>Clarified processing when a Nasuni Filer goes under the control of a Nasuni Management Console, in <i>NMC Guide</i> and <i>Administration Guide</i>.</p> <p>Added details about how certain types of loads can affect syncs, in <i>NMC Guide</i>, <i>Merge Conflicts Guide</i>, and <i>Administration Guide</i>.</p> <p>Warned that downloading large files from the NMC can take a long time, in <i>NMC Guide</i>.</p> <p>Added warning against saving encryption key files to volume, in <i>Best Practices Guide</i>, <i>NMC Guide</i>, <i>Recovery Guide</i>, and <i>Administration Guide</i>.</p> <p>Updated copyright, trademark, disclaimer, and liability statements, in most documents.</p> <p>Updated maximum Azure disk size to 4,095 GiB, in <i>Best Practices Guide</i>, <i>Cache Configuration Guide</i>, <i>Initial Configuration Guide</i>, <i>Resizing Cache Guide</i>, <i>Installing on Virtual Platforms</i>, and <i>Suggestions for VM Installation</i>.</p>
2017-10-31	<p>Added procedure for possible notification during snapshot or sync, in <i>NMC Guide</i> and <i>Administration Guide</i>.</p> <p>Added details about the Clam AntiVirus (ClamAV®) open-source antivirus engine, in <i>Best Practices Guide</i>, <i>NMC Guide</i>, <i>Third-Party Licensing Guide</i>, and <i>Administration Guide</i>.</p>

Date (As Of)	Changes
	<p>New screenshots, in <i>Installing the Nasuni Filer on the EC2 Platform</i>. Added reminders to keep COW disk in proportion to cache disk when changing the size of the cache disk, in <i>Cache Configuration</i> and several other documents.</p> <p>Selecting the “Secure transfer required” feature for an Azure Storage account does not affect the operation of the Nasuni Filer, in <i>Configuring Customer-Provided Azure Storage for the Nasuni Filer</i> and <i>Installing Nasuni Filer on Customer-Provided Azure Storage Getting Started Guide</i>.</p> <p>Corrected the default number of cores for a Nasuni Filer, in <i>Best Practices Guide</i>, <i>Initial Configuration Guide</i>, and <i>Installing on Virtual Platforms</i>. Clarified the processing for recovery after resetting the administrative account, in <i>Recovery Guide</i>, <i>Administration Guide</i>, and <i>NMC Guide</i>. Clarified the prerequisites for performing the Side Load procedure, in <i>Recovery Guide</i>, <i>Administration Guide</i>, and <i>Side Load Guide</i>.</p> <p>Clarified the default outbound Quality of Service, in <i>Best Practices Guide</i>, <i>Cache Configuration Guide</i>, <i>Administration Guide</i>, and <i>NMC Guide</i>. Added material about enabling Auditing to help mitigate ransomware, in <i>Best Practices Guide</i>, <i>Administration Guide</i>, and <i>NMC Guide</i>. Clarified meaning of Restrict Anonymous setting for CIFS, in <i>Administration Guide</i> and <i>NMC Guide</i>.</p>
2017-09-29	<p>Added material on Cloud I/O and Cloud Credentials, in <i>Administration Guide</i> and <i>NMC Guide</i>.</p> <p>Added discussion of chunk size and related topics, in <i>Best Practices Guide</i>, <i>Cache Configuration Guide</i>, <i>Administration Guide</i>, and <i>NMC Guide</i>.</p> <p>Rewrote section on General CIFS Settings to clarify processing in different situations, in <i>Administration Guide</i> and <i>NMC Guide</i>.</p> <p>Added details about how long notifications are retained, in <i>Administration Guide</i> and <i>NMC Guide</i>.</p> <p>Added procedure for obtaining JSON format of shares configuration in NMC, in <i>NMC Guide</i>.</p> <p>Clarified use of DFS for failover, in <i>DFS Configuration and Best Practices Guide</i>.</p> <p>Reconciled the recovery procedures, in <i>Administration Guide</i> and <i>Recovery Guide</i>.</p>

Date (As Of)	Changes
	<p>Removed mentions of default volume and default CIFS share, in <i>Best Practices Guide</i>, <i>Best Practices Guide</i>, and <i>Administration Guide</i>. Clarified best use cases for Side Load procedure, in <i>Side Load Feature</i>. Added warnings against restoring a virtual machine from a virtual machine snapshot or backup, in <i>Cache Configuration Guide</i> and <i>Installing on Virtual Platforms</i>.</p> <p>Added information about how permissions affect the ability to download files, in <i>Administration Guide</i> and <i>NMC Guide</i>. Added procedure for SMB3 encryption, in <i>Administration Guide</i>, <i>Security Features</i>, and <i>NMC Guide</i>. Added instructions for “Snapshot ran out of internal space” error, in <i>Administration Guide</i> and <i>Best Practices Guide</i>.</p> <p>Updated the supported Cleversafe/IBM Cloud Object Storage version to 3.8.3. Added details of the use of encryption keys with remote volumes, in <i>Encryption Key Best Practices</i>. Clarified details of NTFS Exclusive Mode and NTFS Compatible Mode, in <i>Administration Guide</i> and others.</p>
2017-08-31	<p>Formatting and pagination, in <i>Data API</i> doc. Clarified NMC procedure for changing SMB protocol. Added procedure for installing NMC using Azure Resource Manager, in <i>Installing the Nasuni Filer on the Azure Platform</i>.</p> <p>Clarified that displayed size might differ from external size indications, in <i>Administration Guide</i> and other documents. Clarified the distinction between “private cloud”, “customer-controlled public cloud”, “BYOC”, and “public cloud” in many docs. Changed name of <i>Private-Cloud-Getting-Started-Guide-Azure</i> to <i>GS-Guide-for-Azure-BYOC</i>. Added link to NASUNI-FILER-MIB for SNMP support, in <i>Administration Guide</i>.</p>

Date (As Of)	Changes
	<p>Added NTFS Exclusive Mode to available permissions for volume, in <i>Administration Guide</i> and other documents.</p> <p>Created <i>Upgrading Nasuni Filers to Use Case-Insensitive Volumes</i> procedure.</p> <p>Clarified that changes to the Snapshot Retention setting go into effect when the next snapshot occurs, and that it is normal to temporarily see more snapshots than the Snapshot Retention setting would suggest, in <i>Administration Guide</i> and <i>NMC Guide</i>.</p> <p>Added detailed instructions in volume creation procedures about preferring case-insensitive CIFS volumes, in <i>Administration Guide</i>, <i>Best Practices Guide</i>, and <i>Worksheets for Configuring NMC, Nasuni Filers, Volumes, and Shares</i>.</p> <p>Added best practices for handling historical SIDs before adding data, in <i>Administration Guide</i>, <i>Best Practices Guide</i>, and <i>NMC Guide</i>.</p> <p>Removed references to <code>fsck</code>, since it is unnecessary with OS7, in <i>Administration Guide</i>, <i>NMC Guide</i>, <i>Recovery Guide</i>, <i>Installing on Virtual</i>.</p>

Chapter 1: Platform Considerations

Overview

This chapter includes information about virtual platforms for the Nasuni Filer.

In this chapter

- [“Nasuni NAS” on page 1](#)
- [“Key Terms” on page 3](#)
- [“Nasuni Filer Specifications” on page 4](#)

Nasuni NAS

Nasuni delivers an advanced storage solution using a cloud infrastructure. The core technology is a next-generation storage controller – the Nasuni Filer – that offers the security and performance of traditional storage, while adding unlimited scalability, automatic offsite protection, and global multi-site access to files. The Nasuni system is managed through a single, small-footprint point of control within the enterprise’s data center.

The Nasuni Filer is an on-premises storage device supporting NFS, CIFS, FTP/SFTP, iSCSI, and HTTP/REST protocols. The Nasuni Filer is fully integrated with Active Directory, LDAP, Distributed File System (DFS), and Windows Previous Versions. It includes a high-performance cache and takes periodic snapshots that enable file-level restores. Its reach and capacity far exceed those of a traditional controller, however, because it does not rely only on memory and local disk to manage its data: it has the entire capacity of the cloud at its disposal. All data is deduplicated, compressed, and encrypted before storage.

Several choices are available for the back-end cloud storage component, including the following:

- Your own public cloud service from Microsoft Azure Blob Storage or Amazon AWS S3.
- Private cloud products, including Cleversafe, IBM Cloud Object Storage, EMC ViPR/ECS, and EMC Atmos.

The choices for the back-end cloud storage component are part of each customer license. Each volume has only one back-end cloud storage component.

Multi-site access enables organizations with several locations to work on a single set of shared data. Nasuni's architecture allows multiple storage controllers to have live access to the same volume of data. Organizations benefit by having a simple, safe, and secure way to share data across any number of sites. Nasuni's multi-site access enables capabilities that include:

- Secure data distribution to remote office/branch office (ROBO).
- Remote offices forwarding data to a central point.
- Two-way synchronized read-write.

Multi-site access does away with cumbersome replication schemes and slow WAN optimizers.

Nasuni Filer

Nasuni's NAS is delivered through the Nasuni Filer, a storage controller that runs in your data center and provides primary storage with built-in backup, offsite protection, and multi-site access. With your Nasuni Filer, you manage your volumes and performance using the Web-based Nasuni Filer user interface.

The Nasuni Filer is available as a virtual appliance, as a hardware appliance, and as a Microsoft Azure and Amazon EC2 virtual appliance.

Nasuni Management Console

The Nasuni Management Console enables you to monitor and manage many Nasuni Filers from one central appliance. Using the Nasuni Management Console, you can view the status of all of your managed Nasuni Filers, as well as configure their settings. Using the Nasuni Management Console, you can ensure consistent settings on all your Nasuni Filers.

Note: *If a Nasuni Filer loses internet connectivity with the Nasuni Management Console, the Nasuni Filer can still leave the Nasuni Management Console.*

Key Terms

The following terms are helpful in understanding the Nasuni Filer:

- **Nasuni Filer:** The storage controller in your data center that integrates with your infrastructure via CIFS, NFS, iSCSI, FTP/SFTP, or HTTPS/REST protocols. The Nasuni Filer can be mapped as a network drive.
- **Nasuni Filer user interface:** The Web-based graphical user interface with which you configure and manage the Nasuni Filer. The Nasuni Filer user interface is accessible with supported Web browsers including Mozilla Firefox, Internet Explorer, Safari, and Google Chrome.
- **Nasuni Management Console (NMC):** The Web-accessible appliance with which you can configure and manage multiple Nasuni Filers. The Nasuni Management Console is accessible with supported Web browsers including Mozilla Firefox, Internet Explorer, Apple Safari, and Google Chrome.
- **Cloud storage:** Internet-based, highly protected, unlimited storage.
- **Volume:** A set of files and directories (CIFS, NFS, and FTP/SFTP) or blocks of data (iSCSI).
- **Share/export:** An access point to a folder on a volume that can be shared or exported on your network. Access to a CIFS share can be customized on a user-level or group-level basis. You can create many shares or exports on a volume, for different purposes or audiences.
- **Cache:** The local storage of the Nasuni Filer. All data and metadata that is accessed regularly is kept locally in the cache. If requested data is not locally resident, it is staged into the cache and provided for the request.
- **Snapshot:** A snapshot is a complete picture of your volume at a specific point in time. Snapshots offer data protection by enabling you to recover data deleted in error or to restore an entire file system. After a snapshot has been taken and is sent to cloud storage, it is not possible to modify that snapshot.

Nasuni Filer Specifications

This section contains specifications for configuring the Nasuni Filer.

General Specifications

The following table lists general specifications for the Nasuni Filer.

Description	Value
Maximum number of owned volumes per Nasuni Filer.	8
Maximum number of files in the Nasuni Service.	Unlimited
Maximum capacity of files in the Nasuni Service.	Unlimited (might be restricted by license)
Default cache size on disk.	250 GB (VM only)
Default snapshot period.	1 hour (after last snapshot)
Maximum file size.	Available cache space at time of write
Number of cache volumes supported.	1
Minimum memory required.	4 GiB (VM only)

Initial, Recommended, and Minimum Memory

The memory allocation for a virtual machine platform (VM) is set and changed in the hypervisor. The memory allocation that is first set is the "initial memory allocation".

The "recommended memory allocation" is a suggested amount of memory. If the VM has less than the "recommended memory allocation", an alert informs the customer of the situation.

There is also a "minimum memory allocation". If the VM has less than the "minimum memory allocation", then the software does not run.

Tip: For both the Nasuni Filer and the NMC, it might be necessary to increase the memory allocation above the recommended memory allocation, depending on the workload.

For the Nasuni Filer, these values are:

- Initial memory allocation: 8 GiB
- Recommended memory allocation: 8 GiB
- Minimum memory allocation: 4 GiB

Note: The document preview feature of Nasuni Web Access requires a minimum of 8 GiB and version OS7 of the Nasuni Filer base operating system.

For the NMC, these values are:

- Initial memory allocation: 6 GiB
- Recommended memory allocation: 6 GiB
- Minimum memory allocation: 2 GiB

Supported Web Browsers

The Nasuni Filer supports the following Web browsers:

Browser	Version
Mozilla Firefox	Latest
Internet Explorer	Latest two versions
Google Chrome	Latest
Apple Safari	Latest

Supported Windows Operating Systems

The Nasuni Filer provides file sharing services to the following Windows operating systems:

Server Operating Systems

Operating System	Version	Service Packs
Windows Server 2008 R2	Standard	N/A
Windows Server 2012	Standard	N/A
Windows Server 2012 R2	Standard	N/A

Desktop Operating Systems

Operating System	Version	Service Packs
Windows 7	Professional	1
Windows 8.1	Professional	N/A
Windows 10	Professional	N/A

Supported Virtual Platforms

The Nasuni Filer runs as a virtual machine within the following virtual server platform versions:

Operating System	Version
VMware ESXi	5.5 and above (including support for virtual machine disks (VMDKs) larger than 2 TB on VMFS-5 datastores)
Windows Server	2008 R2 SP1 Hyper-V 2012 Hyper-V

Virtual Machine Requirements

The minimum or recommended virtual machine resources for running the Nasuni Filer are as follows:

Limit	Value
Minimum free disk space to run the Nasuni Filer.	352 GB (328 GiB) (includes operating system, 250 GB cache, and cache-on-write (COW) disk)
Recommended memory on a VM host.	8 GiB
Recommended Nasuni Filer Virtual Machine memory.	8 GiB
Nasuni Filer Virtual Machine cores.	4 default, 8 for optimal performance

Maximum Cache Size by Virtual Platform

The current maximum cache size for the Nasuni Filer is 500 TiB. However, each platform also has its own maximum cache size for a single cache disk. (Multiple cache disks are supported.) The following table lists the maximum cache size per single cache disk (by platform) supported by the Nasuni Filer. Visit [VMware features](#) and [Hyper-V features](#) for the most complete information.

Virtual Platform	Maximum Cache Size for a Single Cache Disk
VMware ESXi 5.5 and above NOT using VMFS-5	2 TiB
VMware ESXi 5.5 and above	62 TiB (using VMFS-5) 64 TiB (using physical Raw Disk Mapping (RDM) (aka "pass through disks"))
Microsoft Hyper-V	2 TiB (Server 2008) 500 TiB (using "pass through disks") (Server 2008) 64 TiB (using VHDX) (Server 2012) 64 TiB (Server 2012 R2)
Microsoft Azure	4,095 GiB (Nasuni Filers support the Microsoft Azure maximum size for a single disk, which is currently 4,095 GiB.)
Amazon EC2	1 TiB for hard disks, 16 TiB for SSDs

Note: Nasuni supports VMware ESXi 5.5 and above.

Note: To add cache space by configuring additional cache disks, contact Nasuni Technical Support.

Note: Note that you can configure pass-through disks on VMware and Hyper-V.

Maximum CPU Cores by Virtual Platform

The following table lists the maximum number of CPU cores (or virtual CPUs) that are supported by the Nasuni Filer.

Virtual Platform	Maximum CPU Cores
VMware ESXi 6.0	128
VMware ESXi 5.5	64
Microsoft Hyper-V	4 (Server 2008) 64 (Server 2012 and Server 2012 R2)

Note: Nasuni supports VMware ESXi 5.5 and above.

Maximum RAM by Virtual Platform

The following table lists the maximum RAM (by virtual platform) that is supported by the Nasuni Filer. Visit [VMware features](#) and [Hyper-V features](#) for the most complete information.

Virtual Platform	Maximum RAM
VMware ESXi 6.0	4 TB (actually 4080 GB)
VMware ESXi 5.5	1 TB
Microsoft Hyper-V	64 GB (Server 2008) 1 TB (Server 2012) 4 TB (Server 2012 R2)

Note: *Nasuni supports VMware ESXi 5.5 and above.*

Chapter 2: Installing the Nasuni Filer

Overview

This chapter explains how to download the software and perform the initial installation of the Nasuni Filer on a virtual platform.

For additional information on the initial configuration of the Nasuni Filer, see [Nasuni Filer Initial Configuration Guide](#).

In this chapter

- [“Downloading the Nasuni Filer Software”](#) on page 12
- [“Installing the Nasuni Filer into VMware ESXi using the vSphere Client”](#) on page 14
- [“Installing the Nasuni Filer into Microsoft Hyper-V”](#) on page 17

Downloading the Nasuni Filer Software

The Nasuni Filer can run as a virtual appliance on your network and is distributed as a downloadable image. You need to register on the Nasuni Web site for a user account and password to access the download page.

To download the Nasuni Filer software from the Nasuni Web site:

1. Launch your Web browser.
2. If you do not have a Nasuni account already, go to the Nasuni evaluation Web site at <https://www.nasuni.com/evaluate>. The **Evaluate** page appears.

Start an Evaluation Today
Join hundreds of customers already using Nasuni

How we'll get this started

- 1 To begin, we'll contact you to start a dialogue. We want to learn about your needs and make sure to match you to the best Nasuni solution. It gives you the chance to ask all the questions you've been collecting!
- 2 After that we'll conduct an on-site meeting where we can better understand your architecture and the appropriate uses for Nasuni in your environment.
- 3 Throughout the entire process you'll have direct access to a dedicated pre-sales engineer as well as our 24 x 7 US-based support team.

How Can We Reach You?

First Name: *

Last Name: *

Company: *

Email: *

Phone: *

Country: *

of Sites: *

Submit

Figure 2-1: "Evaluate" page.

Enter your **First Name**, **Last Name**, **Company** name, **Work Email** address, **Work Phone** number, **State**, and **Country**. Click **Submit**.

Note: *The email address that you enter is used for authentication with Nasuni.*

A member of the Nasuni staff will contact you with registration material to obtain your Nasuni account.

- Log in to your Nasuni account Web site (<https://account.nasuni.com/>) and click **Downloads**. The **Downloads** page appears.

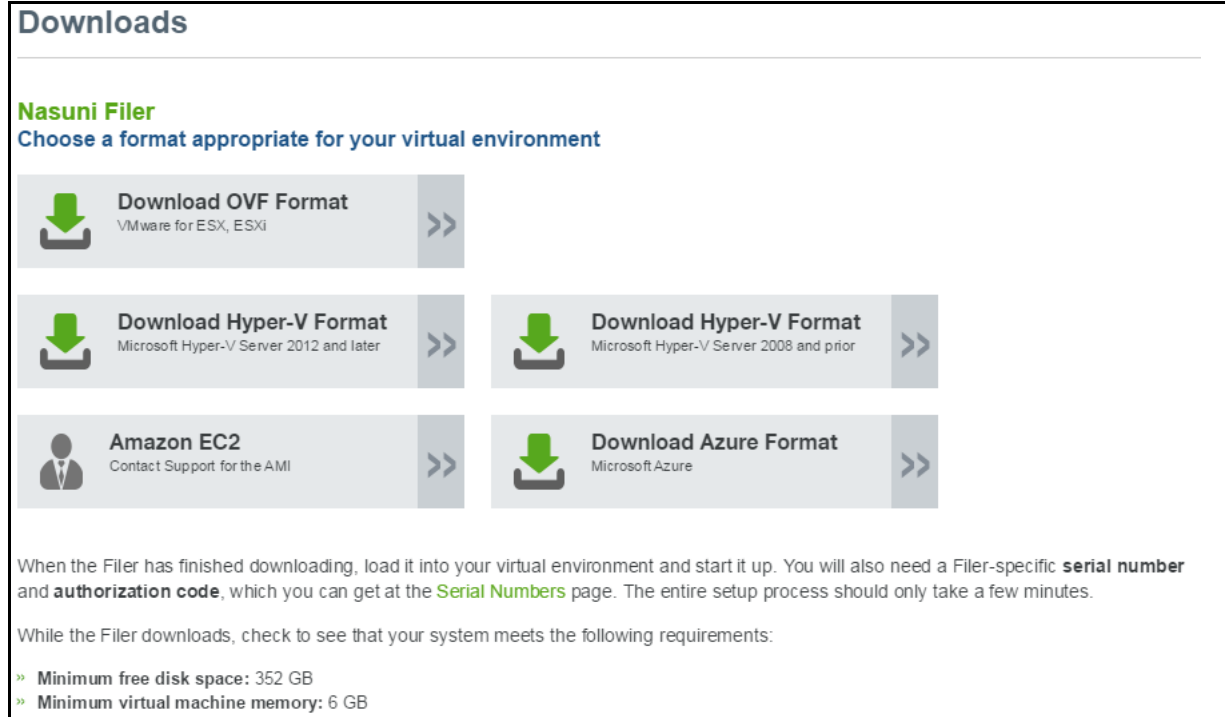


Figure 2-2: Downloads page.

- Select the appropriate format for your virtual environment from these choices:
 - OVF FORMAT:** OVF format is appropriate for VMware ESXi 5.5 and above environments.
 - HYPER-V FORMAT:** Hyper-V format is appropriate for Microsoft Hyper-V environments.

Note: There are two versions of the Microsoft Hyper-V software available: 2012 and pre-2012 (2008 R2 SP1). Select the appropriate version for your Microsoft Hyper-V environment.
- Download the Nasuni Filer software .zip file to a location on your local drive.
The amount of time to download the Nasuni Filer software file depends on your Internet connection. The file is approximately 600 MB in size.
- Unzip the Nasuni Filer software file.
- To continue, refer to one of the following sections, depending on your platform:
 - VMware ESXi:** See “[Installing the Nasuni Filer into VMware ESXi using the vSphere Client](#)” on page 14.
 - Microsoft Hyper-V:** See “[Installing the Nasuni Filer into Microsoft Hyper-V](#)” on page 17.

Installing the Nasuni Filer into VMware ESXi using the vSphere Client

You can run the Nasuni Filer in VMware ESXi 5.5 and above, using the vSphere Client. The vSphere Client can connect either directly to a host running VMware ESXi, or to vCenter Server, which is used to manage a group of hosts running ESXi.

The vSphere Client uses the OVF virtual appliance format for installing the Nasuni Filer.

Note: *Nasuni supports VMware ESXi 5.5 and above.*

Note: *You should install the VMware vSphere Client before performing this procedure. If you need more information, see your VMware documentation.*

Warning: *Do not attempt to restore the state of the virtual machine from a virtual machine snapshot or backup.*

Tip: *If you install the Nasuni Filer into VMware ESXi using the vSphere Web interface, instead of using the vSphere Client, ensure that the ESXi Embedded Host Client is running version 1.24 or higher.*

To install the Nasuni Filer into VMware ESXi using vSphere Client:

1. Download and unzip the Nasuni Filer software in OVF format, as explained in [“Downloading the Nasuni Filer Software” on page 12](#).
2. Launch the VMware vSphere Client. The Login window appears.
3. Log in to the vSphere Client with a valid IP address and your user name and password.
4. From the **File** menu, select **Deploy OVF Template**. The **Deploy OVF Template** window appears.
5. Navigate to the `NasuniFiler.ovf` file located in the `Filer` folder of the unzipped Nasuni Filer software. Click **Next**.
6. Continue with the **Deploy OVF Template** wizard, accepting all default values. When prompted, enter a **Name** for the virtual machine.

Note: *If necessary, at a later point, you can change the cache disk, the copy-on-write (COW) disk, the memory, the number of CPU cores, and the pass-through disks. See [Chapter 3, “Configuring the Virtual Platform,” on page 23](#).*
7. On the last **Deploy OVF Template** wizard screen, click **Finish**. The **Deploying** dialog box appears.
8. When the message “Completed Successfully” appears, click **Close**. The new Nasuni Filer virtual machine appears in the **Inventory** list in the left pane.
9. In the **Inventory** list in the left pane, select the name that you specified for the new Nasuni Filer virtual machine.
10. Right-click the new Nasuni Filer virtual machine, then, from the drop-down menu, select **Power**, then **Power On**. This powers on the new Nasuni Filer virtual machine.

11. Click the **Console** tab. The Nasuni Filer screen appears with a plain bar on the bottom that indicates the progress of the installation.



Figure 2-3: Nasuni Filer installation progress screen.

12. After a few moments, the Nasuni Filer console screen appears.

```
Nasuni Filer 6.3-1467 -- running
Assigned IP Address: 10.1.3.206
  (On network port with MAC Address: 00:0C:29:48:4F:6D)

Visit https://10.1.3.206 in a web browser to access the
Nasuni Filer user interface. You can change network
settings from either the web interface or the
service menu.

Press ENTER to access service screen:
```

Figure 2-4: Nasuni Filer console screen.

Tip: The first boot of a Nasuni Filer might take slightly longer than subsequent boots.

13. If DHCP is available on the network, make note of the “Assigned IP Address” that appears on the console screen. You use this IP address to access the Nasuni Filer user interface.

If DHCP is not available, log into the console service screen by pressing **Enter** and signing in. The default login username is `service`, and the default password is `service`.

Note: For security, use the `changepassword` command to change the password for the service console.

- a. Enter the command: `editnetwork`.
 - b. Enter the command: `setall static`.
 - c. Enter a new IP address for the Nasuni Filer. Note this IP address. You use this IP address to access the Nasuni Filer user interface.
14. The Nasuni Filer is now installed and ready to access using the IP address. See the [Nasuni Filer Initial Configuration Guide](#) for instructions on completing the configuration of the Nasuni Filer.

Installing the Nasuni Filer into Microsoft Hyper-V

You can run the Nasuni Filer in Microsoft Hyper-V. This section explains how to import the Nasuni Filer into Microsoft Hyper-V, which is included with Windows Server 2008 and Windows Server 2012.

Warning: *Nasuni CIFS shares do not support storing Microsoft Hyper-V system files using SMB 3 connections.*

Note: *You should install Microsoft Hyper-V before performing this procedure.*

Note: *Ensure that you have downloaded the appropriate version for your Microsoft Hyper-V environment, as in [step 4](#) on [page 13](#).*

To install the Nasuni Filer into Microsoft Hyper-V Server:

1. Launch Hyper-V Manager. The Hyper-V Manager opens.

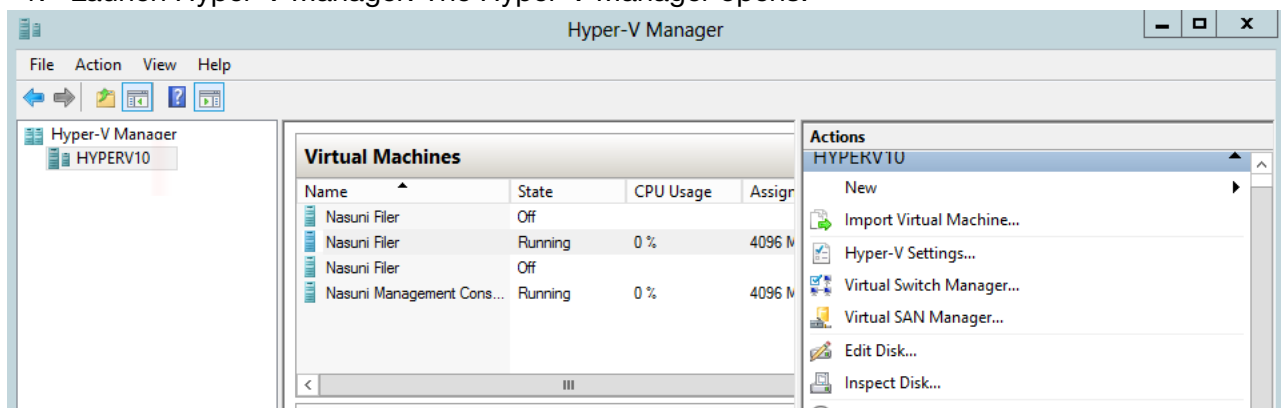


Figure 2-5: Hyper-V Manager.

2. From the **Actions**, select **Import Virtual Machine**. The **Import Virtual Machine** dialog box appears. Click **Next**.

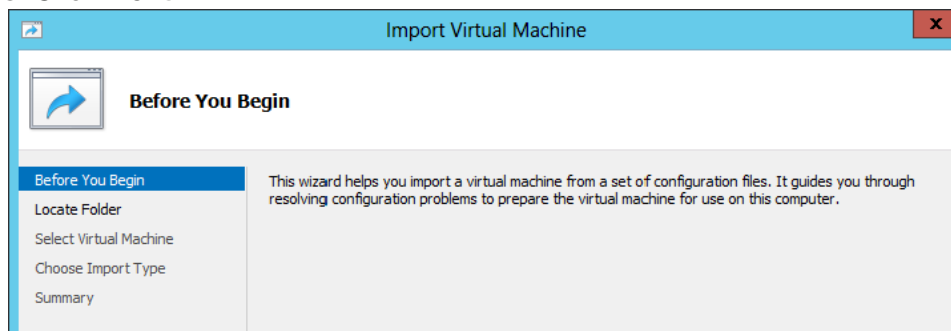


Figure 2-6: Import Virtual Machine dialog box.

- Click **Browse** and navigate to the folder where the Nasuni Filer software has been unzipped. Select the `Filer` folder and click **Next**.

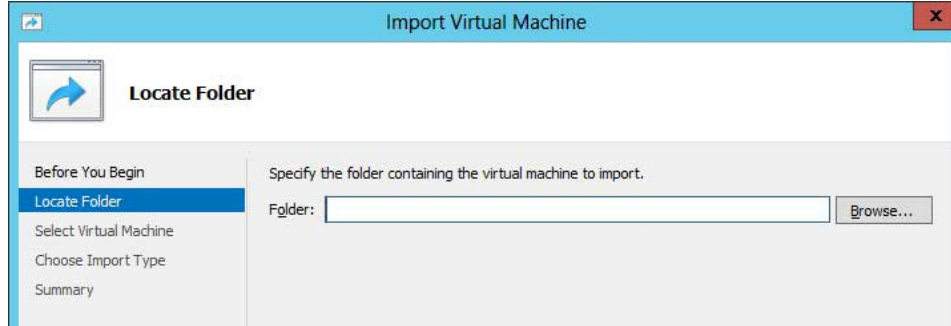


Figure 2-7: Locate Folder screen.

- Select **Nasuni Filer**, then click **Next**.

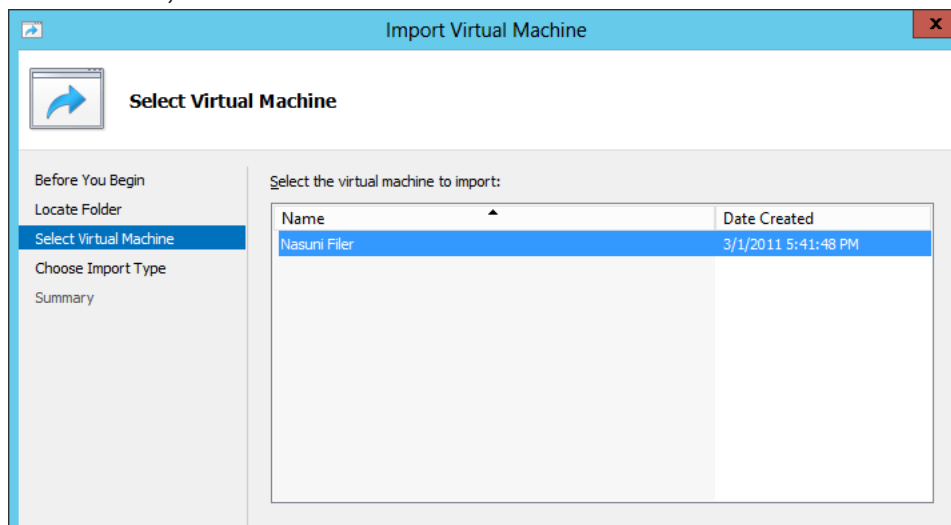


Figure 2-8: Select Virtual Machine screen.

- Select **Copy the virtual machine**, then click **Next**.

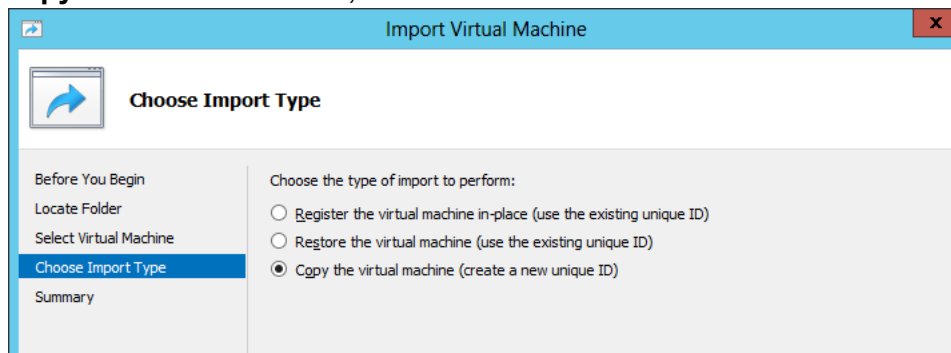


Figure 2-9: Choose Import Type screen.

6. Specify where to store the virtual machine files, or accept the defaults, then click **Next**.

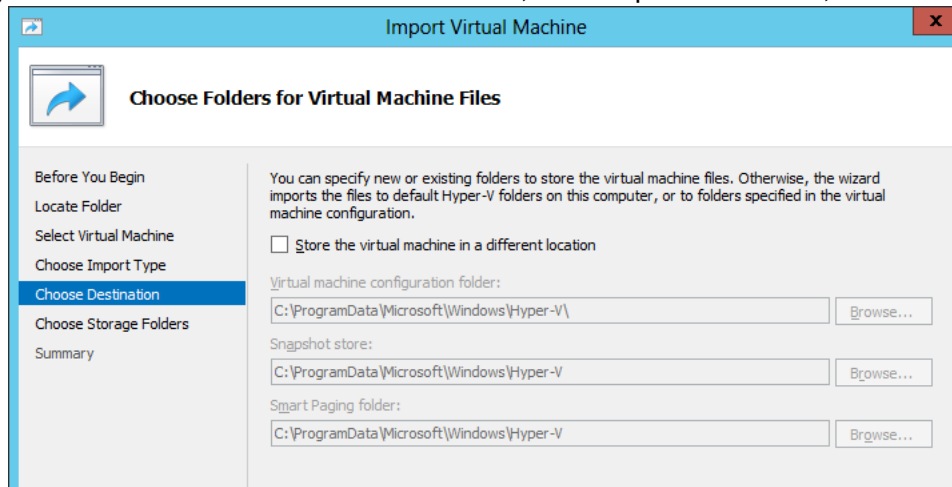


Figure 2-10: Choose Folders for Virtual Machine Files screen.

Tip: If you install the Nasuni Filer to a location that is not the Windows default location, you might receive the “TestVM failed to start” error message. If so, remove and re-add the virtual hard drive using these steps:

- *Run Hyper-V Manager.*
- *Right-click the settings of the virtual machine.*
- *Find the Virtual Hard Drive, and click “Remove”.*
- *Re-add the same Virtual Hard Drive.*
- *Restart the virtual machine. It should boot successfully.*

For Hyper-V version 2008 R2, see <https://support.microsoft.com/en-us/help/2249906/hyper-v-virtual-machine-may-not-start--and-you-receive-a-general-access-error> for details.

7. Click **Browse** and navigate to where to store the virtual hard disks, then click **Next**.

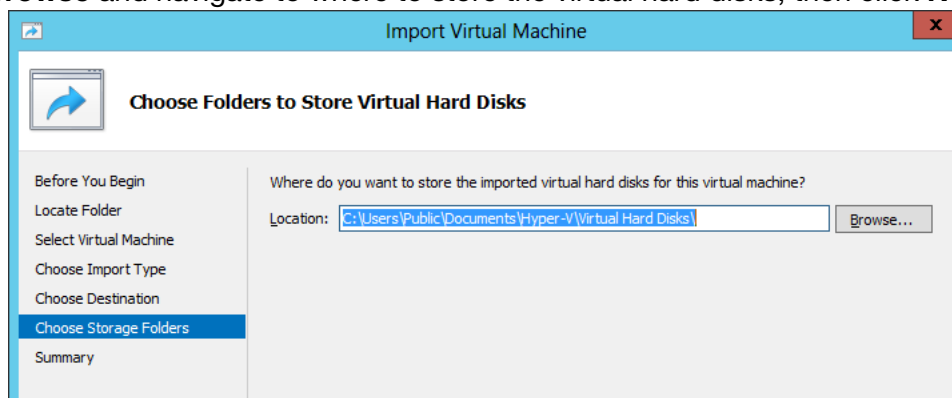


Figure 2-11: Choose Folders to Store Virtual Hard Disks screen.

8. Verify that all the information is correct, then click **Finish**.

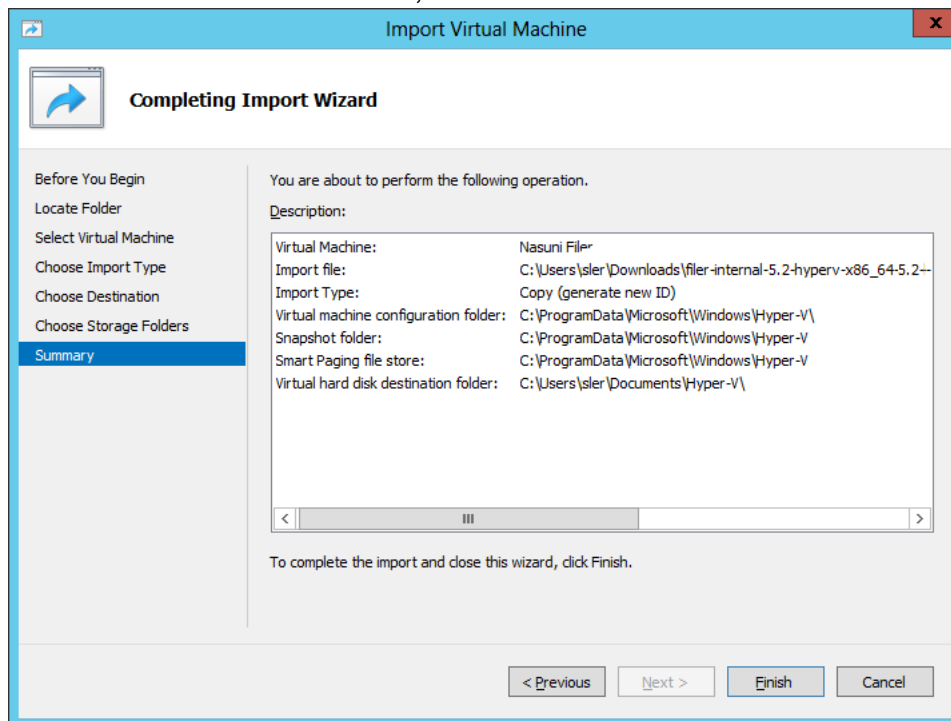


Figure 2-12: Summary screen.

After the import completes, the Nasuni Filer virtual machine appears in the list under **Virtual Machines**.

9. To configure networking for the Nasuni Filer virtual machine, follow these steps:
- In the list of virtual machines, right-click the Nasuni Filer virtual machine, then select **Settings** from the drop-down menu. The **Settings** dialog box appears.
 - If the Network Adapter does not appear in the **Hardware** list on the left, click **Add Hardware**. The **Add Hardware** dialog box appears. Select **Network Adapter** from the list, then click **Add**. From the **Network** drop-down list, select **Local Area Connection - Virtual Network**, then click **Apply**.
10. To use cache disks and COW (copy-on-write) disks larger than 2 TB, follow these steps:
- In the **Hard Drive** area, select the cache or COW disk. Information on the hard drive appears.
 - Select **Virtual Disk**. Click **New**, then follow the prompts for the wizard. To use disks larger than 2 TB, select **VHDX** when prompted.
 - Select **Dynamically expanding** when prompted.
 - Ensure that the extension of the file name is `vhdx` and not `vhd`.
 - Click **Apply**.
11. In the list of virtual machines, right-click the Nasuni Filer virtual machine, then select **Start** from the drop-down menu. The Nasuni Filer virtual machine starts.

12. After the Nasuni Filer virtual machine starts, right-click the Nasuni Filer virtual machine again, and select **Connect** from the drop-down menu. The Nasuni Filer screen appears with a plain bar on the bottom that indicates the progress of the installation.



Figure 2-13: Nasuni Filer installation progress screen.

Tip: You can force a file system check (`fsck`) by holding down the Shift key during this screen. When the file system check (`fsck`) is done, the usual processing continues.

13. After a few moments, the Nasuni Filer console screen appears.

```
Nasuni Filer 6.3-1467 -- running
Assigned IP Address: 10.1.3.206
  (On network port with MAC Address: 00:0C:29:48:4F:6D)
Visit https://10.1.3.206 in a web browser to access the
Nasuni Filer user interface. You can change network
settings from either the web interface or the
service menu.
Press ENTER to access service screen:
```

Figure 2-14: Nasuni Filer console screen.

Tip: The first boot of a Nasuni Filer might take slightly longer than subsequent boots.

14. If DHCP is available on the network, make note of the “Assigned IP Address” that appears on the console screen. You use this IP address to access the Nasuni Filer user interface. If DHCP is not available, log into the console service screen by pressing **Enter** and signing in. The default login username is `service`, and the default password is `service`.

Note: For security, use the `changepassword` command to change the password for the service console.

- a. Enter the command: `editnetwork`.
 - b. Enter the command: `setall static`.
 - c. Enter a new IP address for the Nasuni Filer. Note this IP address. You use this IP address to access the Nasuni Filer user interface.
15. The Nasuni Filer is now installed and ready to access using the IP address. See the [Nasuni Filer Initial Configuration Guide](#) for instructions on completing the configuration of the Nasuni Filer.

Tip: If you install the Nasuni Filer to a location that is not the Windows default location, you might receive the “TestVM failed to start” error message. If so, remove and re-add the virtual hard drive using these steps:

- Run Hyper-V Manager.
- Right-click the settings of the virtual machine.
- Find the Virtual Hard Drive, and click “Remove”.
- Re-add the same Virtual Hard Drive.
- Restart the virtual machine. It should boot successfully.

For Hyper-V version 2008R2, see <https://support.microsoft.com/en-us/help/2249906/hyper-v-virtual-machine-may-not-start--and-you-receive-a-general-access-error> for details.

Chapter 3: Configuring the Virtual Platform

Overview

Virtual platforms offer a variety of configuration options to improve the performance and behavior of your Nasuni Filer. This chapter presents procedures for performing these configurations. Because these configurations depend on third-party virtual platforms, you should follow the procedures for your specific virtual platform.

Note: *On the Hyper-V Manager platform, when creating a thick-provisioned disk to replace a thin-provisioned disk, the ACLs or permissions of the new thick-provisioned disk do not turn out correctly and must be changed manually. For details, see <http://support.microsoft.com/kb/2249906>.*

Tip: *Nasuni recommends using Thick provisioning for all virtual disks for performance reasons. On the VMware virtual platform, Nasuni recommends Thick Provision Eager Zeroed.*

Changing the size of the cache disk

On the virtual platform, you can change the size of the disk that the Nasuni Filer uses for its cache.

Note: *You must shut down the virtual machine to change the size of the cache disk.*

vSphere Client platform

Note: If you have taken a VMware snapshot, you cannot change the size of the disk. You must delete the snapshot first.

Warning: Do not attempt to restore the state of the virtual machine from a virtual machine snapshot or backup.

To change the size of the cache disk on the vSphere Client platform, follow these steps:

1. Launch the VMware vSphere Client. The VMware vSphere Client login window appears.
2. Log in to the vSphere Client with a valid IP address and your user name and password. The vSphere Client opens.
3. In the pane on the left, expand the host to display the list of virtual machines.
4. Click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears in the right pane.
5. If the virtual machine is running, then shut down the virtual machine using these steps:
 - a. On the **Console** tab, click in the command line area.
 - b. Press **Enter**.
 - c. Enter the login name and password for the service console. The default login name is `service` and the default password is `service`.

Note: For security, use the `changepassword` command to change the password for the service console.

- d. Enter the command: `shutdown`.
 - e. Confirm the shutdown by entering `yes`.
The virtual machine shuts down.
6. On the **Getting Started** tab, click **Edit virtual machine settings**.
Alternatively, on the **Summary** tab, click **Edit Settings**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Edit Settings** from the drop-down list.
The **Virtual Machine Properties** dialog box appears.
7. On the **Hardware** tab, select the cache disk in the **Hardware** list on the left side. The cache disk is the largest hard disk. Information about that hard disk appears on the right side.
8. Enter or select the new **Provisioned Size**. The Provisioned Size must be less than or equal to the displayed **Maximum Size** of that hard disk. The new Provisioned Size must be greater than the previous Provisioned Size.
See [“Maximum Cache Size by Virtual Platform” on page 8](#) for details on the size of the cache disk.
9. Click **OK**. The size of the selected hard disk changes to the specified size.

10. On the **Getting Started** tab, click **Power on the virtual machine**.
Alternatively, on the **Summary** tab, click **Power On**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Power** from the drop-down list, then select **Power On** from the drop-down list.
The virtual machine powers on. After a significant resize, the operations after powering on can take some time, with some performance impact during that period. The progress of the resize is visible on the Nasuni Filer user interface.

Hyper-V Manager platform

To change the size of the cache disk on the Hyper-V Manager platform, follow these steps:

1. Launch Hyper-V Manager.
2. In the **Virtual Machines** list, click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears.
3. If the virtual machine is running, then follow these steps:
 - a. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Shut Down** from the drop-down list.

Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Shut Down** in the list of actions on the right side.

The **Shut Down Machine** dialog box appears.
 - b. Click **Shut Down**. The virtual machine shuts down.
4. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Settings** from the drop-down list.
Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Settings** in the list of actions on the right side.
The **Settings** dialog box appears.
5. In the **Hardware** list on the left side, select the cache hard drive. The default label for the cache hard drive is "Cache.vhd". The cache disk is the largest hard disk. Information about that hard drive appears on the right side.
6. Click **Edit**. The **Edit Virtual Hard Disk Wizard** dialog box appears.
7. Navigate to the location of the hard disk, then click **Next**.
8. On the **Choose Action** screen, select **Expand**, then click **Next**.
9. Enter the **New size** of the cache disk in GB. The "New size" must be less than or equal to the displayed **Maximum** size of that hard disk. The "New size" must be greater than the previous size. Then click **Next**.
See ["Maximum Cache Size by Virtual Platform" on page 8](#) for details on the size of the cache disk.
10. Click **Finish**. The size of the cache disk changes to the specified size.

11. Click **OK**. The **Settings** dialog box closes.
12. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Start** from the drop-down list.
Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Start** in the list of actions on the right side.
The virtual machine restarts. After a significant resize, the operations after powering on can take some time, with some performance impact during that period. The progress of the resize is visible on the Nasuni Filer user interface.

Changing the size of the copy-on-write (COW) disk

The copy-on-write (COW) disk is used during the snapshot process. If any writes to the Nasuni Filer occur during a snapshot, the previous data from the cache disk is copied to the COW disk, and the new data is written to the cache disk. Hence, the term “copy-on-write”. This allows new writes to take place at any time, even during the snapshot process.

On the virtual platform, you can change the size of the disk that the Nasuni Filer uses for copy-on-write (COW).

Note: *The copy-on-write (COW) disk is the second-largest disk, and the cache disk is the largest disk, by default. However, if you change the relative sizes of the disks, the COW disk might not be the second-largest disk.*

Note: *You must shut down the virtual machine to change the size of the copy-on-write (COW) disk.*

vSphere Client platform

Note: *If you have taken a VMware snapshot, you cannot change the size of the disk. You must delete the snapshot first.*

Warning: *Do not attempt to restore the state of the virtual machine from a virtual machine snapshot or backup.*

To change the size of the copy-on-write (COW) disk on the vSphere Client platform, follow these steps:

1. Launch the VMware vSphere Client. The VMware vSphere Client login window appears.
2. Log in to the vSphere Client with a valid IP address and your user name and password. The vSphere Client opens.
3. In the pane on the left, expand the host to display the list of virtual machines.
4. Click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears in the right pane.

5. If the virtual machine is running, then shut down the virtual machine using these steps:
 - a. On the **Console** tab, click in the command line area.
 - b. Press **Enter**.
 - c. Enter the login name and password for the service console. The default login name is `service` and the default password is `service`.

***Note:** For security, use the `changepassword` command to change the password for the service console.*
 - d. Enter the command: `shutdown`.
 - e. Confirm the shutdown by entering `yes`.
The virtual machine shuts down.
6. On the **Getting Started** tab, click **Edit virtual machine settings**.
Alternatively, on the **Summary** tab, click **Edit Settings**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Edit Settings** from the drop-down list.
The **Virtual Machine Properties** dialog box appears.
7. On the **Hardware** tab, select the copy-on-write (COW) disk in the **Hardware** list on the left side. There are three disks; the copy-on-write (COW) disk is the second-largest disk, and the cache disk is the largest disk, by default. However, if you change the relative sizes of the disks, the COW disk might not be the second-largest disk.
Information about that hard disk appears on the right side.
8. Enter or select the new **Provisioned Size**. The Provisioned Size must be less than or equal to the displayed **Maximum Size** of that hard disk. The size of the copy-on-write disk should be less than the size of the cache disk. The new size must be greater than the previous size.

***Tip:** If necessary, it is possible to reduce the size of the copy-on-write disk. To do this, shut down the Nasuni Filer (see the [Nasuni Filer Administration Guide](#) for instructions), delete the existing copy-on-write disk, create a new copy-on-write disk with the desired size, and then restart the Nasuni Filer.*
9. Click **OK**. The size of the selected hard disk changes to the specified size.
10. On the **Getting Started** tab, click **Power on the virtual machine**.
Alternatively, on the **Summary** tab, click **Power On**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Power** from the drop-down list, then select **Power On** from the drop-down list.
The virtual machine powers on.

Hyper-V Manager platform

To change the size of the copy-on-write (COW) disk on the Hyper-V Manager platform, follow these steps:

1. Launch Hyper-V Manager.
2. In the **Virtual Machines** list, click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears.
3. If the virtual machine is running, then follow these steps:
 - a. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Shut Down** from the drop-down list.

Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Shut Down** in the list of actions on the right side.

The **Shut Down Machine** dialog box appears.
 - b. Click **Shut Down**. The virtual machine shuts down.
4. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Settings** from the drop-down list.

Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Settings** in the list of actions on the right side.

The **Settings** dialog box appears.
5. In the **Hardware** list on the left side, select the copy-on-write (COW) hard drive. The default label for the copy-on-write (COW) hard drive is “Cow.vhd”. Information about that hard drive appears on the right side.
6. Click **Edit**. The **Edit Virtual Hard Disk Wizard** dialog box appears.
7. Navigate to the location of the hard disk, then click **Next**.
8. On the **Choose Action** screen, select **Expand**, then click **Next**.
9. Enter the **New size** of the copy-on-write (COW) disk in GB. The “New size” must be less than or equal to the displayed **Maximum** size of that hard disk. The size of the copy-on-write disk should be less than the size of the cache disk. The “New size” must be greater than the previous size. Then click **Next**.

Tip: If necessary, it is possible to reduce the size of the copy-on-write disk. To do this, shut down the Nasuni Filer (see the [Nasuni Filer Administration Guide](#) for instructions), delete the existing copy-on-write disk, create a new copy-on-write disk with the desired size, and then restart the Nasuni Filer.
10. Click **Finish**. The size of the copy-on-write (COW) changes to the specified size.
11. Click **OK**. The **Settings** dialog box closes.

12. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Start** from the drop-down list.
Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Start** in the list of actions on the right side.
The virtual machine restarts. After a significant resize, the operations after powering on can take some time, with some performance impact during that period. The progress of the resize is visible on the Nasuni Filer user interface.

Changing memory size

On the virtual platform, you can change the amount of memory that the Nasuni Filer can use.

Note: You must shut down the virtual machine to change the memory size.

vSphere Client platform

To change the memory size on the vSphere Client platform, follow these steps:

1. Launch the VMware vSphere Client. The VMware vSphere Client login window appears.
2. Log in to the vSphere Client with a valid IP address and your user name and password. The vSphere Client opens.
3. In the pane on the left, expand the host to display the list of virtual machines.
4. Click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears in the right pane.
5. If the virtual machine is running, then shut down the virtual machine using these steps:
 - a. On the **Console** tab, click in the command line area.
 - b. Press **Enter**.
 - c. Enter the login name and password for the service console. The default login name is `service` and the default password is `service`.
Note: For security, use the `changepassword` command to change the password for the service console.
 - d. Enter the command: `shutdown`.
 - e. Confirm the shutdown by entering `yes`.
The virtual machine shuts down.
6. On the **Getting Started** tab, click **Edit virtual machine settings**.
Alternatively, on the **Summary** tab, click **Edit Settings**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Edit Settings** from the drop-down list.
The **Virtual Machine Properties** dialog box appears.

7. On the **Hardware** tab, select **Memory** in the **Hardware** list on the left side. Information about memory appears on the right side.
8. Enter or select the new **Memory Size**. The Memory Size should be greater than or equal to the “Minimum recommended for this guest OS” and greater than or equal to the “Default recommended for this guest OS”. Also, the Memory Size should be less than or equal to the “Maximum recommended for best performance” and less than or equal to the “Maximum recommended for this guest OS”.
See [“Maximum CPU Cores by Virtual Platform” on page 9](#) for details on memory.
9. Click **OK**. The memory changes to the specified memory size.
10. On the **Getting Started** tab, click **Power on the virtual machine**.
Alternatively, on the **Summary** tab, click **Power On**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Power** from the drop-down list, then select **Power On** from the drop-down list.
The virtual machine powers on.

Hyper-V Manager platform

To change the memory size on the Hyper-V Manager platform, follow these steps:

1. Launch Hyper-V Manager.
2. In the **Virtual Machines** list, click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears.
3. If the virtual machine is running, then follow these steps:
 - a. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Shut Down** from the drop-down list.

Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Shut Down** in the list of actions on the right side.

The **Shut Down Machine** dialog box appears.
 - b. Click **Shut Down**. The virtual machine shuts down.
4. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Settings** from the drop-down list.
Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Settings** in the list of actions on the right side.
The **Settings** dialog box appears.
5. In the **Hardware** list on the left side, select **Memory**. Information about the memory appears on the right side.
6. In the **Maximum RAM** text box, enter the new maximum memory.
See [“Maximum RAM by Virtual Platform” on page 10](#) for details on memory.
7. Click **OK**. The **Settings** dialog box closes. The memory changes to the specified size.

8. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Start** from the drop-down list.
Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Start** in the list of actions on the right side.
The virtual machine restarts. After a significant resize, the operations after powering on can take some time, with some performance impact during that period. The progress of the resize is visible on the Nasuni Filer user interface.

Changing the number of CPU cores

On the virtual platform, you can change the number of CPU cores that the Nasuni Filer uses.

Note: You must shut down the virtual machine to change the number of CPU cores.

vSphere Client platform

To change the number of CPU cores on the vSphere Client platform, follow these steps:

1. Launch the VMware vSphere Client. The VMware vSphere Client login window appears.
2. Log in to the vSphere Client with a valid IP address and your user name and password. The vSphere Client opens.
3. In the pane on the left, expand the host to display the list of virtual machines.
4. Click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears in the right pane.
5. If the virtual machine is running, then shut down the virtual machine using these steps:
 - a. On the **Console** tab, click in the command line area.
 - b. Press **Enter**.
 - c. Enter the login name and password for the service console. The default login name is `service` and the default password is `service`.
Note: For security, use the `changepassword` command to change the password for the service console.
 - d. Enter the command: `shutdown`.
 - e. Confirm the shutdown by entering `yes`.
The virtual machine shuts down.
6. On the **Getting Started** tab, click **Edit virtual machine settings**.
Alternatively, on the **Summary** tab, click **Edit Settings**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Edit Settings** from the drop-down list.
The **Virtual Machine Properties** dialog box appears.

7. On the **Hardware** tab, select **CPUs** in the **Hardware** list on the left side. Information about the number of virtual processors appears on the right side.
8. From the **Number of virtual processors** drop-down list on the right side, select the new number of CPU cores.
See [“Maximum CPU Cores by Virtual Platform” on page 9](#) for details on the number of CPU cores.
9. Click **OK**. The number of CPU cores changes to the specified number.
10. On the **Getting Started** tab, click **Power on the virtual machine**.
Alternatively, on the **Summary** tab, click **Power On**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Power** from the drop-down list, then select **Power On** from the drop-down list.
The virtual machine powers on.

Hyper-V Manager platform

To change the number of CPU cores on the Hyper-V Manager platform, follow these steps:

1. Launch Hyper-V Manager.
2. In the **Virtual Machines** list, click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears.
3. If the virtual machine is running, then follow these steps:
 - a. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Shut Down** from the drop-down list.

Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Shut Down** in the list of actions on the right side.

The **Shut Down Machine** dialog box appears.
 - b. Click **Shut Down**. The virtual machine shuts down.
4. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Settings** from the drop-down list.
Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Settings** in the list of actions on the right side.
The **Settings** dialog box appears.
5. In the **Hardware** list on the left side, select **Processor**. Information about the number of CPU cores appears on the right side.
6. From the **Number of logical processors** drop-down list, select the number of CPU cores.
See [“Maximum CPU Cores by Virtual Platform” on page 9](#) for details on the number of CPU cores.
7. Click **OK**. The **Settings** dialog box closes. The number of CPU cores changes to the specified number.

8. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Start** from the drop-down list.
Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Start** in the list of actions on the right side.
The virtual machine restarts. After a significant resize, the operations after powering on can take some time, with some performance impact during that period. The progress of the resize is visible on the Nasuni Filer user interface.

Using pass-through disks

A pass-through disk is a physical disk that, while not a member of a pool, can be used as a storage source for a virtual platform. A physical disk that has an existing file system (such as Windows, UNIX, and Linux) can be used without modifying the existing data.

A pass-through disk enables simpler data migration from the existing storage architecture to the virtual platform, with minimal disruption to operations. Also, larger cache sizes are possible by using pass-through disks.

On the virtual platform, you can configure a pass-through disk for use by the Nasuni Filer.

Note: You must shut down the virtual machine to configure a pass-through disk.

vSphere Client platform

Note: In VMware, a pass-through disk is sometimes called a Raw Disk Mapping (RDM).

Note: Hardware virtualization must be enabled in the BIOS.

To configure a pass-through disk on the vSphere Client platform, follow these steps:

1. Launch the VMware vSphere Client. The VMware vSphere Client login window appears.
2. Log in to the vSphere Client with a valid IP address and your user name and password. The vSphere Client opens.
3. In the pane on the left, expand the host to display the list of virtual machines.
4. Click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears in the right pane.
5. If the virtual machine is running, then shut down the virtual machine using these steps:
 - a. On the **Console** tab, click in the command line area.
 - b. Press **Enter**.
 - c. Enter the login name and password for the service console. The default login name is `service` and the default password is `service`.

Note: For security, use the `changepassword` command to change the password for the service console.

- d. Enter the command: `shutdown`.
 - e. Confirm the shutdown by entering `yes`.
The virtual machine shuts down.
6. On the **Configuration** tab, click **Advanced Settings**. The **Advanced Settings** page appears.
 7. Click **Edit**. The **Mark devices for passthrough** dialog box appears.
 8. From the list of devices, select a controller, then select a device (hard disk). A warning message appears. Click **Yes**.

9. Click **OK**. The selected device appears in the list of devices.
Note: The device is not enabled for pass-through until after reboot.
10. On the **Getting Started** tab, click **Edit virtual machine settings**.
Alternatively, on the **Summary** tab, click **Edit Settings**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Edit Settings** from the drop-down list.
The **Virtual Machine Properties** dialog box appears.
11. On the **Hardware** tab, a list of hardware devices appears. Click **Add**. The **Add Hardware** wizard appears.
12. From the **Device Type** list, select **Hard Disk**. Click **Next**. The **Select a Disk** screen appears.
13. Select **Raw Device Mappings**. Click **Next**.
14. Accept the defaults and click **Next** on the remaining screens, then click **Finish**.
15. Click **OK**. The specified hard drive uses the selected physical hard disk as a pass-through disk.
16. On the **Getting Started** tab, click **Power on the virtual machine**.
Alternatively, on the **Summary** tab, click **Power On**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Power** from the drop-down list, then select **Power On** from the drop-down list.
The virtual machine powers on.

Hyper-V Manager platform

To configure a pass-through disk on the Hyper-V Manager platform, follow these steps:

1. Launch Hyper-V Manager.
2. In the **Virtual Machines** list, click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears.
3. If the virtual machine is running, then follow these steps:
 - a. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Shut Down** from the drop-down list.

Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Shut Down** in the list of actions on the right side.

The **Shut Down Machine** dialog box appears.
 - b. Click **Shut Down**. The virtual machine shuts down.
4. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Settings** from the drop-down list.
Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Settings** in the list of actions on the right side.
The **Settings** dialog box appears.

5. In the **Hardware** list on the left side, select one of the hard drives. The `cache.vhd` hard drive is the cache disk. The `cow.vhd` hard drive is the copy-on-write (COW) disk. Information about that hard drive appears on the right side.
6. In the **Media** area, select **Physical hard disk**.
7. From the **Physical hard disk** drop-down list, select the physical hard disk to use as the pass-through disk.

***Note:** The physical hard disk must be offline when you configure it. If the physical hard disk does not appear in the drop-down list, ensure that the physical hard disk is offline.*

8. Click **OK**. The **Settings** dialog box closes. The specified hard drive uses the selected physical hard disk as a pass-through disk.
9. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Start** from the drop-down list.

Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Start** in the list of actions on the right side.

The virtual machine restarts. After a significant resize, the operations after powering on can take some time, with some performance impact during that period. The progress of the resize is visible on the Nasuni Filer user interface.

Chapter 4: Controlling the Nasuni Filer

Overview

Virtual platforms offer the ability to control various aspects of your Nasuni Filer. This chapter presents procedures for these control functions. Because these controls depend on third-party virtual platforms, you should follow the procedures for your specific virtual platform.

Shutting down the Nasuni Filer

On the virtual platform, you can shut down the Nasuni Filer.

vSphere Client platform

To shut down the Nasuni Filer on the vSphere Client platform, follow these steps:

1. Launch the VMware vSphere Client. The VMware vSphere Client login window appears.
2. Log in to the vSphere Client with a valid IP address and your user name and password. The vSphere Client opens.
3. In the pane on the left, expand the host to display the list of virtual machines.
4. Click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears in the right pane.
5. On the **Getting Started** tab, click **Shut down the virtual machine**.
Alternatively, on the **Summary** tab, click **Shut Down Guest**.
Alternatively, right-click the name of your Nasuni Filer in the list of virtual machines, then select **Power** from the drop-down list. Then select **Shut Down Guest** from the drop-down list.
The virtual machine shuts down.

Hyper-V Manager platform

To shut down the Nasuni Filer on the Hyper-V Manager platform, follow these steps:

1. Launch Hyper-V Manager.
2. In the **Virtual Machines** list, click the name of your Nasuni Filer. This is the name you entered when you installed the Nasuni Filer. Information about your Nasuni Filer appears.
3. In the **Virtual Machines** list, right-click the name of your Nasuni Filer, then select **Shut Down** from the drop-down list.
Alternatively, in the **Virtual Machines** list, select the name of your Nasuni Filer, then click **Shut Down** in the list of actions on the right side.
The **Shut Down Machine** dialog box appears.
4. Click **Shut Down**.
The virtual machine shuts down.

Chapter 5: Uninstalling the Nasuni Filer

Overview

This chapter explains how to uninstall the Nasuni Filer from your supported platform. You might need to uninstall the Nasuni Filer if you are upgrading the system hardware.

Uninstalling the Nasuni Filer

VMware Platform

Caution: When you uninstall the Nasuni Filer, all data in the cache is deleted.

To uninstall the Nasuni Filer on a VMware platform:

1. Shut down the Nasuni Filer from your Web browser. See the section entitled “Shutting Down and Rebooting Nasuni Filer” in the [Nasuni Filer Administration Guide](#) for instructions.
2. Power down the Nasuni Filer from the VMware platform you are using.
3. Remove the virtual appliance from your VMware environment. For example, for VMware Server, select **Remove Virtual Machine** from the **Virtual Machine** menu. Using the vSphere Client, right-click the virtual machine and select **Remove from Inventory** from the drop-down list.

If you need more information, see your VMware platform documentation.

Hyper-V Platform

Caution: When you uninstall the Nasuni Filer, all data in the cache is deleted.

To uninstall the Nasuni Filer on a Microsoft Hyper-V platform:

1. Shut down the Nasuni Filer from your Web browser. See the section entitled “Shutting Down and Rebooting Nasuni Filer” in the [Nasuni Filer Administration Guide](#) for instructions.
2. Select the Nasuni Filer under **Virtual Machines**.
3. Right-click on the Nasuni Filer and select **Turn off** from the pop-up menu.
4. Delete the machine instance by pressing the **Delete** key. A confirmation message appears.
5. Click **Delete**. The virtual machine instance is deleted from the view.

Note: It might be necessary to manually delete the `.vmd` or `.vmdx` files from the disk.

Appendix A: Moving a VM to Another Host

Overview

If it becomes necessary to move the virtual machine, on which the Nasuni Filer runs, to another host, you must perform a procedure to restore the “factory” settings, then reconfigure the network settings.

Procedure

After moving the VM to a new host, you can use console commands to reset to “factory” settings, then reconfigure the network settings.

***Important:** After making any changes, you must use the Nasuni Filer to enter those settings so that the Nasuni Filer is consistent with the platform. This applies to all changes.*

To reset to “factory” settings, then reconfigure the network settings, follow these steps:

1. After moving the VM to a new host, access the console for the Nasuni Filer. For the Nasuni Filer hardware appliance, use a keyboard and monitor attached to the hardware appliance. For the Nasuni Filer virtual machine, use the virtual machine console window. The **console prompt** appears.

```
Nasuni Filer 6.3-1467 -- running

Assigned IP Address: 10.1.3.206
  (On network port with MAC Address: 00:0C:29:48:4F:6D)

Visit https://10.1.3.206 in a web browser to access the
Nasuni Filer user interface. You can change network
settings from either the web interface or the
service menu.

Press ENTER to access service screen:
```

Figure A-1: Console prompt.

2. Press **Enter** to access the Service menu. The login prompt appears. Enter the username and password. The login username is `service`, and the default password is `service`. The **Service Menu** appears.

```

SERVICE MENU
=====
Common Commands: showip ping dnsccheck httpscheck shutdown
Other Commands: type "help" for a list

+ use the "editnetwork" command to reset devices or set
  DHCP or Static IP network configuration
+ Type "help <COMMAND>" to print details about the command

```

Figure A-2: Service Menu.

3. To access commands to change the network configuration, enter `editnetwork` at the prompt. The network prompt appears.

```

> editnetwork
Loading current network settings...
* Edit or Display Network Settings
* Changes will not be saved until the "save" command is given
* Use the "close" command to leave the network prompt

network> _

```

Figure A-3: Network prompt.

4. To perform a “factory reset” of the Nasuni Filer, enter `factoryreset` at the prompt. A Message appears asking for permission to continue.

***Warning:** Executing this command destroys the current configuration and returns the Nasuni Filer to the default settings. This command also cleans up and reconfigures the NIC layout of the system.*

5. Enter `yes` at the prompt. The Nasuni Filer reboots.
6. Once again, access the console for the Nasuni Filer. For the Nasuni Filer hardware appliance, use a keyboard and monitor attached to the hardware appliance. For the Nasuni Filer virtual machine, use the virtual machine console window. The **console prompt** appears.

```

Nasuni Filer 6.3-1467 -- running

Assigned IP Address: 10.1.3.206
  (On network port with MAC Address: 00:0C:29:48:4F:6D)

Visit https://10.1.3.206 in a web browser to access the
Nasuni Filer user interface. You can change network
settings from either the web interface or the
service menu.

Press ENTER to access service screen:

```

Figure A-4: Console prompt.

- Press **Enter** to access the Service menu. The login prompt appears. Enter the username and password. The login username is `service`, and the default password is `service`. The **Service Menu** appears.

```

SERVICE MENU
=====
Common Commands: showip ping dnscheck httpscheck shutdown
Other Commands: type "help" for a list

+ use the "editnetwork" command to reset devices or set
  DHCP or Static IP network configuration
+ Type "help <COMMAND>" to print details about the command

```

Figure A-5: Service Menu.

- To access commands to change the network configuration, enter `editnetwork` at the prompt. The `network` prompt appears.

```

> editnetwork
Loading current network settings...
* Edit or Display Network Settings
* Changes will not be saved until the "save" command is given
* Use the "close" command to leave the network prompt

network> _

```

Figure A-6: Network prompt.

- The default is to use DHCP settings. To use DHCP settings for the network device and the system, enter the following command:

```
setall dhcp
```

Press **Enter**. The **setall dhcp** command runs:

```

network> setall dhcp
*****
*   Editing Device #1
*****
Enabling dhcp settings for network device...
*****
*   Editing System settings
*****
Enabling dhcp settings for system...
network>

```

Figure A-7: `setall dhcp` command.

The network device and the system use DHCP settings. Continue with step 11.

10. Alternatively, to use static settings for the network device and the system, enter the following command:

```
setall static
```

Press **Enter**. The **setall static** command runs:

```
network> setall static
*****
*   Editing Device #1
*****
Enabling static settings for network device...

Leaving fields blank will accept the default value, if any, in brackets
IP Address: 10.1.3.126
Netmask: 255.255.255.0
MTU [1500]:
Change any values? [yes/No] n
- done editing.
*****
*   Editing System settings
*****
Enabling static settings for system...

Leaving fields blank will accept the default value, if any, in brackets
Host Name [filer-933cx7dy]: TransGlobalTech
Default Gateway: 10.1.3.126
(Enter one or two DNS servers, separated by spaces)
DNS Servers [10.1.1.2 10.1.1.11]:
(Enter one or more search domains, separated by spaces)
Search Domain [nasuni.net colo.nasuni.net]:
Change any values? [yes/No] n
- done editing.
```

Figure A-8: setall static command.

Change values as necessary and save your values.

11. To exit the editnetwork commands, enter `close`.
12. To exit the console commands, enter `quit`.
13. On the Nasuni Filer, enter any changed settings so that the Nasuni Filer is consistent with the platform.

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