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Introducing the NSv Series

This SonicWall® SonicOS/X 7 NSv Getting Started Guide describes how to install SonicWall NSv and provides basic configuration information.

To jump directly to the installation instructions, go to Installing SonicOS/X on the NSv Series.

The SonicWall® NSv is SonicWall's virtualized next-generation firewall appliance that provides Deep Packet Inspection (DPI) security and segmentation in virtual environments. With some platform specific differences, SonicOS/X 7 running on the NSv offers the same feature functionality and security features of a physical appliance, with comparable performance. SonicOS/X Virtual is a fully featured 64-bit SonicOS/X 7 powered by SonicCore.

#### **Topics:**

- Feature Support Information
- Product Matrix and Requirements
- Github Repository
- Backup and Recovery Information
- Exporting and Importing Firewall Configurations
- Upgrading from SonicOS 6.5
- Upgrading to a Higher Capacity NSv Model
- Creating a MySonicWall Account

# Feature Support Information

The Feature Support List table shows key SonicOS/X features and whether or not they are supported or unsupported in deployments of the NSv. The SonicWall NSv has nearly all the features and functionality of a SonicWall NSa hardware virtual machine running SonicOS/X 7 firmware.

For more information about supported features, go to the *Technical Documentation Portal*.

The Feature Support List of NSv table shows the key SonicOS/X 7 features.

### FEATURE SUPPORT LIST

Functional Category	Feature Area	Feature
Unified Security Policy	Unified Policy combining Layer 4 to Layer 3 Rules	Source/Destination IP/Port/Service
		Application based Control
		CFS/Web Filtering
		Botnet
		Geo-IP/country
		Single Pass Security
		Services enforcement
		Decryption Policy
		DoS Policy
		EndPoint Security Policy
		Rule Diagram
	Profile Based Objects	
		Endpoint Security
		Bandwidth Management
		QoS Marking
		Content Filter
		Intrusion Prevention
		DHCP Option
		AWS VPN
	Action Profiles	
		Security Profile
		DoS Profile
	Signature Objects	
		AntiVirus Signature Object
		AntiSpyware Signature Object
	Rule Management	
		Cloning
		Shadow rule analysis
		In-cell editing
		Group editing
		Export of Rules
		LiveCounters
	Managing Views	

Functional Category	Feature Area	Feature
		Used/unused rules
		Active/inactive rules
		Sections
		Customizable Grid/Layout
		Custom Grouping
TLS 1.3	Supporting TLS 1.3 with enhanced security	
SDWAN	SDWAN Scalability	
	SDWAN Usability Wizard	
API	API Driven Management	
	Full API Support	
Dashboard	Enhanced Home Page	
		Actionable Dashboard
		Enhanced Device View
		Top Traffic and User summary
		Insights to threats
		Policy/Object Overview
		Profiles and Signatures Overview
		Zero-Day Attack Origin Analysis
	Notification Center	
Debugging	Enhanced Packet Monitoring	
	UI based System Logs Download	
	SSH Terminal on UI	
	System Diagnostic Utility Tools	
	Policy Lookup	
Capture Threat Assessment (CTA 2.0)	Executive Template	
	Customizable Logo/Name/Company	
	Industry and Global Average Statistics	
	Risky File Analysis	
	Risky Application Summary	

Functional Category	Feature Area	Feature
	Malware Analysis	
	Glimpse of Threats	
Monitoring	Risky Application Summary	
	Enhanced AppFlow Monitoring	
Management	CSC Simple Reporting	
	ZeroTouch Registration and Provisioning	
General	SonicCoreX and SonicOS/X Containerization	
	Data Encryption using AES-256	
	Enhanced Online Help	

(i) NOTE: Per Microsoft, "Azure does not support any Layer-2 semantics." Therefore, SonicOS/X Layer 2 functionality is disabled in NSv deployments. Consequently, NSv virtual machines do not support VLAN interfaces and DHCP Server functionality. See https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-faq and https://support.microsoft.com/en-us/help/2721672/microsoft-server-software-support-for-microsoft-azure-virtual-machines for more information.

For more information about supported features, refer to the SonicOS/X 7 NSv administration documentation. This and other documents for the SonicWall NSv are available by selecting **NSv** as the **Product** at: https://www.sonicwall.com/support/technical-documentation.

# **Product Matrix and Requirements**

The following table shows the hardware resource requirements for the SonicWall NSv virtual machines.

Product Models	NSv 270	NSv 470	NSv 870
Maximum Cores <sup>1</sup>	2	4	8
Minimum Total Cores	2	2	2
Management Cores	1	1	1
Maximum Data Plane Cores	1	3	7
Minimum Data Plane Cores	1	1	1
Network Interfaces	2	4	8
Supported IP/Nodes	Unlimited	Unlimited	Unlimited
Minimum Memory Required <sup>2</sup>	6G	8G	10G
Minimum Hard Disk/Storage	35G	35G	35G

On NSv deployments with Jumbo Frame support enabled, the Minimum Memory requirements are higher. This increases TCP performance. See the Memory Requirements on NSv with Jumbo Frames Enabled vs Disabled table that follows.

NS∨ Model	Minimum Memory – Jumbo Frames Enabled	Minimum Memory – Jumbo Frames Disabled
NSv 270	10G	8G
NSv 470	14G	10G
NSv 870	18G	12G

#### MEMORY REQUIREMENTS ON NSV WITH JUMBO FRAMES ENABLED VS DISABLED

<sup>1</sup>If the actual number of cores allocated exceeds the number of cores defined in the previous table, extra cores are used as CPs.

<sup>2</sup>Memory requirements are higher with Jumbo Frames enabled. See the Memory Requirements on NSv with Jumbo Frames Enabled vs Disabled table.

# **Backup and Recovery Information**

In certain situations, it might be necessary to contact SonicWall for help as directed in SonicWall Support, or visit SonicWall, use SafeMode, or deregister the NSv virtual machine:

- If the splash screen remains displayed, this can indicate that the disk is corrupted. Contact SonicWall Technical Support for assistance.
- If the disk is not recoverable, then the NSv virtual machine needs to be deregistered with MySonicWall. Contact technical support for more information.
- If SonicOS/X does not boot up, you can go into SafeMode and download the log files, upload a new SonicOS/X image, or take other actions. For more information about SafeMode, see Using SafeMode on the NSv.
- If SonicOS/X fails three times during the boot process, it boots into SafeMode. Verify that the minimum required memory is available and allocated based on the NSv model. If it still cannot boot up, download the logs while in SafeMode and contact SonicWall Technical Support for assistance.

Moving configuration settings from SonicWall physical appliances to the NSv is not supported. However, configuration settings can be moved from one NSv to another. Contact SonicWall Technical Support for assistance.

# Exporting and Importing Firewall Configurations

Moving configuration settings from SonicWall physical appliances to the NSv is not supported. However, configuration settings can be moved from one SonicOS/X 7 NSv to another or from an NSv running SonicOS

6.5.4.4 to an NSv running SonicOS 7.0.1 or higher (but not SonicOSX).

Go to https://www.sonicwall.com/support/technical-documentation/ for more information about exporting and importing configuration settings. Search for **SonicOS/X 7 updates and upgrades**.

# **Github Repository**

SonicWall NSv templates are available in the Github repository:

- https://github.com/sonicwall
- https://github.com/sonicwall/sonicwall-nsv-azure-templates

# Upgrading from SonicOS 6.5

SonicOS/X 7 NSv supports only fresh deployments. You can register NSv as SonicOS (Classic mode) or SonicOSX (Policy mode). If running SonicOS, you can import settings from a 6.5.4.4 NSv. If the NSv is registered as SonicOSX, you cannot import settings and must manually navigate policies, application rules, and content filtering rules for SonicOS/X 7 NSv installations. Note that there are console, API, and SonicOS/X web approaches to completing these configurations.

- (i) **NOTE:** Upgrading to SonicOS/X 7 from SonicOS 6.5.4 requires a Secure Upgrade Path key that must be purchased separately. You can choose from any of the following:
  - SONICWALL NSV 270 SECURE UPGRADE VIRTUAL APPLIANCE ONLY NO ATTACHED SUBSCRIPTION (EXISTING SONICWALL CUSTOMERS ONLY)
  - SONICWALL NSV 470 SECURE UPGRADE VIRTUAL APPLIANCE ONLY NO ATTACHED SUBSCRIPTION (EXISTING SONICWALL CUSTOMERS ONLY)
  - SONICWALL NSV 870 SECURE UPGRADE VIRTUAL APPLIANCE ONLY NO ATTACHED SUBSCRIPTION (EXISTING SONICWALL CUSTOMERS ONLY)
  - SONICWALL NSV 270 SECURE UPGRADE PLUS ESSENTIAL EDITION (2YR, 3YR, or 5YR)
  - SONICWALL NSV 470 SECURE UPGRADE PLUS ESSENTIAL EDITION (2YR, 3YR, or 5YR)
  - SONICWALL NSV 870 SECURE UPGRADE PLUS ESSENTIAL EDITION (2YR, 3YR, or 5YR)

#### To upgrade an existing SonicOS 6.5.4.v NSv deployment to SonicOS 7.0.1 or higher:

- 1. Purchase a Secure Upgrade license key.
- 2. Log into MySonicWall and register the Secure Upgrade serial number. Enter a descriptive "friendly" name in the available field, shown here as "SecureUpgrade1."
- 3. Click Choose management options.
- 4. In the Secure Upgrade popup window, select Register Only at the top.
- 5. Select the Trade-In Unit from the list of registered NSv instances. This is the SonicOS 6.5.4.v NSv instance to be upgraded to SonicOS 7.
- 6. Click **Done** after selecting the Trade-In Unit. The Secure Upgrade serial number is then registered to your MySonicWall account.

- 7. The action item Secure Upgrade Transfer is added to the To do list at the bottom of the page. You can perform the service transfer *after* you have deployed the SonicOS 7 NSv instance and moved the configuration settings ("prefs") from the SonicOS 6.5.4.v NSv to the new SonicOS 7 NSv. The service transfer moves all active services from the SonicOS 6.5.4.v NSv to the new SonicOS 7 NSv and then deregisters the SonicOS 6.5.4.v NSv.
  - () **NOTE:** If you do not perform the service transfer within 60 days, the transfer is performed automatically.
- 8. Deploy a new SonicOS 7 NSv instance with the desired model and platform.
- 9. Register the SonicOS 7 NSv using the **Secure Upgrade** serial number. When prompted to select either Classic mode or Policy mode, select Classic mode. Classic mode supports configuration settings imported from a SonicOS 6.5.4.v NSv.

Registration initiates a 60-day countdown at the end of which the SonicOS 6.5.4.v NSv is deregistered, completing the Secure Upgrade Transfer.

- 10. Log into the SonicOS 6.5.4.v NSv and export the configuration settings to a file on your management computer.
- Log into the SonicOS 7 NSv and import the configuration settings. The upgrade is now complete and the SonicOS 7 NSv is ready for use.

# Upgrading to a Higher Capacity NSv Model

It is possible to move up to a higher capacity NSv model, but not down to a lower capacity model. Refer to the knowledgebase article: https://www.sonicwall.com/support/knowledge-base/how-do-i-upgrade-from-one-nsv-model-to-another/190503165228828/

For additional details, go to https://www.sonicwall.com/support/technical-documentation/ and search for SonicOS/X 7 updates and upgrades.

For details on the number of process and memory to allocate to the virtual machine to upgrade, refer to Product Matrix and Requirements.

# Creating a MySonicWall Account

A MySonicWall account is required to obtain the OVA file for initial installation of the NSv virtual machine, for product registration to enable full functionality of SonicOS/X features, and for access to licensed security services. For a High Availability configuration, MySonicWall provides a way to associate a secondary NSv that can share security service licenses with your primary virtual machine.

MySonicWall registration information is not sold or shared with any other company.

#### To create a MySonicWall account:

- 1. In your web browser, navigate to https://www.mysonicwall.com.
- 2. In the login screen, click the **Sign Up** link.



- 3. Complete the account information, including email and password.
- 4. Enable two-factor authentication if desired.
- 5. If you enabled two-factor authentication, select one of the following authentication methods:
  - Email (one-time passcode) where an email with a one-time passcode is sent each time you log into your MySonicWall account.
  - **Microsoft/Google Authentication App** where you use a Microsoft or Google authenticator application to scan the code provided. If you are unable to scan the code, you can click on a link for a secret code. After the code is scanned, you need only click a button.
- 6. Click Continue to go to the COMPANY page.
- 7. Complete the company information and click **Continue**.
- 8. On the YOUR INFO page, select whether you want to receive security renewal emails.
- 9. Identify whether you are interested in beta testing of new products.
- 10. Click **Continue** to go to the **EXTRAS** page.
- 11. Select whether you want to add additional contacts to be notified for contract renewals.
- 12. If you opted for additional contacts, input the information and click Add Contact.

#### 13. Click Finish.

- 14. Check your email for a verification code and enter it in the **Verification Code** field. If you did not receive a code, contact Customer Support by clicking on the link.
- 15. Click **Done**. You are returned to the login window so you can login into MySonicWall with your new account.

# Installing SonicOS/X on the NSv Series

### **Topics:**

- Supported NSv Models
- Task List for an NSv Virtual Machine Setup
- Installing NSv on Azure
- Accessing Your NSv in the Azure Portal
- Forwarding Traffic to Your NSv
- Testing Traffic Through Your NSv
- Troubleshooting Installation Configuration

# Supported NSv Models

Determine the NSv instance type required before starting installation.

#### **NSV MODELS (VIRTUAL MACHINE SIZES)**

SonicWall NSv Model	Azure	Interface Count <sup>1</sup>	Core Count
NSv 270	Standard D2 v2	2	2
NSv 470	Standard D3 v2	4	4
NSv 870	Standard D4 v2	8	8

(i) **NOTE:** The maximum number of NICs supported by SonicWall NSv is always eight for all models. But the total number of interfaces in an NSv instance could be constrained by the NSv virtual machine.

For NSv sizing and pricing information, see:

- https://azure.microsoft.com/en-us/pricing/details/virtual-machines/linux/
- https://docs.microsoft.com/en-us/azure/virtual-machines/windows/sizes-general

<sup>1</sup>The maximum number of interfaces supported on an NSv instance is defined by the type of Azure virtual machine. For example, if more than two interfaces are required for an NSv 270, use the NSv 270 with an Azure virtual machine supporting a higher number of interfaces.

2

# Task List for an NSv Virtual Machine Setup

The process for setting up an NSv virtual machine is summarized in three main tasks:

- 1. Install the NSv virtual machine
  - Installing NSv on Azure
- 2. Register the NSv on MySonicWall
  - Registering the NSv Appliance from SonicOS/X
- 3. Configure traffic forwarding to the NSv
  - Forwarding Traffic to Your NSv in Azure
  - Testing Traffic Through Your NSv in Azure

# Installing NSv on Azure

SonicWall NSv is deployed on Azure by using a solution template. The template is a JSON file, which is loaded into Azure through a web page. Templates are a means to deploy virtual machines in Azure while also creating/modifying existing resources. Templates use the Azure Resource managers to support not just the deployment of the NSv but also of other virtualized network functions.

This section details two deployment procedures:

- To install from Azure Marketplace
- To Install from an Azure template

#### To install from Azure Marketplace:

- 1. In your browser, navigate to https://portal.azure.com/ and log into your Microsoft Azure account.
- 2. Navigate to SonicWall NSv on Azure Marketplace at https://azuremarketplace.microsoft.com/enus/marketplace/apps/sonicwall-inc.sonicwall-nsv-firewall-security-vpn-router, click GET IT NOW, and then click Continue to display the SonicWall NSv (Firewall/Security/VPN/Router)-BYOL page.
- 3. On the **SonicWall NSv (Firewall/Security/VPN/Router)-BYOL** page, click **Create** at the bottom to get started.

The **Basics** screen of the NSv configuration window displays.

Microsoft Azure		A Search resources, services, and docs
Create a resource	Home > SonicWall NSv (Firewall/Security/VPN/Rcu Create SonicWall NSv (Firewal ×	ter) (Staged) > Create SonicWall NSv (Firewall/Security/VPN/Router) > Basics Basics
i≣ All services		
- 🛨 FAVORITES	Basics >	* VM Name 🚯
🖪 Dashboard	<ul> <li>Configure basic settings</li> </ul>	
📕 All resources	Instance Details	SSH usemame: "management"
📦 Resource groups	Configure Instance Details	
🔇 App Services		* Authentication type @
Function Apps	3 Summary >	Password SSH public key
🧃 SQL databases		* Password 🚯
🧭 Azure Cosmos DB	Buy	·····
Virtual machines	4	* Confirm password
Virtual networks		······
Storage accounts		Subscription
🚸 Load balancers		
Azure Active Directory		Kesource group      (New) sonicwallnsy
🕒 Monitor		Create new
🗣 Advisor		* Location
Oost Management + Billing		East US 🗸
Help + support		
Security Center		
		ок

- 4. On the **Basics** screen, configure the following options:
  - VM Name Type in a descriptive name for this NSv instance. Consider using lowercase letters, numbers and hyphens, as this name is used to create the default DNS Prefix, which has some restrictions. You can, however, adjust the DNS Prefix as needed.



- (i) **NOTE:** The **SSH username** is set to *management* by default. This is the user name for accessing the NSv console using SSH. This is not the NSv administrator user name, but is a user name created as part of an NSv deployment.
- Authentication type Select either SSH public key or Password as the authentication method for the previous management SSH username. The default for the template is Password.
  - If you selected **Password** for **Authentication Type**, type the desired password into the **Password** and **Confirm password** fields. The password must be between 12 and 72 characters in length and contain at least three of the following character types:
    - Uppercase character
    - Lowercase character

- Number
- Special character (non-alpha-numeric, such as !@#\$%^&\*()\_+}{"|:>?<)
- If you selected **SSH public key** for **Authentication Type**, type the SSH RSA public key file name as a string into the **SSH Public Key** field.
- **Subscription** Select the Azure subscription on which to deploy the resources for this NSv instance.
- Resource group Create new or select an existing resource group from the list.

A resource group is a user defined friendly name for a collection of resources. If you are deploying on Azure for the first time, click **Create new**. If you already have a network configured and some virtual machines, then you might wish to use an existing resource group. If you are deploying for test purposes, consider creating a new resource group so you can easily delete the resources, if needed.

- If you select **Create new**, type a name for this resource group into the associated text field, and then select a location for it from the **Location** drop-down menu.
- If you select **Use existing**, select the resource group to use from the associated drop-down menu.
- Location Select the Azure location where the resources are deployed.
- 5. Click **OK** to continue.

The **Instance Details** screen displays.

Create	e SonicWall <mark>N</mark> Sv (Firew	al ×	Instance Details	Choose Browse the av	a size	features						
				Search			Compute type		Disk type			vCPUs
1	Basics	~	* Virtual machine size 💿 >				Current generation	*	All disk types		~	1 0
	Done		1x Standard D2 v2									
			* Virtual Network	RECOMME	SKU	TYPE	COMPUTE VCPUS	GB RAM	DATA DISKS	MAX IOPS	LOCAL SSD	PREMIUM
2	Instance Details	>	(new) VNET									
~	Configure Instance Details		* Subsets @	Available								
			Review subnet configuration	*	D2_v2 📵	Standard	General purpose 2	7	8	8x500	100 GB	No
3	Summary SonicWall NSv (Firewall/Securit	×.		*	D3_v2 💿	Standard	General purpose 4	14	16	16x500	200 GB	No
-			* Public IP Address   (new) soniovallosvin	*	D4_v2 0	Standard	General purpose 8	28	32	32x500	400 GB	No
	Dine	25	(new) somewannsv-ip		0/ 2.0	6				C1 500		
4	buy >	>	* DNS Prefix for the public IP Address 🚯		05_02 @	Standard	General purpose 16	00	64	64x500	800 GB	No
			sonicwallnsv-1aa87b62e6 🗸									
			eastus.cloudapp.azure.com									
			* Management source IP 👩									
			81.24.248.16									
			* Storage Account @									
			(new) sonicwallnsv									
			- 2									
				Select	( ) ( )							
			ОК									

6. Select **Virtual machine size**, then select the row with the equivalent for the NSv model you want to deploy in the **Choose a size** screen. Click **Select**.

Virtual Machine Size in NSv	NSv Model
Standard_D2_v2	NSv 270
Standard_D3_v2	NSv 470
Standard_D4_v2	NSv 870

7. Select Virtual Network to configure the virtual network. Create new under Choose virtual network is selected by default and the Create virtual network settings are displayed.

Instance Details ×	Choose virtual network $\qquad  imes$	Create virtual network $\Box$ $\times$
Virtual machine size      1x Standard D2 v2	These are the virtual networks in the selected subscription and location 'East US'.	* Name VNET * Address space
(new) VNET	Create new	10.1.0.0/16 10.1.0.0 - 10.1.255.255 (65536 addresses)
Subnets  Onfigure subnets	+ 1182-a-corevnet 1182-a-nsv	
Public IP Address      (new) sonicwallnsv-ip	(+++++++++++++++++++++++++++++++++++++	
DNS Prefix for the public IP Address	(+++++++++++++++++++++++++++++++++++++	
eastus.cloudapp.azure.com Management source IP	Hosta B652x64-corevnet B652x64-nov	
	firewall/Vnet R219-A-nsv	
Storage Account      Configure required settings	<pre>pdb-1480-corevnet pdb-1480-nsv</pre>	
	pdb-1483-corevnet pdb-1483-nsv	
	pdb-rc219-corevnet pdb-rc219-nsv	
	R219-A-corevnet R219-A-nsv	
	soh-devserver-corevnet	
	VNET testsolution33	
OK		ОК

#### Under Create virtual network:

- Name This is the name of virtual network the NSv is deployed on. Leave the default, VNET.
- Address space The template default is 10.1.0.0/16. This is a network address in CIDR format representing the virtual network address space. Accept the default or optionally configure a different address space, using the same format.
- 8. Click **OK**.
- 9. Select **Subnets** to configure the subnets for the WAN and LAN zones.

Instance Details ×	Subnets	Π×
* Virtual machine size @	* WAN subnet name	
1x Standard D2 v2	WAN	~
* Virtual Network	* WAN subnet address prefix	
(new) VNET	10.1.0.0/24	~
Subnets e	* LAN subnet name	
Configure subnets	LAN	~
	* LAN subnet address prefix	
* Public IP Address	10.1.1.0/24	~
(new) sonicwallnsv-ip		
* DNS Prefix for the public IP Address 🚯		
sonicwallnsv-1aa87b62e6 🗸		
eastus.cloudapp.azure.com * Management source IP		
* Storage Account  Configure required settings		
ОК	OK	

- **WAN subnet name** The name of the WAN subnet. The default is WAN. If you have an existing network on Azure you might want to change the value.
- WAN subnet address prefix A sub-network of the Address space configured in Step 7, defined for WAN traffic. For example, 10.1.0.0/24.
- LAN subnet name The name of the LAN subnet. The default is LAN. If you have an existing network on Azure you might want to change the value.
- LAN subnet address prefix A sub-network of the Address space configured in Step 7, defined for LAN traffic. For example, 10.1.1.0/24.
- 10. Click OK.
- 11. Select **Public IP Address**. **Create new** is selected by default and the **Create public IP address** settings are displayed. You also have the option to select an existing public IP address to reassign it for use with your NSv.

Instance Details ×	Choose public IP address Oynamic public IP address that are not in use won't have an IP address assigned to them.	× Create public IP address □ ×
* Virtual machine size      1x Standard D2 v2	These are the public IP addresses in the selected subscription and location 'East US'.	* Name sonicwallnsv-ip
Virtual Network      (new) VNET	+ Create new	SKU 🛛 Sku 🖉 Standard
Subnets O > Configure subnets	None	
* Public IP Address  (new) sonicwallnsv-ip	1182-a-nsv-publicip 1182-a-nsv 146.62.187.179 (	
* DNS Prefix for the public IP Address ()	1422A-nsv-publicip 1422A-nsv 40,11736.33 (Sta	
sonicwallnsv-1aa87b62e5 🗸	1483A-nsv-publicip 1483A-nsv 157,55177,255 (-	
* Management source IP 🛛	8652:64-nsv-publicip 8552:64-nsv 168.63.187.59 (St.	
* Storage Account  Configure required settings	pdb-1480-nsv-publicip pdb-1480-nsv-publicip	
	soh-devserver-nsv-publicip soh-devservernsv 138.91,27,213 (	
	soh-devienver-nip 104,41,140,193 (	
OK		ОК

- Under **Create public IP address**, accept the prepopulated name or type a different name into the **Name** field.
- For SKU, select Basic or Standard. The default is Basic.
- For Assignment (if displayed), select Dynamic or Static. The default is Dynamic.
- 12. Click **OK**.
- 13. In the **DNS Prefix for the public IP Address** field, configure the DNS name for the NSv. This must be a unique DNS name for accessing the management interface of the NSv virtual machine. When the NSv virtual machine is created, the WAN uses a public IP and is assigned the DNS name defined here.

Instance Details	
<ul> <li>Virtual machine size ()</li> </ul>	
1x Standard D2 v2	/
<ul> <li>Virtual Network</li></ul>	``
(new) VNET	
* Subnets 🗿	
Review subnet configuration	
* Public IP Address	
(new) sonicwallnsv-ip	)
* DNS Prefix for the public IP Address (	•
sonicwallnsv-1aa87b62e6	~
and us aloudan	azure.com
eastus.cioudapp	
<ul> <li>Management source IP</li></ul>	~
* Management source IP 💿 81.24.248.16	~
<ul> <li>Management source IP          <ul> <li>81.24.248.16</li> <li>* Storage Account</li></ul></li></ul>	~

14. In the **Management source IP** field, type in the public IP address that is allowed to access this NSv virtual machine for HTTPS and SSH management.

You can find out your public IP address by typing **what is my IP** into Google or another search engine in a different browser window/tab. Additional addresses can be added later in Azure.

15. Select **Storage Account**. **Create new** is selected by default, displaying the **Create storage account** settings. You also have the option to select an existing storage account.

Instance Details ×	Choose storage account >	✓ Create storage account □ ×
Virtual machine sze      v2		* Name sonicwallnsv v
* Virtual Network  (new) VNET	Timese are the subvage accounts in the selected subscription and location case US.	core.windows.net Account kind  Storage (general surgese v1)
Subnets      Review subnet configuration	+ Creste new	Performance () Standard Premium
Public IP Address      (new) sonicwallnsv-ip	1102-st-nsv East US, Standar	Replication 🚯 Locally-redundant storage (LRS) 🗸 🗸
DNS Prefix for the public IP Address     sonicwallnpv-1as(7b62e6	1483a 1483A-nsv Eest US, Standar	
eastus.cloudapp.azure.com * Management source IP	6552:64 8652:64-nov East US, Standar	
81.24.248.16	pdb-1480 pdb-1480-msv East US, Standar	
Storage Account      Configure required settings	pdb-1403 pdb-1403-nsv East US, Standar	
	stage5add93852d3l41238a5 ARM_Deploy_Staging East US, Standar	
<i>a</i>	testsolution33 tastsolution33 Fast IIS Sandar	× ov

- For a new storage account, type in a unique **Name** for the storage account using only lowercase letters and numbers.
- Select the desired options for Account kind, Performance, and Replication.
- Click OK.
- 16. Click **OK** at the bottom of the **Instance Details** pane.

The **Summary** screen displays.

Create	e SonicWall NSv (Firew	al ×	Summary		×
1	Basics	~	<b>()</b> Validation passed		
2	Instance Détails Done	× 1	Basics Subscription Resource group Location	Visual Studio Professional(Converted to EA) sonicwallnsv East US	
3	Summary SonicWall NSv (Firewall/Securit		VM Name Password Instance Details Virtual machine size Virtual Network	Standard D2 v2 VNET	
4	Buy	>	WAN subnet WAN subnet address prefix LAN subnet LAN subnet address prefix Public IP Address	WAN 10.1.0.0/24 LAN 10.1.1.0/24 sonicwallnsv-ip	
			DNS Prefix for the public IP Add Management source IP Storage Account	sonicwallnsv-1aa87b52e6 81.24.248.16 sonicwallnsv	
			OK Download tem	plate and parameters	

17. Confirm the settings and then click **OK**. The **Buy** screen displays.



18. Read the **Azure Terms of use | privacy policy** and then click **Create** to agree to the terms and purchase the NSv instance.

Azure begins the deployment process and displays the Azure Dashboard page.

You can click the **Notifications** icon at the top to display the **Deployment in progress** notification window, then click **Deployment in progress** to view the progress.

Dashboard ∽ + №	w dashboard 🛛 🛪 Upload	🛨 Download 🥒 Edit 🗘 Share 🎤 Full screen 🗗 Ci	Notifications Dismiss: Informational Completed All
All resources All subscriptions	🖔 Refresh	Azure getting started made easy!	Epeloyment in progress     Running Deployment to resource group 'nsvazurepubs' is in progress.
	Storage account	on Azure in a few quick steps	
0	Network security group	Create DevOps Project	
↔ 1	Virtual network	N de Mt	
-publicip	Public IP address		
nic -	Network interface	Quickstarts + tutorials	
nic	Network interface		
AvailabilitySet	Availability set	Windows Virtual Machines  Provision Windows Server, SOL Server, SharePoint VMs	
	Storage account		
🚸 Loadbalancer	Load balancer	Linux Virtual Machines 🛛	
PortA-0	Network interface	Provision Ubuntu, Red Hat, CentOS, SUSE, CoreOS VMs	
PortA-1	Network interface	Contraction for the second	
PortB-0	Network interface	App Service Z Create Web Apps using NET Java Node is Pothon PHP	
PortB-1	Network interface		
	See more	Functions D Process events with a serverless code architecture	
💔 Service Health	Marketplace	SQL Database 2	

When finished, the notification window displays **Deployment succeeded**.



See Accessing Your NSv in the Azure Portal for more information about accessing the pages and settings for your NSv virtual machine available in the Azure portal.

The next step is to register your NSv virtual machine on MySonicWall. See Registering the NSv Virtual Machine with SonicOS/X for more information about registering your See Accessing Your NSv in the Azure Portal for more information about accessing the pages and settings for your NSv virtual machine available in the Azure portal.

After you have registered the NSv, see Forwarding Traffic to Your NSv for more information about accessing the pages and settings for your NSv virtual machine.

#### To Install from an Azure template:

Templates are a means to deploy virtual machines in Azure while also creating/modifying exiting resources. There are a few different types of templates: Quick, Solution and Simple. The following is an example of a Simple template that creates resources and defines their interconnections.

- Virtual Machine
- Storage Group

- Public IP
- 2 x Network Interfaces
- Virtual Network
- Network Security Policy

### Deploying NSv by way of Templates:

- 1. Log into Azure.
- 2. Click to load the webpage: https://github.com/sonicwall/sonicwall-nsv-azure-templates
- 3. Click Deploy to Azure.
- 4. The **Custom Deployment** page should come up:

Microsoft Azure		ې	Search resources, serv
Create a resource	Home > Custon deployment Custom deployment Deploy from a custom template		
i≣ All services	TEMPLATE		
FAVORITES	Customized template	Edit template Edit parameters	1 Learn more
All resources	BASICS	Concerne Survive Construction of Survey	
Resource groups	* Subscription	Visual Studio Professional(Converted to EA)	v
App Services	* Resource group	Create new Use existing	
🍜 Function Apps			
🥫 SQL databases	* Location	East US	~
🥭 Azure Cosmos DB	SETTINGS		
Virtual machines	* Location		
Virtual networks	* Storage Account O		
Storage accounts	Storage Account Type 🖲	Standard_LRS	
🔶 Load balancers	Storage Account New Or Existing 0	new	~
Azure Active Directory	Existing Storage Account RG 0		
Monitor	User Storage Container Name 0	vtd	

Enter information to define the custom deployment:

• **Resource Group**: The user-defined friendly name for a group of resources.

If you are deploying on a Azure for the first time, use "Create New," however, if you already have a network configured, and some virtual machines then you might wish to use an existing resource group. If you are deploying for test purposes, we suggest you create a new resource group so you can easily delete the resources later if needed.

- Location: The region where you wish to deploy.
- **Storage Account**: A new or existing storage account (we recommend you create a new storage account).

- **Storage Account Type**: The type of storage account you wish to use or create. Currently only "Standard\_LRS" is recommended.
- Storage Account New or Existing: Whether you wish to create or use an existing stage account.
- User Storage Container Name: The name of the container where the VHD file is stored.
- **DNS Name for Public IP**: When the See Accessing Your NSv in the Azure Portal for more information about accessing the pages and settings for your NSv virtual machine available in the Azure portal.
- The next step is to register your NSv virtual machine on MySonicWall. See Registering the NSv Virtual Machine with SonicOS/X for more information about registering your NSv.
- After you have registered the NSv, see Forwarding Traffic to Your NSv and Testing Traffic Through Your NSv for more information about forwarding traffic to it.
- A virtual machine is created, the WAN uses a public IP, this WAN IP is assigned a DNS name defined here.
- **SSH User Name**: The user name required to SSH into the NSv virtual machine.

This is not the NSv administrator's user name, but rather a username created as part of an NSv deployment.

- Authentication Type: Select either "password" or "sshPublicKey" as the authentication method.
- SSH Password: The password for the previously mentioned SSH user.

Password must contain one non alpha-numeric character (such as !@#\$%^&\*()\_+}{"|: >?<), one uppercase alphanumeric character and one numeric character.

- Management Access IP Source: Public IP address to allowed access to SonicWall NSv HTTPS & SSH management.
- VM Size: Select the virtual machine you wish to deploy:

SonicWall NSv Model	Azure
NSv 270	Standard D2 v2
NSv 470	Standard D3 v2
NSv 870	Standard D4 v2

• Base URL: This is the location of the template resources.

This should remain at the default value unless you are creating your own template.

• Virtual Network Name: The name of the virtual network the NSv is deployed on.

If you have an existing network on Azure, and would like to install the NSv on this network then this field should be populated with the network name. For example, 192.168.0.0/26.

- Virtual Network Address Prefix: The virtual network "Address space."
- Subnet WAN Name: The name of the WAN subnet.

If you have an existing network on Azure, you might want to change the default value or it can remain at the default.

- Subnet LAN Name: The name of the LAN subnet.
   If you have an existing network on Azure you might want to change the default value else it can remain at default.
- Subnet WAN prefix: A sub-network of the previous "Virtual Network Address Prefix" defined for WAN traffic, such as 192.168.2.0/24.
- Subnet LAN prefix: A sub-network of the previous "Virtual Network Address Prefix" defined for LAN traffic, such as 192.168.2.0/24.
- **Subnet WAN Start Address**: The starting address from which the virtual network provides through DHCP addresses to host on the WAN subnet.
- **Subnet LAN Start Address**: The starting address from which the virtual network provides through DHCP addresses to host on the LAN subnet.
- 5. After filling in all the values, click **I agree to the terms and conditions stated above** and then click **Purchase** to deploy the template and create the SonicWall NSv instance.

:=	All services			
-		" Management Access IP Source 😈	81.24.248.16	
*	FAVORITES	* Vm Size <b>0</b>	Standard_DS3_v2 V	
	Dashboard	Base Url	https://software.sonicwall.com/azurebeta/	
	All resources	Virtual Network Name <b>0</b>	firewallVnet	
<b>()</b>	Resource groups	Virtual Network Address Prefix 0	192.168.0.0/16	
0	App Services	Subnet WAN Name 0	WAN-X1	
4	Function Apps	Subnet LAN Name 0	LAN-X0	
	SOL databases	Subnet WAN Prefix	192.168.1.0/24	
		Subnet LAN Prefix 0	192.168.2.0/24	
~	Azure Cosmos DB	Subnet WAN Start Address 0	192.168.1.4	
<b>9</b>	Virtual machines	Subnet LAN Start Address	192.168.2.4	
$\Leftrightarrow$	Virtual networks			
=	Storage accounts	TERMS AND CONDITIONS		
<b></b>	Load balancers	Azure Marketplace Terms Azure Mark	ketplace	* III
♦	Azure Active Directory	By clicking "Purchase," I (a) agree to the bill my current payment method for the frequency as my Azure subscription, unti	applicable legal terms associated with the offering; (b) authorize Microsoft to charge or fees associated the offering(s), including applicable taxes, with the same billing II discontinue use of the offering(s); and (c) agree that if the deployment involves 3rd	
0	Monitor	party offerings, Microsoft may share my offering.	contact information and other details of such deployment with the publisher of that	-
<b></b>	Advisor	I agree to the terms and conditions st	tated above	
0	Cost Management + Billing			
	Help + support	Pin to dashboard		
0	Security Center	Purchase		

It takes approximately 10 minutes to deploy NSv respective resources. You can view the progress by clicking the icons indicated in the following image:

				${\cal P}$ Search resources, se	rvices, and docs	<b>□</b> ×⊃	>_	. 🕸 O	0	Ŗ	@so soi	nicwall.c
								Notification	c			
Microsoft.Template - Overview								Notification	Di	ismiss: Inform	ational Con	npleted All
	۵ D	elete 🛇 Cancel ⋔	J Redeploy 🖸	Refresh				••• Deploy	ment in p	progress		Running
	0	Deploying						Deployment te	resource	group 'r171te	staaa' is in pr	ogress.
le Overview	Deplo Micro	yment name soft.Template				Last modified 7/9/2018, 3:44:43 PM						
E Outputs	Status Deplo	; ying				Duration 1 minute 14 seconds						
😫 Inputs	Subsc Visual	ription Studio Professional(Conv	verted to EA)			Correlation ID 1f1c05a9-05aa-4b27-8cef-e819b	e.					
E Template	Resou r171te	irce group estaaa										
-						*						
		RESOURCE		ТУРЕ	STATUS	TIMESTAN	N					
	۲	SonicWall-NSv-VM		Microsoft.Resources/deployments	Created	7/9/2018	8					
	٥	r171testaaa-interface-X1	1	Microsoft.Network/networkInterfaces	Created	7/9/2018	8					
	•	r171testaaa-interface-X0	0	Microsoft.Network/networkInterfaces	Created	7/9/2018	в					
	۲	firewallVnet		Microsoft.Network/virtualNetworks	OK	7/9/2018	в					
	0	storageAcountSetup1		Microsoft.Resources/deployments	ОК	7/9/2018	8					
	0	r171testaaa-NSG		Microsoft.Network/networkSecurityGro	ОК	7/9/2018	в					
	0	r171testaaa-PrimaryWA	NIP	Microsoft.Network/publicIPAddresses	ОК	7/9/2018	в					

6. To connect to the SonicWall NSv management GUI click **Virtual Machines** from the left menu. Then select the NSv virtual machine name, in the overview section a public IP address is displayed, In the example that follows, that is http://40.76.216.87/.

	ho Search resources, services, and docs		>_ ∰ ☺ ⑦ ₽ @sonicwall.c Sonicwall.inc.
			Notifications Dismiss: Informational Completed All
Delete O Cancel      Redeploy O Refresh     Deploying			Deployment in progress Running Deployment to esource group 'r171testaaa' is in progress.
Deployment name Microsoft.Template		Last modified 7/9/2018, 3:44:43 PM	
Status Deploying Subscription		Duration 1 minute 14 seconds Correlation ID	
Visual Studio Professional(Converted to EA) Resource group r171testaaa		1f1c05a9-05aa-4b27-8cef-e819b!	
14 RESOURCE 14 TYPE	the status	°↓ TIMESTAN	
SonicWall-NSv-VM Microsoft	t.Resources/deployments Created	7/9/2018	
r171testaaa-interface-X1 Microsoft	t.Network/networkInterfaces Created	7/9/2018	
<ul> <li>r171testaaa-interface-X0</li> <li>Microsoft</li> </ul>	t.Network/networkInterfaces Created	7/9/2018	
S firewallVnet Microsoft	t.Network/virtualNetworks OK	7/9/2018	
StorageAcountSetup1 Microsoft	t.Resources/deployments OK	7/9/2018	
r171testaaa-NSG Microsoft	t.Network/networkSecurityGro OK	7/9/2018	
r171testaaa-PrimaryWANIP Microsoft	t.Network/publicIPAddresses OK	7/9/2018	
	Delete       Cancel       Redeploy       V Refresh         Deploying       Deploying         Deploying       University       University         Visual Studio Professional(Converted to EA)       Resource group         1/21testaaa       1/2       TYPE         SonicWall-NSv-VM       Microsoft         1/12testaaa-interface-X1       Microsoft         1/12testaaa-interface-X1       Microsoft         firewallVnet       Microsoft         infirewallVnet       Microsoft	Performant         Cancel         Iterate         Refresh           Image: Deleter         Image: Cancel         Image: Can	Cancel      Pedeptoying     Concel      Pedeptoying     Pedeptoying     Concel      Pedeptoying     Pedeptoying

7. Login with the default SonicWall credentials "admin/sonicwall."

SonicWall - Authentica	tion X	+				×
← → ♂ ଢ	i 🔏 https:,	/40.76.216.87 ··· ♥ ☆ 🔍 Search	$\overline{\mathbf{A}}$	111	•	÷
		Username				

8. Now continue with the following section, Accessing Your NSv in the Azure Portal, or go on to Installing NSv on Azure.

# Accessing Your NSv in the Azure Portal

There are a number of pages and settings for your NSv virtual machine available in the Azure portal.

### **Topics:**

- Updating Your Dashboard and Accessing the NSv Resource Group
- Finding the Public IP Address of Your NSv
- Logging into Your NSv for SonicOS/X Management
- Viewing and Configuring Security Rules

### Updating Your Dashboard and Accessing the NSv Resource Group

The notification window for **Deployment succeeded** provides two buttons for your immediate use.



• Click **Pin to dashboard** to add links to your new NSv and its Azure configuration pages to your Azure **Dashboard** page. Click **Refresh** on the **Dashboard** page to view your new virtual machine, storage account, and network interface on the **Dashboard**.

Dashboard ∽ + №	ew dashboard 🛛 🛧 Upload	± Download ∥ Edit Ω Share ↓ Full screen β Clone   Delete	
All resources All subscriptions		Azure getting started made easy! Resources NSVAZUREPUBS	
	O Refresh	Caunch an app of your choice     On Azure in a few quick steps	U Refresh
nsvazurepubs	NID Dublic ID address	IS Croate DayOper Brokert	West US
nsvazurepubs-PrimarywA	Nutrie Public IP address	nide Mi	West US
nsvazurepubs-interface-X	Network Interface	insvazurepubs-interface-xi ivetwork interface	West US
nsvazurepubs-NSG	Network security group	Quickstarts + tutorials	West US
1100	Storage account	firewallVnet Virtual network	West US
1112	Network security group	nsvazurepubs Storage account	West US
(**) 112 a communit	Virtual network	Provision Windows Server, SQL Server, SharePoint VMs	West US
192 a new publicity	Public IP address		
The advant	Network interface	Linux Virtual Machines 🗠	
The state	Network interface	Provision Ubuntu, Red Hat, CentOS, SUSE, CoreOS VMs	
AvailabilitySet	Availability set		
C0140700220740234	Storage account	App Service Z	
<> firewallVnet	Virtual network		
	See more	Functions IZ Process events with a serverless code architecture	
Service Health	Marketplace	SQL Database IC Managed relational SQL Database as a Service	

• Click Go to resource group to display the Resource group page.

Home > nsvazurepubs				
nsvazurepubs Resource group				* ×
	🕂 Add 🛛 🗮 Edit columns 💼 Delete resource group	$\mathbf{O}$ Refresh $\rightarrow$ Move $ $ $\  \   \oplus$ Assign tags		
(🐑 Overview	Subscription (change) Visual Studio Professional(Convert Tags (change)	Deployments 123-8a5a-439d0e 3 Succeeded		
Activity log	Click here to add tags	200		
🝰 Access control (IAM)		<b>^</b>		
🛷 Tags	Filter by nome All types	✓ All locations	~	No grouping√
Events	7 items Show hidden types 🔀	ТҮРЕ ↑↓	LOCATION	
SETTINGS	firewallVnet	Virtual network	West US	
📣 Quickstart	nsvazurepubs	Virtual machine	West US	
Resource costs	nsvazurepubs	Storage account	West US	
Deployments	nsvazurepubs-interface-X0	Network interface	West US	
Policies	nsvazurepubs-interface-X1	Network interface	West US	•••
:= Properties	nsvazurepubs-NSG	Network security group	West US	
Locks	nsvazurepubs-PrimaryWANIP	Public IP address	West US	

### Finding the Public IP Address of Your NSv

On the **Dashboard** page or the **Resource group** page, click the virtual machine name link to display the **Public IP address** of your NSv virtual machine. The virtual machine name link has a description or type of *Virtual machine*.

Home > nsvazurepubs		
nsvazurepubs Virtual machine		
Search (Ctrl+/)	Connect ▶ Start ♥ Restart ■ Stop → Move	əte 🖸 Refresh
	insvazurepubs' is not using Managed Disks. Migrate to Managed Disks	to get more benefits. 🔿
	Resource group (change)	Computer name
Activity log	nsvazurepubs	nsvazurepubs
• • • • • •	Running	Linux
Access control (IAM)	Location	Size
🕐 Tags	West US	Standard D3 v2 (4 vcpus, 14 GB memory)
	Subscription (change) Visual Studio Professional(Converted to EA)	Public IP address 40.
X Diagnose and solve problems	Subscription ID	Virtual network/subnet
	Sadd9385-2d3F-4123-8a5a-439d8xa71da4	firewallVnet/WAN-X1
SETTINGS		DNS name nsvazurepubs.westus.cloudapp.azure.com

(i) **TIP:** Log into the NSv at the displayed public IP address for SonicOS/X management and to register the NSv on MySonicWall.

# Logging into Your NSv for SonicOS/X Management

### To log into your NSv for SonicOS/X management:

- 1. In the left navigation pane of Azure, click Virtual Machines.
- 2. Click the name of your NSv.
- 3. In the **Overview** screen, the IP address of the NSv is displayed under **Public IP address**.



- 4. Point your browser to https://<Public IP address>, using the public IP address of your NSv.
- 5. Log into SonicOS/X (default credentials: admin/password).

### Viewing and Configuring Security Rules

On the **Dashboard** page or the **Resource group** page, click the **NSG** link to view the inbound and outbound security rules. The NSG link has a description or type of **Network security group**.

nsvazurepubs-NSG Network security group							
Search (Ctrl+/)	« → Move 🛅	Delete 🖸 Refresh					
😨 Overview	Resource group ( nsvazurepubs	Resource group (change) nsvazurepubs			Security rules 8 inbound, 0 outbound		
Activity log	West US Subscription (char	nne)		1 subnets,	0 network interfaces		
Access control (IAM)	Visual Studio Prof Subscription ID	essional(Converted to EA)					
🥐 Tags	5 Tags (change)	14					
X Diagnose and solve problems	Click here to add	tags		^			
SETTINGS	Inbound secu	urity rules		~			
📩 Inbound security rules	PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION
Outbound security rules	100	Allow-HTTPS-management-from-IP	443	тср	10.000	Any	S Allow
Network interfaces	101	Allow-SSH-management-from-IP	22	тср	10000	Any	Allov
< li>✓ Subnets	102	Allow-HTTP-management-from-IP	80	ТСР	1.0.101.007	Any	Allow
<b>III</b> Properties	103	Allow-AzureLoadBalancer	Any	ТСР	168.63.129.16	Any	Allow
Locks	200	▲ Deny-HTTPS-management	443	тср	Any	Any	🕴 Deny
Automation script	201	Deny-SSH-management	22	тср	Any	Any	8 Deny
MONITORING	202	Deny-HTTP-management	80	ТСР	Any	Any	8 Deny
Diagnostics logs	300	▲ Default-Allow	Any	Any	Any	Any	Allow
	65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
Effective security rules	65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow
New support request	65500	DenyAllInBound	Any	Any	Any	Any	🙁 Deny
	Outbound se	curity rules					
	PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION
	65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow

The inbound rules control management access to the NSv. The Source for these rules is initially set to your public IP address, that you entered during the installation process for **Management Access IP Source**. To manage the NSv from another location, you need to add an inbound rule.

#### To add a new inbound rule for NSv HTTPS management access from another public IP address:

1. Click **Inbound security rules** in the left navigation pane of the Azure NSG page. The **Inbound security rules** page displays.

Но	Home > nsvazurepubs-NSG - Inbound security rules					
<u>ب</u>	, ↓ nsvazurepubs-NSG - Inbound security rules					
5	P     Search (Ctrl+/)     ≪     ▲ Add     ∞ Default rules					
	Overview	^	PRIORITY	NAME	PORT	PROTOCOL
	Activity log		100	Allow-HTTPS-management-from-IP	443	ТСР
2	Access control (IAM)		101	Allow-SSH-management-from-IP	22	ТСР
	P Tags		102	Allow-HTTP-management-from-IP	80	ТСР
	K Diagnose and solve problems		103	Allow-AzureLoadBalancer	Any	ТСР
	TINC		104	Allow-HTTPS-management-from-IP-2	443	ТСР
SE			200	Deny-HTTPS-management	443	ТСР
	Outbound security rules		201	Deny-SSH-management	22	ТСР

2. Click Add. The Add inbound security rule dialog appears.

Add inbound security rule
🗲 Basic
* Source ①
IP Addresses 🗸
* Source IP addresses/CIDR ranges 🚯
10.0.0/24
* Source port ranges 🚯
*
* Destination <b>1</b>
Any 🗸
* Destination port ranges 🚯
443 🗸
* Protocol
Any TCP UDP
* Action
Allow Deny
* Priority
105 🗸
* Name
Description
Add

3. For **Source**, select **IP Addresses**.

- 4. For **Source IP addresses/CIDR ranges**, type in your new public IP address or an address range in CIDR format.
- 5. Optionally fill in **Source port ranges** if you want to specify the port(s).
- 6. For **Destination**, select **Any**.
- 7. For **Destination port ranges**, type in **443** for HTTPS access.
- 8. For Protocol, select TCP.
- 9. For Action, select Allow.
- 10. For **Priority**, type in an available number that is less than (higher priority than) the number for the first **Deny** rule.
- 11. For **Name**, type in a descriptive name for this rule.
- 12. Optionally fill in the **Description** field.
- 13. Click Add.

# Forwarding Traffic to Your NSv

This section describes how to configure a route on your SonicWall NSv Series virtual machine so that you can pass traffic though the NSv.

If you have not yet registered your NSv on MySonicWall, do that now. See Registering the NSv Virtual Machine with SonicOS/X for more information. Your NSv must be registered to enable full functionality.

#### To configure a route on your NSv virtual machine:

- 1. If not already logged into the Azure portal, navigate to https://portal.azure.com/ and log into your Azure account.
- 2. In the Azure left navigation pane, click All services.



3. In the **All services Filter** field, type **Route**. The display changes to show only services with "Route" in their names.



- 4. Click Route tables.
- 5. On the Route tables page, click Add to create a new route table.

The Create route table dialog displays.



- 6. In the **Name** field, type in a name for this route table.
- 7. For **Subscription**, select the subscription you are using in Azure.
- 8. For **Resource group**, select **Create new** if you are using the route table for other networks, or select **Use existing** if you are using the route table for this network only. If you select **Use existing**, you can use the drop-down menu to select the same resource group you are using for your NSv.
- 9. The **Location** field should already display the same location you selected for your NSv.
- 10. For **BGP route propagation**, accept the default of **Enabled**.

Create route table You can add routes to this table after it's created.		×
* Name		
nsvazurepubs-rt	~	]
* Subscription		
Visual Studio Professional(Converted to EA)	~	]
* Resource group Create new   Use existing		
nsvazurepubs	$\sim$	]
* Location		
West US	$\sim$	]
BGP route propagation		
Disabled Enobled		

11. Click **Create** to create the route table. After a brief wait, **Notifications** displays **Deployment succeeded** and the new route table appears in the **Route tables** screen.

Route Sonicwall I	tables nc.			
📥 Add	Edit columns	U Refresh		Assign tags
Subscript	ions: Visual Studio Pr	rofessional(Co	nverted	to EA)
Filter by	name			All resource groups
1 items				
NA	ME 14			
- 4	nsvazurepubs-rt			
	12			

- 12. Click on the route table name.
- 13. In the route table screen, under **SETTINGS**, click **Routes**.

Home > Route tables >	nsvazurepubs-rt -rt
₽ Search (Ctrl+/)	«
🗳 Overview	
Activity log	
💒 Access control (IA	M)
🛷 Tags	
🗙 Diagnose and solv	e problems
SETTINGS	
🚔 Configuration	
Routes	
↔ Subne	

- 14. On the **Routes** screen, click **Add** to add a route to the route table.
- 15. In the Add route screen, for Route name, type in a descriptive name such as default\_route.
- 16. For Address prefix, type in 0.0.0/0 to elect all traffic to be forwarded to the NSv.
- 17. For **Next hop type**, select **virtual machine** from the drop-down menu.
- 18. For **Next hop address**, type in the IP address of the NSv X0 interface.

Home > Route tables > nsvazurepubs-rt - Routes > Add route		
Add route		×
* Route name		
default_route	~	]
* Address prefix 🜒		
0.0.0.0/0	~	
Next hop type 🛛		
Virtual appliance	~	
* Next him address @		
192.168.2.4	~	Ĺ
<ul> <li>Ensure you have IP forwarding enabled on your virtual appliance. You can enable this by navigating to the respective network interface's IP address settings.</li> </ul>		
OK		

- 19. Click **OK**. This creates the route.
- 20. Next, you need to associate the route table. In the **Route table** options, click **Subnets**.

Home > Route tables > nsvazurepubs-rt -	Routes		
Route table			
Search (Ctrl+/)	« 🕇 Add		
😫 Overview	Search routes		
Activity log	NAME	ADDRESS PREFIX	NEXT HOP
Access control (IAM)	default_route	0.0.0.0/0	192.168.2.4
🛷 Tags			
X Diagnose and solve problems			
SETTINGS			
Configuration			
📸 Routes			
Subnets			
III Proper			

21. In the **Subnets** screen, click **Associate**.

Home > Route tables > nsvazurepubs-rt - Su	ibnets
Search (Ctrl+/)     «	Associate
Access control (IAM)	No results.

22. In the **Associate subnet** screen, click **Virtual network**. The resources with possible virtual networks are displayed to the right under **Resource**.

epete-rt	anei	Ŷ	Resource
Virtual Cheose	network e a vitual network	>	() frewalWhet westus
) Subnet		>	

23. Click the desired resource. The display on the right changes to the **Choose subnet** screen and shows the possible subnets available for that resource.



- 24. Under **Choose subnet**, click **LAN-X0**. Because we entered the X0 IP address previously for **Next hop address**, the X0 subnet must be selected here.
- 25. Click **OK** at the bottom of the screen. Azure performs the association and the **LAN-X0** subnet appears on the screen.

Q	Search (Ctrl-/)	«	+ Associate		
-12	Overview	_	Search subnets	ADDRESS RANGE	VIRTUAL NETWOR
-	Activity log			102 168 2 0/24	firmually/nat
<b>.</b>	Access control (IAM)		LUNEAU	172.100.2.0/24	mewdiivhet
1	Tags				
×	Diagnose and solve problems				
ETTI	NGS				
	Configuration				
	Routes				

This completes the configuration required for forwarding traffic through the NSv. Continue to Testing Traffic Through Your NSv.

# Testing Traffic Through Your NSv

After configuring a route for forwarding traffic on your NSv, you can verify it with some test traffic. You can send traffic from any client machine or virtual machine on the same subnet as the route you configured. In our configuration, this is the LAN-X0 subnet, or 192.168.2.0/24.

For example, you could create an Ubuntu virtual machine in Azure, using the same options as your NSv for the following settings:

- Subscription
- Resource group
- Location
- Virtual network
- Subnet (such as LAN-X0 or 192.168.2.0/24)

#### To send traffic through your NSv:

- 1. On your client machine or virtual machine (Ubuntu, for example), open a console window. For an Ubuntu virtual machine on Azure, click **Serial Console** in the **Virtual machine** options.
- 2. Type ping 192.168.2.4 on the command line.

Q Search (Ctr(+/)		« '	? Feedt	ack 🛛	🛞 🎟				
		6	4 bytes	from	4.2.2.2:	icmp_seq=62	tt1=53	time=6.02	ms
Disaster recovery	*	- 15	4 bytes	from	4.2.2.2:	1cmp_sed=63	tt1=53	time=3.88	ms
			4 bytes	from	4.2.2.2.	icmp_seq=64	tt1=53	time=3.99	me
Update management			4 bytes	from	4.2.2.2:	icmp_seq=66	tt1=53	time=6.00	ms
			4 bytes	from	4.2.2.2:	icmp seg=67	tt1=53	time=3.78	ms
Contraction inventory		6	4 bytes	from	4.2.2.2:	icmp seq=68	tt1=53	time=3.94	ms
2. 12 CT 19021		6	4 bytes	from	4.2.2.2:	icmp_seq=69	tt1=53	time=3.90	ms
The Ohange tracking			4 bytes	from	4.2.2.2:	icmp_seq=70	tt1=53	time=3.89	ms
III Balannaad			4 bytes	from	4.2.2.2:	icmp_seq=71	tt1=53	time=3.69	ms
Man command		6	64 bytes	from	4.2.2.2:	1cmp_seq=72	tt1=53	time=3.86	ms
		6	4 bytes	from	4.2.2.2:	1cmp_seq=73	tt1=53	time=4.18	ms
MONITORING			4 bytes	from	4.2.2.2:	1cmp_seq=74	tt1=53	time=3.83	ms
021217-1-0021-9			4 bytes	from	4.2.2.2:	icmp_seq=75	tt1=53	time=4.56	ms
iii Motries			4 bytes	free	4.2.2.2:	1cmp_seq=76	tt1=53	Eime=3.86	ms
			A bytes	From	4.2.2.2:	icap_sed=//	++1-53	C100e=3.76	Ins
Alerts (dassic)			A bytes	from	4.2.2.2.	icmp_sed=78	++1-52	time=2.59	ma
			4 bytes	from	4.2.2.2!	1cmp_sed=80	TE1=53	Cime=3.95	ms
Magnostics strings			4 bytes	from	4.2.2.2:	icmp_seg=81	tt1=53	time=3.76	ms
Advisor monomendations		- 6	4 bytes	from	4.2.2.2:	icmp seq=82	tt1=53	time=3.67	ms
· PERIO PECATIONICADO D		6	4 bytes	from	4.2.2.2:	icmp seq=83	tt1=53	time=3.84	ms
💑 Diagram		e	4 bytes	from	4.2.2.2:	icmp_seq=04	tt1=53	time=4.18	ms
SUPPORT + TROUBLESHOOTING									
💝 Resource health									
🕙 Boot diagnostes									
Y Reset password	н								
Andeploy									
Ubuntu Advartage support									
Serial console (Preview)									
3 New exponent sequest									

The pings should succeed.

- 3. Log into your NSv and navigate to the MONITOR | Appliance Health | Live Monitor page.
- 4. Scroll down to view the Connection Count chart. It should show a positive count, caused by the pings.



Other charts on the page also show activity. This verifies that traffic can be forwarded to the NSv.

# Troubleshooting Installation Configuration

If the NSv fails to come up, follow the instruction in Using the Virtual Console and SafeMode to go to the NSv Management Console window or the SonicOS/X CLI window. Check the boot messages:

() | NOTE: The error messages that follow indicate that the virtual machine cannot boot.

# **Insufficient Memory Assignment**

The following messages appear when the virtual machine has insufficient memory. This might occur when doing an NSv installation or an NSv product upgrade.

#### SonicOS/X boot message:

Insufficient memory 4 GB, minimum memory required 10 GB for NSv model: "NSv 800 Beta" Power off the Network Security virtual machine and assign 10 GB to this virtual machine.

This message can also appear in the Management Console logs as shown in the following images.

Menu	Mar 30 15:10:39 localhost Initializing SonicWall support services	
Sustem Info	Mar 30 15:10:38 localhost Completed configuring the operating environment for SonicOS	
Management Network	Mar 30 15:10:08 localhost insufficient memory 4 GB, minimum memory required 8 GB.	
Test Management Network	Mar 30 15:10:08 localhost Insufficient memory 4 GB, minimum memory required 8 GB.	
Diagnostics	Mar 30 15:10:07 localhost Total memory installed 4160884 Kb	
NTP Server	Mar 30 15:10:07 localhost CPU flags: fou ume de use tso mar nae moe ox8 anio seu mtrr	nge mca
Lockdown Mode	Mar 30 15:10:07 localhost CPU count: 2. Model "Intel(R) Xeon(R) CPU E5-2420 0 0 1 906	Hz"
Sustem Undate	Mar 30 15:10:07 localhost Configuring the operating environment for SonicOS	
Reboot   Shutdown	REMONT	
About	Mar 30 15:06:37 localhost Initializing SonicWall support services	
Lorrs	Mar 30 15:06:36 localhost Completed configuring the operating environment for SonicOS	
	Mar 30 15:06:06 localhost insufficient memory 4 GB, minimum memory required 8 GB.	
	Mar 30 15:06:05 localhost Total memory installed 4160884 Kb	
	Mar 30 15:06:05 localhost CPU flags: fou ume de ose tse mar nae mee cx8 anic sen mtrr	nge mea
	Mar 30 15:06:05 localhost CPU count: 2. Model "Intel(B) Xeon(B) CPU E5-2420 0 @ 1.906	Hz
1	Mar 30 15:06:05 localhost Configuring the operating environment for SonicOS	
	Reboot	
	Mar 30 15:05:51 localhost Unconfigure the operating environment for SonicOS	
	Mar 30 15:02:31 localhost Initializing SonicWall support services	
	Mar 30 15:02:31 localhost Completed configuring the operating environment for SonicOS	
	Mar 30 15:02:01 localhost Insufficient memory 4 GB, minimum memory required 8 GB.	
	Mar 30 15:02:01 localhost Total memory installed 4160884 Kb	
	Mar 30 15:02:00 localhost CPU flags: fpu ume de pse tsc msr pae mce cx8 apic sep mtrr	pge mca
	Mar 30 15:02:00 localhost CPU count: 2, Model "Intel(R) Xeon(R) CPU E5-2420 0 @ 1.90G	Hz"
	Mar 30 15:02:00 localhost Configuring the operating environment for SonicOS	
	Reboot	
	Mar 30 15:01:48 localhost Unconfigure the operating environment for SonicOS	
	Mar 30 14:59:55 localhost Initializing SonicWall support services	
	Mar 30 14:59:54 localhost Completed configuring the operating environment for SonicOS	
	Mar 30 14:59:24 localhost Insufficient memory 4 GB, minimum memory required 8 GB.	
	Mar 30 14:59:24 localhost Total memory installed 4160884 Kb	
	Mar 30 14:59:24 localhost CPU flags: fpu ume de pse tsc msr pae mce cx8 apic sep mtrr	pge mca
	Mar 30 14:59:24 localhost CPU count: 2, Model "Intel(R) Xeon(R) CPU E5-2420 0 @ 1.90G	Hz"
	Mar 30 14:59:24 localhost Configuring the operating environment for SonicOS	
	Reboot	
	Mar 30 14:59:11 localhost Unconfigure the operating environment for SonicOS	
	Mar 30 14:54:57 localhost Initializing SonicWall support services	
	Mar 30 14:54:56 localhost Completed configuring the operating environment for SonicOS	
	Mar 30 14:54:26 localhost Insufficient memory 4 GB, minimum memory required 8 GB.	
	Mar 30 14:54:26 localhost Total memory installed 4160884 Kb	
	Mar 30 14:54:26 localhost CPU flags: fpu ume de pse tsc msr pae mce cx8 apic sep mtrr	pge mca
Up / Down to select items	Mar 30 14:54:26 localhost CPU count: 2, Model "Intel(R) Xeon(R) CPU E5-2420 0 🛛 1.90G	lz"
TAB to move between views	Mar 30 14:54:25 localhost Configuring the operating environment for SonicOS	
Enter to action/edit an item	Reboot	
Space to hide/show side menu	Mar 30 14:54:12 localhost Unconfigure the operating environment for SonicOS	
	Mar 30 14:47:18 localhost Initializing SonicWall support services	

Memory might be insufficient without an insufficient memory log entry:

Menu	Mar 30 14:44:14 localhost Initializing SonicWall support services
System Info	Mar 30 14:44:12 localhost Completed configuring the operating environment for SonicOS
Management Network	Mar 30 14.44.12 localhost Completed configuring the operating environment for SonicOS
Test Management Network	Mar 30 14:44:11 localhost This NSv model supports 8 CPU, current CPU count is only 2, for impr
Diagnostics	Mar 30 14:44:11 localhost Total memory installed 8172912 Kb
NTP Server	Mar 30 14:44:11 localhost CPU flags: fou ume de ose tsc msr pae mce cx8 apic sep mtrr pge mca
Lockdown Mode	Mar 30 14:44:11 localhost CPU count: 2, Model "Intel(R) Xeon(R) CPU E5-2420 0 0 1.906Hz"
Sustem Update	Mar 30 14:44:11 localhost Configuring the operating environment for SonicOS
Reboot I Shutdown	Reboot
About	Mar 30 14:43:58 localhost Unconfigure the operating environment for SonicOS
Lons	Mar 30 14:39:40 localhost summert services, failed to contact
	Mar 30 14:35:19 localhost Initializing SomicWall summert services
	Mar 30 14:35:18 local host Completed configuring the operating environment for SopicOS
	Mar 30 14:35:17 localhost complete information file analable
	Man 30 14:35:17 localbost ho sgatch minimulation file available
	Hav 20 14:25 17 localbest fold memory instance of 2510 Mb
	has 20 14:25:17 locallost CDI anust: 2 Madal "Intel( $D$ ) Year( $D$ ) CDI FE 2420 0 a 1 QCUr"
	Mar 30 14:35.17 IDEATION CONSTRUCTOR AND A CONTROL OF C
	nar 30 14.55.17 IUCathust Cultifytering the uperating environment for Sunicus
Up / Down to select items TAB to move between views Enter to action/edit an item Space to hide/show side menu	
	Arrow keys: Navigate view Current Line: 1 Lines: 18

# Licensing and Registering Your NSv

3

**Topics:** 

• Registering the NSv Appliance from SonicOS/X

# Registering the NSv Virtual Machine with SonicOS/X

After you have installed and configured the network settings for your NSv Series virtual machine, you can log into SonicOS/X management and register it in your MySonicWall account. Registration of your SonicWall NSv Series virtual machine follows the same process as for SonicWall hardware-based appliances.

(i) **NOTE:** System functionality is extremely limited when registration is not complete. SeeUsing System Diagnostics for more information.

#### To register your NSv virtual machine:

- 1. Point your browser to your NSv Series WAN or LAN IP address and log in as the administrator (default admin / password).
- 2. Go to **Dashboard | System > Summary** and click **Register Device**.

SONICWALL	E NSv Unlicensed PHOME MONITOR To Device 🔀 NETWORK 📾	OBJECT 🥖 🚊 POLICY
	🕡 000000000000 / Home / Dashboard / System	
Dashboard		
— System 🤇	Device Summary Network Threat	
Legal Information	TRAFFIC DISTRIBUTION	TOP USERS
🔶 API		
	Device Registration heeded	
	Register Device	
	OBSERVED THREATS	SERVICES SUMMARY

3. At this point you can log into MySonicWall and name the NSv installation while providing the **Firewall Serial Number** and authorization code (**Auth Code**), and select a **Policy Mode Switching** option (**Classic** or **Policy**). Click **Register** to complete the registration.

MySonicWall Lo	ogin
MySonicWall Username MySonicWall Password	
Firewall Serial Number	
Auth Code Policy Mode Switching	

If you are unable to reach MySonicWall, use the **Keyset**, **Serial Number**, **Auth Code**, and **Registration Code** provided by your SonicWall representative in the **Settings** tab.

HOM	e 📶 monitor		🔀 NETWORK	🛃 ОВЈЕСТ	POLICY	🔩 🗗
00000000000 / Device / Setti	ngs / Licenses	•				Configuration 🔵 N
Security Services Summary	Settings					
MANAGE SECURITY SERVICES	ONLINE		MA	ANUAL UPGR	ADE	
There are two methods to activat	e, upgrade or renew se	ervices.				
1. Go to MySonicWall.com , t	then come back and syr	nchronize your cha	anges. Ent	ter keyset		
2. Make changes to the avail	able Licenses on the <mark>Se</mark>	ecurity Services Su	mmary.			
	Register			Serial		
			1	Number *		
			Aut	th Code *	-	
			Re	gistration Code *		
					_	
						Apply

Click **Apply** to complete the registration.

4. Log in to SonicOS/X and check that the licensing is enabled.

# SonicOS/X Management

4

**Topics:** 

- Managing SonicOS/X on the NSv Series
- Using System Diagnostics

# Managing SonicOS/X on the NSv Series

The X1 interface is the default WAN Interface and is set to use DHCP addressing by default, with HTTPS management enabled. To ease testing, you can utilize a DHCP server on the X1 connected network. If DHCP is not available, use the console to access the CLI and configure a static IP address.

The X0 interface is the default LAN interface, and also has HTTPS management enabled. Its IP address is set to 192.168.168.168 by default. You can map this interface to your own network during initial deployment of the OVF template. After deployment, you can reconfigure the IP address to an address in your network.

### To log into SonicOS/X for management of the NSv:

1. Point your browser to either the LAN or WAN IP address. The login screen is displayed.

When the X1 WAN interface is using DHCP addressing, DNS is also enabled. You can generally access the WAN address from any machine in your network.

If you have an existing network on 192.168.168.0/24 in your environment, you can access the default IP address of the X0 LAN interface of your NSv Series from a computer on that network for SonicOS/X management. The NSv Series X0 IP address is 192.168.168.168 by default.

 Enter the administrator credentials (default admin / password) and press Enter.
 The SonicOS/X management interface is displayed. You can navigate and update the configuration just as you would with any SonicWall network security virtual machine

# Using System Diagnostics

**Check Network Settings**, at **DEVICE | Diagnostics > Check Network Settings**. is a diagnostic tool that automatically checks the network connectivity and service availability of several predefined functional areas of

the NSv Series, returns the results, and attempts to describe the causes if any exceptions are detected. This tool helps you locate the problem area when users encounter a network problem.

S	ONICWALL	▲ NSv Unlicensed	HOME MONITO	DR 📕 DEVICE	🔀 NETWORK 👩 OBJECT	POLICY	💐 💽 Q 🛛
		<b>00401038B524</b> / Dev	ice / Diagnostics / Check	Network Settings			Configuration 🔵 No
FIREW							
	Settings	IPv4 IPv6					
	Status		CONNECTION				
-	Licenses	GENERALINETWORK	CONNECTION				
-	Administration						
-	Time						n Test All Selec
	Certificates						
-	SNMP	SERVER	IP ADDRESS	TEST RESULTS	NOTES	TIMESTAMP	PROGRESS
-	Firmware and Settings	Default Gateway (X1)	→ 10.203.26.1	Ping responded successfully	Ping sent 3 pkts, received 3 pkts, average < 5 ms	08/23/2020 17:54:50	
	Restart	DNS Server 1	→ 10.50.129.148				
11		DNS Server 2	→ 10.50.129.149				
2		Total: 3 item(s)					
****		SECURITY MANAGEN	1ENT				
Ê							
,®	Diagnostics						🚯 Test All Selec
_	Tech Support Report	SERVER		TEST RESULTS	NOTES	TIMESTAMP	PPOGRESS
-	Check Network Settings	My SonicWall	→	LOT NEODETS	HOLD	THE TAP	I NOONEDD

Specifically, Check Network Settings automatically tests the following functions:

- Default Gateway settings
- DNS settings
- MySonicWall server connectivity
- License Manager server connectivity
- Content Filter server connectivity

To use the **Check Network Settings** tool, first select it in the **Diagnostics** drop-down menu and then click the check box in the row for the item that you want to test. The results are displayed in the same row. A green check mark signifies a successful test, and a red X indicates that there is a problem.

To test multiple items at the same time, select the **Server** checkbox at the top of the table to select all items or select the checkbox for each desired item and then click **TEST ALL SELECTED**.

If the probes fail, you can click the arrow to the left of the **IP Address** field of the failed item to jump to the configuration page to investigate the root cause.

# Using the Virtual Console and SafeMode

**Topics:** 

- Connecting to the Console with SSH
- Navigating the NSv Management Console
- Using SafeMode on the NSv

# Connecting to the Console with SSH

SSH is used to connect to the virtual console of an NSv deployed on Azure.

#### To connect to the management console using SSH:

1. Launch PuTTY and type in the public IP address of the NSv on Azure.

You can find the public IP by clicking **Virtual Machines** in the Azure portal, then clicking the name of your NSv and locating the public IP on the **Overview** screen.

Nutry Configuration		? ×
Category:		
Session Logging Terminal Keyboard Bell Features Window Appearance Behaviour Translation Selection Colours Connection Data Proxy Telnet Rlogin Serial	Basic options for your PuTTY sess         Specify the destination you want to connect to         Host Name (or IP address)         40.         Connection type:         Raw       Telnet         Raw       Telnet         Saved Sessions         Default Settings	Port 22 O Serial Load Save Delete
	Close window on exit: Always Never Only on cle	an exit
About Help	Open	Cancel

- 2. For Port, type in 22 if it is not already set.
  - (i) **NOTE:** Changing the SSH port to anything other than 22 can prevent access to the SonicCore management console and the SonicOS/X CLI console.
- 3. For **Connection type**, **SSH** should already be selected by specifying port 22.
- 4. Click **Open** to open a console connection.
- 5. In the console window at the **login as** prompt, type in management, which is the SSH management user name defined during the NSv deployment.



6. At the **Password** prompt, type in the SSH management password you defined during deployment. The orange NSv management console displays.

🚰 40 PuTTY		-		<
-Menu-	System Info-			1
System Info	Model	: SonicWall Network Security - Virtual	Series	I
				ı
	Product Code	: 72004		ı
	Serial Number	: 0 70		l
	Model Name	: NSv 400 (Azure)		I
	SonicOS Version	: 6.5.0.2		I
	GUID			
	System Time	: Tue 2018-07-31 17:26:57 UTC		I
	Up Time	: 20 hours 2 minutes 50 seconds		I
	Load Average	: 0.3 1min 0.4 5min 0.5 10min		I
	SonicOS	: Operational		
				l
Up / Down to select items				
Entor to action/edit an item	To log into the S			I
Enter to decronyedit an item	https://192.168.1	.4/ on X1 interface		I
				I
				1

You can switch to the black SSH console window by pressing **Ctrl+s** and then the **space bar**. If you are prompted to log in at the **User** prompt, enter the SonicOS/X administrator credentials (default: *admin / password*).



SeeNavigating the NSv Management Console for more information about the options in the NSv management console.

# Navigating the NSv Management Console

The NSv management console provides options for viewing and changing system and network settings, running diagnostics, rebooting SonicOS/X, and other functions.

You can connect to the NSv management console by using PuTTY or a similar application to SSH to the public IP address of an NSv.

See Connecting to the Console with SSH.

#### To navigate and use the management console:

1. Press **Ctrl+s** and then press the **spacebar** to toggle between the SSH virtual console or NSv remote console and the NSv management console. That is, press the Ctrl key and 's' key together, then release

- Menu		
System Info	Mode 1	: SonicWall Network Security - Virtual Series
Management Network	Product Code	: 70000
Test Management Network	Serial Number	
Diagnostics	Model Name	: NSv Unlicensed Beta
NTP Server	SonicOS Version	: 6.5.0.0
Lockdown Mode	GUID	
System Update		
Reboot   Shutdown	System Time	: Tue 2018-03-27 20:58:06 UTC
About	Up Time	: 41 minutes 35 seconds
Logs	CPU Load	: 1.1 1min 1.1 5min 1.0 10min
	SonicOS	: Operational
	11	
	11	
	11	
Im > Down to select items	11	
TAB to move between views		
Enter to action/edit an item	To log into the S	onicWall web interface visit:
	https://192.168.	
	A CONTRACTOR OF THE OWNER OF	
	J I	
SonicWall (c) 2018   Uptime 41 mi	inutes	[Ctrl-s spacebar] to switch console

and press the **spacebar**. The NSv management console has an orange background.

- 2. The main menu is displayed in the side menu (left pane). Use the up/down arrow keys to move the focus between menu items. As the focus shifts, the right pane displays the options and information for that menu item. The currently selected item is highlighted in black.
- 3. Press the **Tab** key to move the focus from side menu to the main view (right pane), or vice versa.
- 4. In the main view, use the up/down arrow keys to move the focus between options. Items shown inside square brackets denote actionable items.

Г	-Test	Management	Network-				
	Ping			E	Ping	1	

5. To select an option for editing or to choose the associated action, use the up/down arrow keys to move the focus to the editable/actionable items and press the **Enter** key.

An edit/selection dialog is displayed in the middle of the main view following the option list. Some dialogs have selectable actions and some are information only:



Some dialogs are for input:



 Use the arrow keys as needed to move between selections in the dialog. To change a value, press Backspace to erase each character, then type in the new value. When ready, press Enter to commit the change or perform the selected action. You can dismiss the dialog by pressing Esc.

The NSv management menu choices are described in the following sections:

- System Info
- Management Network or Network Interfaces
- Test Management Network
- Diagnostics
- NTP Server
- Lockdown Mode
- System Update
- Reboot | Shutdown
- About
- Logs

## System Info



Some of the information in the System Info screen is dynamic. The following information is displayed:

- Model This is the model of the NSv virtual machine.
- Product code This is the product code of the NSv virtual machine.
- Serial Number The serial number for the virtual machine; this is a number unique to every NSv instance deployed. This number can be used to identify the NSv virtual machine on MySonicWall.
- Model Name This is the model name of the NSv virtual machine.
- SonicOS/X Version This is the currently running SonicOS/X version of the NSv virtual machine.
- GUID Every NSv instance has a GUID that is displayed here.
- System Time This is the current system time on the NSv virtual machine.
- Up Time This is the total time that the NSv virtual machine has been running.
- **Average Load** This shows the average CPU load for the last 1 minute, 5 minutes and 10 minutes. You can change the Average load time durations to view the CPU load over longer or shorter time periods.
- SonicOS/X This presents the current state of the SonicOS/X service on the NSv. Operational is
  displayed here when the SonicOS/X service is running normally, Not Operational when there is a
  problem with the service and Operational (debug) if the service is currently running in debug mode.

### Management Network or Network Interfaces

### **NETWORK INTERFACES SCREEN**



In this screen, the network settings are read-only except when the management console is in SafeMode. In SafeMode, you can configure these settings.

- **Management Interface** This is the current interface serving as the management interface. This defaults to X1.
- IPv4 Address This is the IPv4 address currently assigned to the management interface.
- Netmask This is the netmask currently assigned to the management interface.
- Mac Address This is the MAC address of the management interface.
- IPv6 address This is the IPv6 address currently assigned to the management interface.

- Gateway This is the default gateway currently in use by the NSv virtual machine.
- DNS This is a list of the DNS servers currently being used by the NSv virtual machine.

### **Test Management Network**

The **Test Management Network** screen is displayed for an NSv, but not for an NSv. In an NSv, the **Ping** and **Nslookup** commands are available on the **Diagnostics** screen.

r-Menu	-Test Management Network	
System Info	Ping	[ Ping ]
Management Network	Nslookup	[ Nslookup ]
Test Management Network		
Diaynustics		
NTP Server		
Lockdown Mode		
Sustem Undate		
Reboot   Shutdown		
About		
Logs		
1.5.5 B 100		
	Lang Aco, o A	
	Loniirm (Lnter)	Cancel (LSC)
In / Down to select items		
TAB to move between views		
Fater to action/edit an item		
THE REPORT OF THE PROPERTY OF		
SonicWall (c) 2018   Uptime 3 minu	tes [Ctrl-:	s spacebar] to switch console

The **Test Management Network** screen provides the **Ping** and **Nslookup** tools to test connectivity between the management interface and the local network. **Ping** is used to test whether hosts in the network are reachable. **Nslookup** is available for sending DNS queries from the NSv virtual machine.

#### To use Ping:

- 1. Select **Test Management Network** in the Menu and press **Tab** to move the focus into the **Test Management Network** screen.
- 2. Select Ping to highlight it and then press Enter to display the Enter IP address dialog.
- 3. Navigate into the dialog, press **Backspace** to clear the current value, and then type in the IP address that you want to ping.
- 4. Press Enter.

The ping output is displayed in the **Ping host** dialog.



5. Press the **Esc** key to close the dialog.

To use Nslookup:

- 1. Select **Test Management Network** in the Menu and press **Tab** to move the focus into the **Test Management Network** screen.
- 2. Select Nslookup to highlight it and press Enter to display the Enter hostname dialog.

- Menu	-Test Management Network	
Sustem Info	Ping	E Ping 1
Management Network	Nslookun	I Nslookun 1
Test Management Network		
Diamostics		
NTP Server		
Lockdown Mode		
Sustem Undate		
Reboot I Shutdown		
About		
Lorro		
LUYS		
	Enter hostname	
	spnicwall.com	
	Confirm (Enter)	Cancel <esc></esc>
Up / Down to select items		
THE to move between views		
Enter to action/edit an item		
SonicWall (c) 2018   Uptime 5 minu	tes [Ctrl-s	s spacebarl to switch console

- 3. Navigate into the dialog, press **Backspace** to clear the current value, and then type in the hostname that you want to look up with a DNS query.
- 4. Press Enter.

The Nslookup query results are displayed in an information dialog. You can scroll up and down within the dialog by using the up/down arrow keys.



5. Press the **Esc** key to close the dialog.

### Diagnostics

- Menu	Diagnostics	
System Info	Send diagnostics to SonicWall support	
Management Network		
Test Management Network		
Diagnostics		
NTP Server		
Lockdown Mode		
Reboot   Shutdown		
About		
Logs		

In the **Diagnostics** screen, you can send diagnostics to SonicWall Technical Support. This has the same functionality as clicking **SEND DIAGNOSTIC REPORTS TO SUPPORT** in the **INVESTIGATE | Tools | System Diagnostics** page of the SonicOS/X web management interface.

(i) **NOTE:** Your NSv virtual machine must have internet access to send the diagnostics report to SonicWall Support.

To send the diagnostics report, select **Send** in the main view to highlight it, then press **Enter**. A dialog box showing the diagnostics send output is displayed. The last message indicates success or failure.



Press the Esc key to close the dialog.

Any errors during the Send process are displayed in the Send diagnostics dialog box.

Common reasons for the report failing to send include:

- · Misconfigured/missing default gateway
- Misconfigured/missing DNS servers
- Inline proxy

(i) **NOTE:** The **Send Diagnostics** tool does not currently work through HTTP proxies.

### **NTP Server**

-Menu-	NTP Server	
System Info	Sync with ntp server	
Management Network	Current time	
Test Management Network	Network time enabled	
Diagnostics	NTP synchronized	
NTP Server		
Lockdown Mode		
Reboot I Shutdown		
About		
Logs		

In the **NTP Server** screen, you can synchronize with an NTP server. For complete NTP Server configuration options, log into the SonicOS/X management interface and navigate to the **MANAGE | Appliance > System Time** page.

The NTP Server screen displays the following information:

- Sync with NTP server This button forces the NSv virtual machine's NTP client to perform a sync with the configured NTP server(s).
- Current time The current time on the NSv virtual machine.
- Network time enabled A Yes/No value determining whether the NTP client is currently configured to keep in sync with an NTP server.
- NTP synchronized A Yes/No value determining if the NSv virtual machine is currently synchronized with the configured NTP server(s).

### Lockdown Mode



In the **Lockdown Mode** screen, you can enable *Strict Lockdown* mode. When enabled, the management console is effectively disabled. A dialog box that cannot be closed is permanently displayed on the management console. This prevents any person from accessing the management console.

To enable Strict Lockdown mode, select Enable and then press Enter.

CAUTION: Be careful about enabling Strict Lockdown mode. Strict Lockdown mode cannot be disabled.

### Temporary Lockdown Mode

A temporary lockdown mode can be enabled and disabled in SonicOS/X on the **MANAGE | Appliance > Base Settings** page. You can enable lockdown mode by clearing the **Enable management console** checkbox under the **Advanced Management** section, and can disable lockdown mode by selecting the checkbox. Click **ACCEPT** after each change.

The management console is automatically enabled/disabled a few seconds after it has been enabled/disabled in the SonicOS/X web interface page.

### System Update

The System Update screen is available on NSv.

₹40 PuTTY		-		×
-Menu- System Info Network Interfaces Diagnostics NTF Serve: Lockdown Mode System Update Reboot   Shutdown About Logs	-System Update	)		
	Begin System Update?			
Up / Down to select items TAB to move between views Enter to action/edit an item SonicWall (c) 2018   Untime 22 po	To log into the SonicWall web interface visit: https://192.168.1.4/ on X1 interface	swite	th cons	ole

### Reboot | Shutdown

r-Menu	-Reboot   Shutdown	
System Info	Reboot SonicWall	[ Reboot ]
Management Network	Shutdown SonicWall	E Shutdown 1
Test Management Network	Boot with factory default settings	[Factory Default]
Diagnostics	Boot SonicWall into debug	[ Debug ]
NTP Server	Boot SonicWall into safemode	I Enable 1
Lockdown Mode		
Reboot   Shutdown		
About		
Logs		

The **Reboot | Shutdown** screen provides functions for rebooting the NSv virtual machine, enabling debug mode, and enabling SafeMode. To perform an action, position the focus and then press **Enter** to select the desired action. Select **Yes** in the confirmation dialog, then press **Enter** again.

The actions available on the Reboot | Shutdown screen are:

- Reboot SonicWall Restarts the NSv Series virtual machine with current configuration settings.
- Shutdown SonicWall Powers off the NSv Series virtual machine.
- **Boot with factory default settings** Restarts the NSv Series virtual machine using factory default settings. All configuration settings are erased.
- **Boot SonicWall into debug** Restarts the NSv Series virtual machine into debug mode. Normally this operation is performed under the guidance of SonicWall Technical Support.
- Boot SonicWall into safemode Puts the NSv Series virtual machine into SafeMode. For more information, see Using SafeMode on the NSv.

## About



The About screen provides information about the software version and build.

### Logs

The **Logs** screen displays log events for the NSv virtual machine.

-Menu	<sub>1</sub> Apr 25 20:31:54 localhost Automatic secure crash analysis reporting is enabled
System Info	Apr 25 20:31:54 localhost Periodic secure diagnostic reporting for support purposes is enabled
Management Network	Apr 25 20:31:54 localhost Initializing SonicWall support services
Test Management Network	Apr 25 20:31:52 localhost Completed configuring the operating environment for SonicOS
Diagnostics	Apr 25 20:31:52 localhost Completed configuring the operating environment for SonicOS
NTP Server	Apr 25 20:31:51 localhost Model: "NSv 800" supports 8 CPU, current CPU count is only 2, for im
Lockdown Mode	Apr 25 20:31:51 localhost Total memory installed 10237296 Kb
System Update	Apr 25 20:31:51 localhost CPU flags: fpu ume de pse tsc msr pae mce cx8 apic sep mtrr pge mca
Reboot   Shutdown	Apr 25 20:31:51 localhost CPU count: 2, Model "Intel(R) Xeon(R) CPU E5-2690 v3 @ 2.60GHz"
About	Apr 25 20:31:51 localhost Configuring the operating environment for SonicOS
Logs	Reboot
	Apr 25 20:29:50 localhost Unconfigure the operating environment for SonicOS
	Apr 25 20:04:26 localhost Automatic secure crash analysis reporting is enabled
	Apr 25 20:04:26 localhost Periodic secure diagnostic reporting for support purposes is enabled
	Apr 25 20:04:26 localhost Initializing SonicWall support services
	Apr 25 20:04:25 localhost Completed configuring the operating environment for SonicOS
	Apr 25 20:04:25 localhost No system information file available
	Apr 25 20:04:25 localhost Total memory installed 10237296 Kb
	Apr 25 20:04:25 localhost CPU flags: fpu ume de pse tsc msr pae mce cx8 apic sep mtrr pge mca
	Apr 25 20:04:25 localhost CPU count: 2, Model "Intel(R) Xeon(R) CPU E5-2690 v3 @ 2.60GHz"
	Apr 25 20:04:24 localhost Configuring the operating environment for SonicOS
the la Berry designations address	
TOP to nous between using	
THE TO MOVE BETWEEN VIEWS	
Enter to action/ealt an item	
space to mae/show side menu	
	Annou keup: Nauigate view Cunnent Line: 1 Line: 21
Somichall (c) 2019   Untime 22 ho	une 49 minutes

# Using SafeMode on the NSv

The NSv virtual machine enters SafeMode when SonicOS/X restarts three times unexpectedly within 200 seconds. When the NSv virtual machine is in SafeMode, the virtual machine starts with a very limited set of services and features enabled. This is useful when trying to troubleshoot issues. The NSv virtual machine can also be configured to boot into SafeMode by using the **Reboot | Shutdown** screen in the NSv management console.

### **Topics:**

- How Management Console Differs in SafeMode
- Entering SafeMode

### How Management Console Differs in SafeMode

In SafeMode, some of the features the management console provides are different in the following ways:

- Configurable interfaces
- Configurable default gateway
- Configurable DNS servers
  - (i) NOTE: Changes made to interfaces in SafeMode are not persistent between reboots.

When the NSv is in SafeMode, the SonicOS/X service is one of the services that is not enabled and is shown as Not operational on the SafeMode **System Info** screen.

### Entering SafeMode

After booting into SafeMode, the Management Console always starts with the System Info screen.



(i) NOTE: To exit SafeMode, disable it on the **Reboot | Shutdown** screen or deploy a new firmware image. See Disabling SafeMode and Installing a New SonicOS/X Version in SafeMode for more information.

**Topics:** 

- Enabling SafeMode
- Disabling SafeMode
- Configuring the Management Network in SafeMode
- Installing a New SonicOS/X Version in SafeMode
- Downloading Logs in SafeMode

### Enabling SafeMode

SafeMode can be enabled from the management console.

#### To enable SafeMode:

- 1. Access the NSv management console as described in one of:
  - For NSv, see: Connecting to the Console with SSH
- 2. In the console, select the Reboot | Shutdown option and then press Enter.
- 3. Navigate down to the Boot SonicWall into safemode option to highlight Enable, and then press Enter.

- Menu	Reboot I Shutdown	
Susten Info	Reboot SonicWall [ Reboot	1
Management Network	Shutdown Sonicilall [ Shutdown	1
Test Hanagement Network	Boot with factory default entringe (Factory Defa	
Disconstine	Post Contellable into dobus	
Diagnostics	boot Sonicwall into debug	
MIP Server	Boot SonicWall into safenode	1
Lockdown Mode		
System Update		
Reboot   Shutdown		
About		
Loas		
Loga		
	boot somewarr into sale noue	
	ICS	
Up / Down to select items		
TAB to move between views		
Enter to action/edit an item	To log into the SonicWall web interface visit:	
	https://10.203.26.222/	
SonicWall (c) 2018   Uptime 3 daus	. 19 hours, 57 ninutes	[Ctrl-s spacebar] to switch console

- 4. Select Yes in the confirmation dialog.
- 5. Press Enter.

The NSv immediately reboots and comes back up in SafeMode.

(i) **NOTE:** In SafeMode, the web interface is served from an HTTP server. The HTTPS server is not started in SafeMode.

## **Disabling SafeMode**

### To disable SafeMode:

- 1. In the SafeMode menu in the NSv management console, select the **Reboot | Shutdown** option and press **Enter**.
- 2. In the **Reboot | Shutdown** screen, navigate down to the **Boot SonicWall into safemode** option to highlight **Disable**, and then press **Enter**.

Safemode menu System Info Management Network Test Management Network Diagnostics NTP Server Surtem Welcte	Reboot   Shutdown Reboot SonicWall into safemode Shutdown SonicWall Disable safemode and boot factory Doot SonicWall into safemode Boot SonicWall into safemode	[ Reboot ] [ Shutdown ] default[Factory Default] L veoug ] [ Disable ]	
Agsten úplikte Rebout I Shutdown About Logs			
Up / Down to select items TAB to nove between views Enter to action/edit an item SonicWall (c) 2018   Uptime 6 hour	SonicWall is in safemode, to acce http://192.168.14.210/	ess recovery options visit:	[safemode]

- 3. Select **Yes** in the confirmation dialog.
- 4. Press Enter.

The NSv immediately reboots and boots up in normal mode.

### Configuring the Management Network in SafeMode

When the Management Console is in SafeMode, the **Management Network** screen in the NSv management console provides features to configure the NSv virtual machine interfaces:

- **Management Interface** This is the currently selected interface. This defaults to X1. Use this to select any of the NSv virtual machine interfaces.
- IPv4 Address The current IPv4 address currently assigned to the Management Interface.
- Netmask The current Netmask assigned to the Management Interface.
- Mac Address The MAC address of the Management Interface.
- IPv6 Address The currently assigned IPv6 address of the Management Interface.
- Gateway The current Default Gateway currently in use by the NSv virtual machine.
- **DNS** A list of the current DNS servers currently being used by the NSv virtual machine.

Changes made to interfaces in SafeMode are *not* persistent between reboots.

### **Topics:**

- Configuring Interface Settings
- Disabling an Interface

### **Configuring Interface Settings**

In SafeMode, the **Management Network** screen includes editable and actionable items that are read-only when the management console is in normal mode.

-Safemode menu	M F N F N			
Sector Info	Management interface	E	X1	1
Management Network		_		
Toot Management Noter rk	IPu4 Address		192.168.14.200	
Diagnostics	Netmask		255.255.248.0	
NTP Server	Mac address		00:0c:29:ha:0e:99	
Sustem Undate	IPu6 Address		0::20c:29ff:feba	e99
Reboot I Shutdown	Gateman		192 168 8 1	
About	DNS 1			
Loge	DNS 2			
Lugs	2113 5			
	Select Interface X0 X1 X2 X3 X4 X5 X6 X7 Confirm (Enter>			
Up / Down to select items TAB to move between views Enter to action/edit an item	SonicWall is in safemode, to acc http://192.168.14.200/ or http:/	ess recover 192.168.1	y options visit: .254∕	
SonicWall (c) 2018   Uptime 5 hour	s, 43 minutes			Esafemode

#### To edit an interface:

1. In the SafeMode **Management Network** screen, select the **Management interface** option and then press **Enter**.

The **Select Interface** list appears, displaying all of the interfaces available on the NSv.

-Safemode menu	and Manager and M			
	Management interface	ſ	X1	1
Management Network	in an a state state			
Toot Management Notes rk	IPv4 Address		192.168.14.200	
Diagnostics	Netmask		255.255.248.0	
NTP Server	Mac address			
System Update	IPv6 Address			
Réboot   Shutdown	Gateway			
About	DNS 1			
Logs	DNS 2			
	X2 X3 X4 X5 X6 X7 Confirm <enter></enter>			
Up / Down to select items THB to move between views Enter to action/edit an item	SonicWall is in safemode, to http://192.168.14.200/ or htt	access recover .p://192.168.1	y options visit: 254,⁄	
onicWall (c) 2018   Uptime 5 hou	rs, 43 minutes			Isafe

2. Select the interface you wish to edit and press Enter.

The IPv4 and IPv6 addresses, Netmask, MAC address, Gateway, and DNS settings are displayed on the screen above the interface selection dialog.

3. To edit the IPv4 address, select  $\ensuremath{\text{IPv4}}$  Address on the screen and press  $\ensuremath{\text{Enter.}}$ 

The on-screen dialog displays the current IP address.

- 4. Navigate into the dialog and make the desired changes, then press **Enter** to close the dialog or press **Esc** to cancel and close the dialog.
- 5. Two new buttons appear on the screen after you make changes to an interface setting: **Save changes** or **Cancel**. You can use the **Tab** key to navigate to these buttons.

-Safemode menu			
System Info	Management interface		
Management Network			
Test Management Network	IPu4 Address	[ 192.168.14.210	1
Diagnostics	Netmask	[ 255.255.248.0	1
NTP Server	Mac address		
Sustem Update	IPu6 Address		
Reboot   Shutdown	Gatewau		
About	DNS 1		
Logs	DNS 2		
	Save changes		Cancel
Up / Down to select items TAB to move between views Enter to action/edit an item	SonicWall is in safemode, to a http://192.168.14.210/ or http	ccess recovery options visit: ://192.168.1.254/	
SonicWall (c) 2018   Uptime 6 hour	rs, 1 minute		[safemode]

(i) **NOTE:** You cannot navigate to the left navigation pane until you either save changes or cancel using these buttons.

Do one of the following:

- To make changes to other settings for this interface, navigate to the desired setting, press **Enter**, make the changes in the dialog, then press **Enter** to close the dialog for that setting. Repeat for other settings, as needed.
- If finished making changes to the settings for this interface, press **Tab** to navigate to the **Save changes** button and then press **Enter** to save your changes.
- Press **Tab** to navigate to the **Cancel** button and then press **Enter** to cancel all changes to the settings for this interface.

### Disabling an Interface

You can disable an interface while in SafeMode.

#### To disable an interface:

- 1. In the SafeMode Management Network screen, select the Management interface option.
- 2. Press Enter.

The **Select Interface** list appears, displaying all of the interfaces available on the NSv.

3. Select the interface you wish to edit and press Enter.

The IPv4 and IPv6 addresses, Netmask, MAC address, Gateway, and DNS settings are displayed previously on the interface selection dialog.

4. Select IPv4 Address and press Enter.

The onscreen dialog displays the current IP address.

5. Navigate into the dialog and change the IP address to 0.0.0.0, then press Enter.

-Safemode menu					
System Info	Management interface		X1		
Management Network					
Test Management Network	IPv4 Address	I.	192.168.0.15	1	
Diagnostics					
NTP Server	Mac address	00:0c:29:5a:19:dd			
System Update	IPu6 Address	fe80::20c:29ff:fe5a:19dd			
Reboot I Shutdown	Gateway	[ 192.168.0.1 ]			
About	DNS 1		8.8.8		
Logs	DNS 2				
Up ∕ Down to select items TAB to move between views Enter to action∕edit an item	SonicWall is in safemode, to acc http://192.168.0.15/ or http://1	ess recover <u>.</u> 32.168.1.254	options visit:		

#### Save changes displays.

6. Press **Tab** to navigate to **Save changes** and then press **Enter**.

The interface is disabled.

Management Network Management interface	E	X1	1
IPv4 Address Netmask		Not configured	
Mac address IPu6 Address	fe	00:0c:29:5a:19:00 80::20c:29ff:fe5a:	1944
Gateway DNS 1		192.168.0.1 8.8.8.8	
DNS 2			

### Installing a New SonicOS/X Version in SafeMode

SWI files are used to upgrade SonicOS/X. You can download the latest SWI image file from MySonicWall.

For additional information on uploading a new image, refer to: https://www.sonicwall.com/support/knowledge-base/?sol\_id=180404172741874

In SafeMode, you can upload a new SonicOS/X SWI image and apply it to the NSv virtual machine. The SafeMode web management interface is used to perform an upgrade, rather than SafeMode in the NSv management console. When viewing the NSv management console in SafeMode, the URL for the SafeMode web interface is displayed at the bottom of the screen.

(i) **NOTE:** In SafeMode, the web management interface is only available by way of http (not https).

#### To install a new SonicOS/X from SafeMode:

- 1. Depending on the type of NSv deployment, determine the IP address to use to access the SafeMode web management interface:
  - On an NSv deployed in Azure, you can access the Safemode web interface at the public IP address assigned to the NSv.
- 2. In a browser, navigate to http://<IP address>, using the applicable IP address. The SafeMode web management interface displays.

SONICWALL" Network Security Virtual							
SonicOS is running in Safe Mode Safe Mode will allow you to do any of t > Download the Safe Mode Logs f > Upload new SonicOS application > Boot your choice of application i > Restore the settings to their fact	he following: or troubleshooting by the SonicWa nimages mage	ill Support Team	SonicOS Product Info Model: NSv Unlicensed Product Code: 70000 GUID: Serial Number:				
Download Safe Mode Logs							
Restart @ Refresh Uploa	d Image						
Current Image Version ✓ 6.5.0.2-8v-sonicosv- 3725793204	Import Date 4/25/2018, 6:14:00 PM	Last Used Date 4/25/2018, 6:14:03 PM	Status Not Running: Safe Mode	Boot	Image Actions N/A		

- 3. Click **Upload Image** to select an SWI file and then click **Upload** to upload the image to the virtual machine. A progress bar provides feedback on the file upload progress. After the upload completes, the image is available in the **Image Management** list in the SafeMode web interface.
- 4. In the row with the uploaded image file, click **Boot** and select one of the following:
  - Boot Uploaded Image with Current Configuration
  - Boot Uploaded Image with Factory Default Configuration

age Management	mage				
Current Image Version ✓ 6.5.0.2-8v-sonicosv-37-rf207f34d	Import Date 4/12/2018, 4:28:26 PM	Last Used Date 4/12/2018, 4:28:45 PM	Status Not Running: Safe Mode	Boot (@) 🗸	Image Actions
Uploaded Image Version 6.5.0.2-8v-sonicosv-37-/f207f34d	Load Date 4/12/2018, 4:49:31 PM	Build Date 4/12/2018, 3:39:33 AM		Boot () +	Image Actions
			Boot Uploaded Image (6.5.0.2-8v- with Current Configuration Boot Uploaded Image (6.5.0.2-8v- with Factory Default Configuration	conicosv-37f207f34d) conicosv-37f207f34d)	

The NSv virtual machine reboots with the new image.

### Downloading Logs in SafeMode

When the NSv virtual machine is in SafeMode, extra logging information is kept that can be downloaded. The logs are available from the SafeMode web management interface that can be accessed through the URL provided at the public IP address of an NSv.

(i) **NOTE:** In SafeMode, the web management interface is only available by way of http (not https).

#### To download logs from SafeMode:

1. In a browser, navigate to http://<IP address>, using the applicable IP address. The SafeMode web management interface displays.

SONICWALL Ne	twork Security Virtual					
SonicOS is running in Safe Mode						
Safe Mode will allow you to do any of t	he following:		SonicOS Product Info			
> Download the Safe Mode Logs f	or troubleshooting by the SonicWa	Il Support Team	Model: NSv Unlicensed			
Upload new SonicOS application	n images		Product Code: 70000			
> Boot your choice of application i	> Boot your choice of application image			GUID:		
Restore the settings to their fact	ory default values		Serial Number:			
Download Safe Mode Logs						
Image Management						
Restart @ Refresh Uploa	d Image					
Current Image Version ✓	Import Date	Last Used Date 4/25/2018 6:14:03 PM	Status Not Running: Safe Mode	Boot	Image Actions	
6.5.0.2-8v-sonicosv- 3725793204	12012010, 0.14.00 FW	12012010, 0114.001 W	Not rearing. Date mode			

2. Click **Download Safe Mode Logs**. A compressed file is downloaded that contains a number of files, including a console\_logs file that contains detailed logging information.

SonicWall Support

Technical support is available to customers who have purchased SonicWall products with a valid maintenance contract.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. To access the Support Portal, go to https://www.sonicwall.com/support.

The Support Portal enables you to:

- View knowledge base articles and technical documentation
- View and participate in the Community forum discussions at https://community.sonicwall.com/technology-and-support.
- View video tutorials
- Access https://mysonicwall.com
- · Learn about SonicWall professional services
- Review SonicWall Support services and warranty information
- Register for training and certification
- Request technical support or customer service

To contact SonicWall Support, visit https://www.sonicwall.com/support/contact-support.

6

# About This Document

(i) NOTE: A NOTE icon indicates supporting information.

- (i) | IMPORTANT: An IMPORTANT icon indicates supporting information.
- (i) **TIP:** A TIP icon indicates helpful information.
- CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

### M WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death.

SonicOS and SonicOSX NSv Getting Started Guide for the Azure Series Updated - October 2021 Software Version - 7 232-005463-00 Rev C

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For more information, visit https://www.sonicwall.com/legal.

### End User Product Agreement

To view the SonicWall End User Product Agreement, go to: https://www.sonicwall.com/legal/end-user-product-agreements/.

### Open Source Code

SonicWall Inc. is able to provide a machine-readable copy of open source code with restrictive licenses such as GPL, LGPL, AGPL when applicable per license requirements. To obtain a complete machine-readable copy, send your written requests, along with certified check or money order in the amount of USD 25.00 payable to "SonicWall Inc.", to:

General Public License Source Code Request Attn: Jennifer Anderson 1033 McCarthy Blvd Milpitas, CA 95035