

StoneFly SCVM[™] Deployment Guide for Microsoft Hyper-V



Storage Concentrator[™] Virtual Machine Software-Defined Virtual Storage Appliance

Revision 2017.1

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Table of Contents

1.	Scope of the document	5
2.	Requirements before installation	5
3.	Limitations of the SCVM on Hyper-V	6
4.	How to obtain the SCVM package	6
5.	Installation of Hyper-V	7
6.	Installation of SCVM	

1. Scope of the document

This document describes the steps required to install a new Hyper-V StoneFly Storage Concentrator Virtual Machine (Hyper-V SCVM[™]) on Microsoft Windows Server 2012 R2 64-bit server with Hyper-V[™] role installed.

Note that this document only addresses issues unique to SCVM installation on a Hyper-V Virtual Machine. Other documentation such as "StoneFly IPSAN Appliances User's guide" should be consulted for usage of the SCVM after it is installed.

Note that this document is oriented toward the creation of a new SCVM, and not a SCVM upgrade. To upgrade an SCVM, follow the normal Storage Concentrator software upgrade procedure that is documented in the StoneFusion release notes.

Note: The rest of the document will only refer to "SCVM" instead of "Hyper-V SCVM".

2. Requirements before installation

The following are the prerequisites for installing a new SCVM:

- 1- A Microsoft Windows Server 2012 R2 64-bit with the Hyper-V Role installed and all relevant and recommended service packs and Microsoft updates installed.
- 2- 4 GB or more of free memory for use by the SCVM.
- 3- Powerful CPU(s) (Intel Xeon or equivalent is recommended).
- 4- A minimum of 24 GB of storage for loading the StoneFly StoneFusion is required.
- 5- Two virtual networks defined in Hyper-V server: One for the LAN, and another for the SAN. There must be at least one physical interface reserved for each network. Hyper-V does not allow the sharing of a physical interface with the Windows Server OS.
- 6- Additional storage space (internal or external) to be managed by the SCVM.
- 7- SCVM package (SCVM software CD, documents, and additional files)

3. Limitations of the SCVM on Hyper-V

The following are restrictions and limitations specific to the StoneFly SCVM when running on Microsoft Hyper-V:

- 1- Virtual Network Adapter Ethernet Jumbo frames are not supported.
- 2- Virtual Network Bonded Interfaces are not supported.
- 3- Because only a single SAN Virtual Network Adapter is supported, SC Multi-path SAN Network interfaces are not supported.

4. How to obtain the SCVM package

Contact StoneFly Sales at +1(510)265-1616 or at: http://www.stonefly.com/company/contact.asp

Note: A CD with a SCVM ISO image and a CD with documents will be shipped with each SCVM, but since SCVM software can change by the time user wants to install the SCVM, it is recommended that you contact StoneFly support support@stonefly.com for two things:

- 1- Find out what is the latest version of SCVM at the time you plan to install the SCVM and if the latest version is newer than what you have in your CD, obtain a web address with username/password to download and burn the latest SCVM ISO image and also obtain latest documentations.
- 2- Obtain the software feature licenses that are required for SCVM.

5. Installation of Hyper-V

This section describes the steps required to create a new SCVM[™] in your Hyper-V server.

1) Open the **Server Manager** and check if Hyper-V roles are enabled.

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Dashboard	WELCOME TO SERVER MANAGER		
Local Server All Servers File and Storage Services	QUICK START 2	nfigure this local server Add roles and features	
	<u>w</u> hat's new 4	Add other servers to manage Create a server group	
	LEARN MORE		Hide
	ROLES AND SERVER GROUPS Roles: 1 Server groups: 1 Servers t File and Storage Services () Manageability	otal: 1 Local Server 1 Manageability	
	Events Performance BPA results	Events Services Performance BPA results	
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 If the Hyper-V role is not enabled, click on Add roles and features. Click next on the screen that appears.



3) Select Role-based or feature-based installation and click on Next.



4) Select the server on which you want to install the Hyper-V and click on **Next**.

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Dashboard Local Server All Servers All Servers File and Storage	erver Manager	Shboard Add Roles and Features Server Select a server or a virtual hard disk on whi Select a server from the server pool Select a virtual hard disk Server Pool Filter: Name IP Address WIN-LR37(PKQK6V 192.158.1.101 Computer(s) found This page shows servers that are running W	(2) r	Manage Tools Tools DESTINATION SERVER WIN-LR37LPRCKBV 112 R2 Standard Evaluation > 2 been added by using the	View Help
		Add Servers command in Server Manager. collection is still incomplete are not shown.	Offline servers and newly-added so revious Next >	ervers from which data Install Cancel]
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5) Select "Hyper-V" and click on $\ensuremath{\textbf{Next}}.$

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Dashboard	The WELCOME TO C	Add Roles and Features Wizard		_ 0	×
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6) On the pop-up screen click on **Add Features**.

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Image: Dashboard Image: Local Server Image: Local Servers Image: Local Servers </th <th>Add Roles and Features Wizard Select server ro Before You Begin Installation Type Server Selection Features Confirmation Results Add features that are required for Hyper-V? The following tools are required to manage this feature, but do not have to be installed on the same server. Add features that are required for Hyper-V? The following tools are required to manage this feature, but do not have to be installed on the same server. Remote Server Administration Tools Results I ools Hyper-V Management Tools I ools Hyper-V GUI Management Tools I ools (f applicable) Add features Cancel</th> <th>C DESTINATION SEVER WIN-LB37LPRQ49V X Son provides the services that use to create and manage aachines and their resources. ual machine is a virtualized rr system that operates in an execution environment. This but to run multiple operating simultaneously.</th>	Add Roles and Features Wizard Select server ro Before You Begin Installation Type Server Selection Features Confirmation Results Add features that are required for Hyper-V? The following tools are required to manage this feature, but do not have to be installed on the same server. Add features that are required for Hyper-V? The following tools are required to manage this feature, but do not have to be installed on the same server. Remote Server Administration Tools Results I ools Hyper-V Management Tools I ools Hyper-V GUI Management Tools I ools (f applicable) Add features Cancel	C DESTINATION SEVER WIN-LB37LPRQ49V X Son provides the services that use to create and manage aachines and their resources. ual machine is a virtualized rr system that operates in an execution environment. This but to run multiple operating simultaneously.
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7) Once the Hyper-V role is checked, click on **Next** to proceed.

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Server Manager	• Dashboard	🕶 🍘 🚩 Manage Tools	View Help
III Dashboard	Add Roles and Features Wizard	_ D X	
■ Coole of all Servers ■ All Servers ■ File and St ■ Select server role ■ Server Roles ■ Server Se	S Select one or more roles to install on the selected server. Roles Active Directory Certificate Services Active Directory Federation Services Active Directory Rights Management Services Active Directory Rights Management Services Active Directory Rights Management Services Application Server DHCP Server DHCP Server Fax Server B File and Storage Services (1 of 12 installed) Structory Rolicy and Access Services Remote Access Remote Desktop Services V	DESTINATION SERVER WIN-LR37URQMOV Description Hyper-V provides the services that you can use to create and manage virtual machine and their resources. Each virtual machine is a virtualized computer system that operates in an isolated execution environment. This allows you to run multiple operating systems simultaneously.	Hide
	< Previous Next	t > Install Cancel	
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8) Click on Next.



9) Click on Next.



10) Select the network adapter to use and Click on Next.

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@ @-	Server Manager	• Dashboard		• @ 🏲	Manage	Tools	View	Help
🔡 Dashboarr	Ē.	Add Roles an	d Features Wizard		_ 0	x		
Local Serv	Create Virtual Sw Before You Begin Installation Type Server Selection Server Roles Features Hyper-V Vrtual Switches Migration Default Stores Confirmation Results	itches Virtual machines require virtual mac One virtual switch will be creat at least one virtual switch new can add, remove, and modify y Network adapters: Name ☑ Ethernet ⓓ We recommend that you r network adapter, do not se	I switches to communicate with o chines and attach them to a virtue ed for each network adapter you to provide virtual machines with our virtual switches later by using Description Intel(R) 82574L Gigabit N reserve one network adapter for m elect it for use with a virtual switch	ther computers. Afte I switch. connectivity to a pity the Virtual Switch N letwork Connection amote access to this to	DESTINATION SERV WIN LB37_PROP 47 you install this nd that you create citaal network, Yi danager.	vea ste ou ve a	Hic	se
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			BPA results	17.0.10.014				
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11) Select the appropriate options and click on **Next**.



12) Browse and select the location for the VM disks. Click on Next when done.

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© •	Server Manager •	Dashboard		• ③ I	Manage	Tools	View	Help
Dashboard	Ē.	Add Roles an	d Features Wizard		_ □	x		
Local Serv	Default Stores Before You Begin Installation Type Server Selection Server Roles Peatures Hyper-V Virtual Switches Migration Default Stores Confirmation Results	Hyper-V uses default locations unless you specify different loc now, or you can change them I Default location for virtual hard C:\Users\Public\Documents\Hy Default location for virtual mac C:\ProgramData\Microsoft\Wii	to store virtual hard disk ations when you create t tater by modifying Hyper I disk files: per-VVirtual Hard Disk hine configuration files: ndows\Hyper-V	files and virtual machin he files. You can change V settings.	DESTINATION SER WIN-LR37, PRQN e configuration files, these default location Brows Brows	ξR δV ns e	Hic	ie
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13) Review the changes and click on **Install.** Wait for the installation to be completed.





14) Click on **Close** once the installation completes.



15) Open the "Server Manager" and verify that the Hyper-V installation is successful and that the machine hostname is visible.



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Server Ma	inager • Hyper-V • 🕄 🍢 Manage Tools	; View	Help
E Dashboard Local Server Local Server All Servers File and Storage Services ▷ Hyper-V	SERVERS All servers 1 total Filter P B	TASKS	Activ
	< <u> </u>		>
	EVENTS All events 1 total	TASKS	Ŧ
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	Server Name ID Severity Source Log	Date and	Time
	WIN-LR37LPKQK6V 14100 Warning Microsoft-Windows-Hyper-V-VMMS Microsoft-Windows-Hyper-V-VMMS-Admin	6/14/2017	9:2
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16) Right click on the **server name** and select **Hyper-V Manager** to open the hyper-v manager.

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Server Ma	anager + Hyper-V	🔹 🍘 🏲 Manage Took	View Help
Dashboard Local Server All Servers File and Storage Services	SERVERS All servers 1 total Filter P © • • • • • Server Nime IPv4 Address Manageability	Last Update Windows Activat	TASKS
E Hyper-V	WIN-LES Add Roles and Features Shut Down Local Server Computer Management Remote Desktop Connection Windows PoworBhell Configure Windows Automatic Feedback Hyper-V Manager EVENTS Manage As _ All events Start Performance Countors Filter Refresh	n-ot started 6/14/2017 92332 PM 00252-10000-00	000-AA228 (Acts)
	Server Name ID Serventy Source WIN-LR37LPKQK6V 14100 Warning Microsoft-Windows-Hyper	Log r-V-VMMS Microsoft-Windows-Hyper-V-VMMS-Admin	Date and Time 6/14/2017 9:2
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17) You might need to set up Hyper-V virtual networks for the LAN and SAN networks that are to be used with the SCVM.

If these networks do not already exist, Right click on the **server name** and select **Virtual Switch Manager**.

Hyper-V Ma	nager 71 PKOK6V	Virtual Machines		-			Acti	ions
	New Import Virtu Hyper-V Sett Virtual Switz Virtual SAN1 Edit Disk Inspect Disk. Stop Service Remove Sen Refresh View Help	Al Machine	State No virtual ma- III	CPU Usage chines were found or	Assigned Memory this server.	Uptime		Ne.LB37/LPKQK6V New Import Virtual Mach Hyper-V Settings Virtual SAN Manage Edit Disk Inspect Disk Stop Service Remove Server Refresh View Help
		Details						
				No item selected.				

A different physical network interface is selected for each network, and the default "Allow management operating system to share this network adapter" setting should be checked.

"Apply" the addition of the LAN virtual network, and **repeat** the procedure to add the SAN virtual network.

If there is no physical interface available you can check internal network for SAN if the access to the SC VM is to be made from the same host server.



6. Installation of SCVM

 Using the "Hyper-V Manager" GUI, create the new SCVM virtual machine by selecting the Windows Server system from the left tree, right click, and select "New → Virtual Machine...".

	ii a			Hyper-V M	Manager		
\bigcirc	File Action View	w Help					
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	📑 Hyper-V Manage	er					Actions
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2) Click on Next.



 Chose a meaningful name and location for the SCVM. Often, it is useful to organize the related virtual machine and virtual disk files together in subdirectories. Click on Next.



4) Select **Generation 1** and click on **Next**.

6	Ĭ.		Hyper-V Manager	>
\mathbf{E}	File Action	View Help		
The second secon		Eefore You Begin Specify Gene Before You Begin Specify Common and Location Specify Connect Virtual Hard Disk Installation Options Summary	New Virtual Machine Wizard exation Choose the generation of this virtual machine. Image: Construction of this virtual machine. Image: Const	R37LPKQK6V w port Virtual Machin per-V Settings tual Switch Manage tual SAN Manager it Disk pect Disk pp Service move Server fresh w ip
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5) Specify the amount of memory to allocate to the SCVM and click on **Next** (**Note**: A minimum of 4096 MB is required).



6) The first SCVM network interface must be the LAN interface, the second, the SAN interface.

Select the LAN network from the dropdown menu and Click on Next.

	File Action	View Help	Hyper V Manager)
Das Loc. All G File Hyp	Hyper-V h	Configure Net Ective You Bogn Ective You Bogn Specify Hene and Location Specify Generation Asogn Memory Conrect Virtuel Herd Dikk Installation Options Summary	New Virtual Machine Wizard X Lworking Each new virtual mechine indudes a network adapter. You can configure the network adapter to use a virtual anito, or it can remain disconnected. Connection:AN Network Connection:AN Network v	R37LPKOK6V W pertVittual Machin per-V Settings tual Svith Manage it Disk pect Disk sp Service move Server fresh w Ip
			<previous next=""> Pinsh Cancel</previous>	936 Pr

 Create the SCVM boot disk. Choose a meaningful name and location and Click on Next (Note: This should be at least 24 GB in size).



8) The SCVM installation will be performed later. Select **Install an operating system later** and click on **Next**.

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	File Action	View Help		
$\mathbf{\nabla}^{\mathbf{Q}}$	(* *) 2			
-	Hyper-V M	3.	New Virtual Machine Wizard	
Loc		*		LR37LPKQK6V
		Installation	Options	w
III All S				port Virtual Machin
B Hur		Before You Begin	You can install an operation system now if you have access to the setup media, or you can install it	tual Switch Manage
штур		Specify Name and Location	later.	tual SAN Manager
		Specify Generation	 Install an operating system later 	it Disk
		Assign Memory	 Install an operating system from a bootable CD/DVD-ROM 	pect Disk
		Configure Networking	Media Physical CD/DVD driver D	op Service
		Installation Options	Trane file (ien):	move Server
		Summary	C anoge ne (ao).	fresh
			O Install an operating system from a bootable floppy disk	w
			Media	lp
			virtual hoppy disk (.vhd): Browse	
			O Install an operating system from a network-based installation server	
			< Previous Next > Finish Cancel	
	<u> </u>	<	III >	
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9) Review the "New Virtual Machine Wizard" settings, and click on Finish.



10) Modify the new SCVM settings by selecting the new SCVM virtual machine from the Hyper-V Management GUI "Virtual Machines" pane, and right click on **settings**.

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\mathbf{E}	File Action View Help									
	📑 Hyper-V Manager				-			Act	tions	
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Loc:		Name		State	CPU Usage	Assigned Memory	Uptime		New	•
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			Help						View	
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								1	Connect	
		SC VM							Settings	
			Created:	6/14/2017 9	37:08 PM	Clustered: No		0	Start	
			Version:	5.0				1	Checkpoint	
			Generati	on: 1				1	Move	
			Notes:	None				1	Export	
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		Summary Memo	ory Network	ing Replication				×	Delete	
		<					>		Enable Replicati	ion
	Displays the virtual machine settings	user interface.						1.0		
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11) Assign atleast 2 virtual processors and click on **Apply**.



12) First, the SAN Network Adapter must be added. From the "Add Hardware" pane, select **Network Adapter**, and click on **Add**.

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	File Action View	👔 Settings for SC VM on WIN-LR37LPKQK6V 📃 🗖 🗙	
E	(n n) 🖄 📰 🖬	SC VM	
	Hyper-V Manager	A Hardware	
📰 Das	WIN-LR37LPKQ	Add Hardware You can use this setting to add devices to your virtual machine.	(6V 🔺
Loca		Boot from CD Select the devices you want to add and click the Add button.	••••
		Memory SCSI Controller	flac
iii Eila		Processor Legacy Network Adapter	e
Ba Hur		2 Virtual processors Fibre Channel Adapter	lan
шапур		IDE Controler 0 RemoteFX 3D Video Adapter	200
		SC VM_OS.vhdx Add	iog
		B IDE Controler 1 A network adapter requires drivers that are installed when you install integration	
		None Services in the guest operating system.	
		SCSI Controller	
		Vetwork Adapter I AN Network	
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		X Hanagement	
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		Integration Services	
		Checkpoint File Location	
		C: \ProgramData\Microsoft\Win	
		Smart Paging File Location	
		D Automatic Start Action	
		Restart if previously running	
		OK Cancel Apply	on
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13) Select the **SAN network**, and click on **Apply**.

(**Note**: In the SCVM, the first listed Network Adapter must always be the LAN interface, and the second, the SAN).



Although the SCVM LAN and SAN Virtual Network Adapters have been created, they use Dynamic MAC addresses by default. For a number of reasons, with the SCVM these MAC addresses **must** be Static. The setting of Static could have been chosen earlier, but then a pair of known unique MAC addresses would have to be known by the user. Instead, it is better to start the SCVM once, and let the Hyper-V pick the MAC addresses and then change the configuration to use "Static MAC addresses".

14) From the "Virtual Machines" pane of the Hyper-V Management GUI, right click on the SCVM, and click on **Start**.

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	Hyper-V Manager						Actions
📰 Das	WIN-LR37LPKQK6V	Virtual Machine	25				WIN-LR37LPKQK6V 🔺
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🖬 All S		E SC VM	Connect				💫 Import Virtual Mac
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🛅 Нур			Start				👯 Virtual Switch Man
			Checkpoint				🤬 Virtual SAN Manag
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		o	eated: 6/14/2017 9:	37-09 PM	Clustered: No		Start
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		Summary Memory	Networking Replication				1 Enable Replication
		<		111		>	B
	Starts the selected virtual machine.						
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		Created	6/14/2017 9	-27-00 DM	Chustoned N			Turn Off	
		Version	: 5.0	.07.00 PM	Heartbeat: N	o Contact	0	Shut Down	
		General	tion: 1		Integration		0	Save	
		Notes:	None		Services:		11	Pause	
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		Summary Memory Networ	king Replication					Move	
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15) Once the "State" of "Running" appears, click on **Turn Off** to stop the SCVM. Normally, the **Shut Down** option would be used as a graceful power off, but since there is no software installed on the SCVM yet, **Turn Off** must be used. When prompted, click on **Turn Off**.

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	Hyper-V Manager						Actions		
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Loca		Name	State C	PU Usage	Assigned Memory	Uptime	New 🕨		
All S		SC VM	Connect		4096 MB	00:08:18	🕞 Import Virtual Mac		
File File			Settings				🖆 Hyper-V Settings		
🛅 Нур			Turn Off				👯 Virtual Switch Man		
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16) When the SCVM is in the "Off" state, right click on the SCVM and click on **settings**.

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17) In the Hardware tree, select the first Network Adapter that is on the LAN Virtual Network, and note that there is now a non-zero MAC Address populated. Change the Setting to **Static**, and click on **Apply**.





Do the same for the SAN Virtual Network adapter. In the Hardware tree, select the second Network Adapter that is on the SAN Virtual Network, and note that there is now a non-zero MAC Address populated. Change the Setting to **Static**, and click on **Apply**.

18) Now that the SCVM is fully configured, the SCVM software can be installed.

Start the Hyper-V console connection window by right clicking on the SCVM and select **Connect**.

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19) A new Hyper-V Virtual Machine Connection window will appear for the new SCVM.
 If you are going to use a physical CD-ROM for the SCVM installation, in the Connection menu, select "Media → DVD Drive → Capture D:".
 The correct disk drive letter may be different.

Note: It is important that the Windows Server where Hyper-V is running not be configured to automatically boot from CD as any unplanned reboot of the server while any VM installation media is installed could result in the loss of the Windows Server. Once the installation is done, the SCVM CD-ROM should be ejected and removed.



If the SCVM installation is to be performed from a .iso file, the Virtual Machine Connection window "Media \rightarrow DVD Drive \rightarrow Insert Disk..." menu option should be chosen.

Browse to the location where the SCVM installation .iso file resides and click on **open**.

Note: Hyper-V requires special permissions be set to allow a VM to access network sharing. If this can be easily done, proceed, however the SCVM will never need such access other than for the installation.

It is often more expeditious to copy the .iso file to a Hyper-V local disk and to install the SCVM from there.



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20) Regardless of where the SCVM installation media is located, once available, **start** the SCVM from the "Action" menu.

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The SCVM will boot from the CD, and installation banner screen should appear. The prompt times out automatically, or the user can select option 2 – Software Installation.

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22) Installation will take up to 30 minutes or less. Once the SCVM installation completes, the CD will be ejected, and the SCVM will reboot.

Once the SCVM reboots, the SCVM console screen will appear.



The "SC Service" menu can be accessed on the "Virtual Console" to set the Storage Concentrator management network IP address. Then the Storage Concentrator GUI can be used from a browser to complete the Storage Concentrator configuration. The default credentials for console are:

Login: console

Password: coni100o

- 23) The Storage Concentrator management network interface is pre-configured with the default IP address of 192.168.0.254. This must be changed to a valid address for your LAN network. Login to the "SC Service" console using the Hyper-V "Connection" window for the SCVM by:
 - a. Press **Enter** to display the login prompt.
 - b. At the user ID prompt type `**console**' and hit Enter.
 - c. At the password prompt type `**coni100o**' and hit Enter. Note that the user ID and password are case sensitive.
 - d. Using the "SC Service" menu, configure the management network by selecting option '2', for "2 Network...".



- 24) At the "Service→Network" menu, change all of the Storage Concentrator management network settings to values appropriate for your LAN network, save them, and then completely exit the "SC Service" menu using the 'q' option for 'q Logout".
- 25) The "login:" prompt should reappear.

Note: the browser access to the Storage Concentrator Management GUI is blocked while the "SC Service" menu is active. Also note that there can be a short delay before the Storage Concentrator GUI becomes available.



26) After configuring the Storage Concentrator management network, it should be possible to login to the Storage Concentrator Management GUI by browsing to the management IP address that you have configured.

The default administrative credentials are:

User ID: **stonefly** Password: **stonefly**

Once logged in, you should configure the SAN data network settings for appropriate values of your SAN.

Refer to the StoneFly "Storage Concentrator User Guide" for more information about the configuration and use of the Storage Concentrator.

27) Add SCSI disks to the SCVM SCSI Controller. These disks will be used as managed storage resources by the SCVM and be offered to SCVM clients as iSCSI storage targets when SCVM volumes are created.

In the Hyper-V Management GUI Hardware tree, move to the "SCSI Controller", select **Hard Drive**, and click on **Add**.

In this example, we will add a "Physical hard disk" as a SCSI "Hard Drive" to the virtual machine. Click on the **Physical hard disk:** radio button.

Choose the disk to be used and click on **Apply**.



A second SCSI "Hard Drive" will also be added, this one being a new "Virtual hard disk". Select **Virtual hard disk:**, and click on **New**.

Note: When both virtual hard disks and physical hard disks are being used at the same time, it is recommended that a second SCSI Controller be added using the "Add Hardware" tree item so that all of the virtual hard disks are added to one SCSI controller, and the physical hard disks are added as disks to the other controller.

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- 28) Choose Fixed size for the disk type, and click on Next >.

29) Pick a meaningful name and location for the new virtual hard disk, and click on Next>.

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For this example, a small 100 GB virtual hard disk is created. Hyper-V will not allow a hard disk be larger than 2 TB, but once these are managed storage resources within the SCVM, multiple disks can be combined as SCVM volumes that exceed this limit.

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Pick a size that is available, and click on **Next >**.

Confirm the settings and click on **Finish**.

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Depending on the size of the virtual hard disk created, it may take a while for the Hyper-V to initialize the disk. This occurs only once.

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Although the new virtual hard disk has been created, it has not been added to the SCVM until you click on "Apply". Click on **Apply** to add the new virtual disk to the SCVM.



Additional Hyper-V SCSI Hard Drives can be added at any time using the same procedure described above. Note that additional Disks can be added to an existing Hyper-V SCSI controller without stopping the SCVM.

As multiple SCSI controllers are being used, make sure to add the disk to the correct one. Once a new disk has been created for the SCVM in Hyper-V, you will need to discover the new storage resource by using the Storage Concentrator Management GUI "Resources" page and perform a "Discovery".

Storage Concentrator software uses a feature licensing mechanism. The software can be installed without licenses and will run in an evaluation mode. Software licenses will be needed to continue operation.

Once your SCVM is installed and operational, contact **StoneFly Sales** to obtain Storage Concentrator feature software licenses.

Make sure that the Power Saving features and Windows Automatic Update are disabled on the Windows 2008 Server running Hyper-V so that the SCVM and the other VM's are not disrupted.

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