

# **Deployment Guide**

# A10 Provider Package for Microsoft System Center Virtual Machine Manager 2012

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## 1 INTRODUCTION

Microsoft System Center Virtual Machine Manager (SCVMM) 2012 enables centralized management and monitoring of virtual machines and physical infrastructure, while increasing server performance, enhancing availability, accelerating applications, and providing dynamic resource optimization across multiple virtual platforms. SCVMM provides fabric management of virtual machine and virtual network appliance infrastructure.

A10 Networks, the technology leader in Application Deliver Controllers (ADCs), offers solutions to manage virtual ADCs (SoftAX virtual appliances) and physical appliances such as the A10 Thunder or the AX Series within an SCVMM fabric.

### 2 INSTALLATION REQUIREMENTS

This deployment guide requires the following systems and packages:

- Microsoft Windows Server 2012
- Microsoft SQL Server 2012 SP1
- Microsoft Windows Server 2012 Essential Assessment and Deployment Kit
- Microsoft .NET Framework 4.0
- Microsoft System Center Virtual Machine Manager (SCVMM) 2012 SP1
- ACOS<sup>1</sup> 2.7.1-P2 or later
- A10 Load Balancing Provider package installer

*Note:* Contact A10 Sales to obtain the A10 SCVMM LB provider package.

# **3 INSTALLING THE PROVIDER PACKAGE**

This section of the deployment guide explains how to install the A10 provider package within the SCVMM Server. The installation adds the A10 load balancing options to the SCVMM fabric.

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<sup>&</sup>lt;sup>1</sup> Advanced Core Operating System (ACOS) runs on all hardware- and software-based Thunder and AX Series models.

Once the SCVMM is downloaded and unzipped, launch the matching installer, based on your server platform. The supported installers are A10VMMLB (x64) and A10VMMLB (Itanium).

- 1. Launch the installer. You will be prompted for a password.
- 2. Enter "123" as the password.



Figure 1: A10 provider package installer

- 3. Click Next, select the installation folder, and complete installation.
- 4. After the installation is complete, you must restart the SCVMM service. To restart the service, from an elevated command prompt, process the **net stop scvmmservice** and **net start scvmmservice** commands.



C:4.	Administrator: Command Prompt 📃 🗖 💌	[
The	System Center Virtual Machine Manager service was started successfully.	^
C:\\ The The	Windows\system32>net stop scummservice System Center Virtual Machine Manager service is stopping. System Center Virtual Machine Manager service was stopped successfully.	
C:\\ The The	Windows\system32>net start scummservice System Center Virtual Machine Manager service is starting System Center Virtual Machine Manager service was started successfully.	~

Figure 2: SCVMM command line stop and start feature

5. After restart is complete, log in to the SCVMM portal. The A10 Networks Load Balancer should appear in the Configuration Providers list (**Settings > Configuration Providers**).

Home									
Create Create Run User Role As Account Create	Import Console Add-in Import	Dob Dob PRO Wir	swerShell ibs RO findow						
Settings		Confi	figuration Providers (2)						
Ecurity		Nam	ne S	Status	Туре 🔻	Version	Publisher	Manufacturer	Model
		<b>Ø</b> 4	A10 Networks Load Balancer A	Active	Load balan	1.0.0	A10 Networks, Inc.	A10 Networks, Inc.	A10 Networks Product( AX or Thunder )
Servicing Windows		Ø 1	Microsoft Network Load Balancing (NLB) A	Active Load balan 3.1.6011.0 System Center \			System Center Virtual Machine Mana	em Center Virtual Machine Mana Microsoft	Network Load Balancing (NLB)
🙀 Configuration Provi	ders								
u Console Add-ins									
		<					m		

Figure 3: SCVMM Configuration Providers list

6. If the A10 Networks Load Balancer is listed, go to the next section.

# 4 ADDING AN A10 ADC TO THE SCVMM FABRIC

This section explains how to add the A10 Virtual ADC to the SCVMM Fabric.

- 1. Navigate to the Fabric workspace of the SCVMM.
  - 2. In the Fabric pane, expand Networking, then click Load Balancers. Alternatively, you can use the **Home** tab: in the **Show** group, click **Fabric Resources**.



VMMAdm	in - SCVMMNEW.a1	Otesting.com	- Virtua	I Machine Ma	anager							
Hon	ne	23	-				C	🕞 DaviesChall				
Create Logical Network	Create MAC Pool	Create Logical Switch	Create	Add Resources •	Overview	Fabric Resources	Virtual Machines	Jobs	View Dependent Resources	Refresh	Remove	Properties
	Create			Add		Sho	W	Window	Dependencies	Refresh	Remove	Properties

Figure 4: SCVMM Fabric Resources

3. On the **Home** tab, in the **Add** group, click **Add Resources**, and then click **Load Balancer**.

VMMAdmin - SCVMMNEW.a10	testing.com - Virtu	al Machine Ma	anager						
Home Home Create LOP Pool Create Logical Network Create VIP Template	Create Logical Switch	Add Resources •	Overview Fabric Resources	Services	PowerShell	View Dependent Resources	Refresh	Remove	Properties
Create		Add	Sh	DW	Window	Dependencies	Refresh	Remove	Properties

Figure 5: SCVMM Add Resources

4. The Add Load Balancer Wizard starts, Click Browse to select the account name, Select a Run As Account dialog appears. Then click OK.

Credentials Specify a Run As account Specify the Run As account Specify the Run As account Specify the Run As account with sufficient privileges to configure load balancers. These credentials will Select a Run As Account	3		Add Load Balancer Wi	zard		,
Credentials  Credentials  Specify a Run As account  Specify the Run As account  Specify the Run As account  with sufficient privileges to configure load balancers. These credentials will  Select a Run As account  Select a Run As account  Browse  Browse  Browse  alto default  Description  User Role  alto default  VMMAdmin	Credential	s				
Credentials     Specify a Run As account       Host Group     Specify the Run As account with sufficient privileges to configure load balancers. These credentials will       Manufacturer and Model     Select a Run As Account       Address     Select a Run As account       Select a Run As account     Browse       Variorizer     Image: Configure load balancers. These credentials will be readed by the read	- Croacitian			111		
Host Group Specify the Run As account with sufficient privileges to configure load balancers. These credentials will Manufacturer and Model Select a Run As Account Select a	Credentials	Specify a Rur	n As account			
Vanufacturer and Model Vanufacturer and Model Vaddress Address Select a Run As account Select a Run As account Select a Run As account Name Description User Role a10 default VMMAdmin	Host Group	Specify the Run A	As account with sufficient privile	ges to configure load balancers. The	se credentials will	be
Address Select a Run As account Browse Provider Description User Role a10 default VMMAdmin	Manufacturer and Model		Select a Run As A	ccount		
Provider a 10 default VMMAdmin	Address	Select a Rur	As account		Browse	
Provider Description User Role a10 default VMMAdmin	Logical Network Affinity		TAS decount	Q		
a10 default VMMAdmin	Provider	Name	Description	User Role		
and a state of the	Summary	a10 default		VMMAdmin		
	5-505 1 1 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0					
				Create Run As Account	Cancel	-
Create Run As Account				OK Const		_
Create Run As Account				UK Cancel		

Figure 6: SCVMM Run as Account dialog

5. On the specific host group, select **All Hosts** and click **Next**.



2	Add Load Balancer Wizard
🎥 Host Grou	p
Credentials Host Group	Specify the host groups for which the load balancers will be available Selecting a top-level host group automatically selects its child groups.
Manufacturer and Model Address Logical Network Affinity Provider Summary	rost groups:
	Previous Next Cancel

#### Figure 7: Host Group configuration

6. The **Manufacturer and Model** window appears. Leave the defaults selected and click **Next**.

24		Add Load Balancer Wizard		×
🎥 Manufactu	irer and N	lodel		
Credentials Host Group Manufacturer and Model	Specify ma Manufacturer: Model:	nufacturer and model of load bal A10 Networks, Inc. A10 Networks Product( AX or Thunder )	ancers •	
Logical Network Affinity Provider Summary				
			Previous Next	Cancel

Figure 8: Manufacturer and Model configuration

- 7. The Address window appears.
- 8. Enter the IP address and port of the A10 Load Balancer and click **Next**.

*Note:* If you have multiple IP addresses, separate the addresses from one another using commas or line breaks.

	Add Load Balancer Wizard
🎦 Address	
Credentials Host Group Manufacturer and Model	Specify load balancer addresses Specify the addresses for the load balancers you want to use. Use commas or line breaks to separate your entries. Valid addresses include: - IP addresses, including address ranges formatted as two IP addresses separated by a hyphen.
Address Logical Network Affinity Provider Summary	DNS names, using either fully qualified domain names (FQDN) or NetBiOS names. Addresses: 192.0.2.100 Port number: 443
	Previous Next Cancel

Figure 9: Address configuration

- 9. Click Next again to navigate to the Provider window.
- 10. Click Test. The status in the Test Result column should be "Passed" for each function.



Jeneral	Select a load balancer configura	ation provider			
Credentials	Select an available provider to be used fo	r load balancer configurati	on.		
Host Group	Provider: A10 Networks Load Balancer		•		
Manufacturer and Model	Load balancer for configuration test:				
	10.100.2.94		-	Test	
Logical Network Affinity	Test results:				
Provider	Function	Implemented	Test Result		
	Retrieve-LBSystemInfo	Yes	Passed		
	Open-LBConnection	Yes	Passed		
	Close-LBConnection	Yes	Passed		
	Retrieve-LBKnownVip	Yes	Passed		
	Retrieve-LBKnownCertificate	Yes	Passed		
	Retrieve-LBKnownBalancingMethod	Yes	Passed		
	Retrieve-LBKnownPersistence	Yes	Passed		

Figure 10: A10 provider verification

This completes the installation of the A10 SCVMM Provider Package to the SCVMM 2012 Configuration Fabric.

# 5 CONFIGURING AN ADC IN THE SCVMM FABRIC

This section shows how to create a Virtual IP (VIP) template for the added A10 ADC in SCVMM.

#### 5.1 CREATE VIP TEMPLATES FOR A10 LOAD BALANCER IN VMM

- 1. In Virtual Machine Manager (VMM), open the Fabric workspace.
- 2. In the Fabric pane, expand Networking, then click VIP Templates.

**Note:** The steps are grouped into separate sections based on the SCVMM GUI. However, the step numbering continues sequentially throughout the sections, because the steps in all the sections below are performed in most deployments of this solution.

# 5.1.1 VIP TEMPLATE CONFIGURATION

1. On the **Home** tab, in the **Show** group, click **Fabric Resources**. The Load Balancer VIP Template Wizard starts.



2. On the Name page, enter the information, then click Next.

*Note:* Virtual IP Port is the virtual port configured under the VIP on the A10 device.

<b>a</b>	Load balancer VIP template Wizard
🔄 Name	
Name Type Protocol Persistence Load Balancing Health Monitors Summary	Specify a name and description for this template         A virtual IP template contains load balancer-related configuration settings for a specific type of network traffic. The virtual port is the port that is used for the type of network traffic that you want to load balance.         Template name:       example         Description:
	Previous Next Cancel

Figure 11: Name configuration (for VIP template information)

# 5.1.2 VIP TYPE CONFIGURATION

On the Type page, select Specific, then select A10 Networks from the Manufacturer and Model list.



2	Load balancer VIP template Wizard
🧧 Туре	
Name Type Protocol Persistence Load Balancing Health Monitors Summary	Specify a template type         Select the type of template to create that best matches your environment.         Generic         A generic template can be used on any supported load balancer.         Specific         A virtual IP template can be used only on a load balancer of a specific manufacturer and model.         Manufacturer:         A10 Networks, Inc.         Model:
	Previous Next Cancel

Figure 12: Type configuration

# 5.1.3 VIP PROTOCOL OPTIONS

On the **Protocol** page, click the protocol for which you want to create the virtual IP template. The protocol determines the virtual port type on the A10 device.





Figure 13: Protocol configuration



#### Notes:

- HTTPS passthrough If you select this option, encryption carries all the way through to the virtual machine. The traffic is not decrypted at the A10 device. This option creates a TCP virtual port on the A10 device.
- HTTPS terminate If you select this option, traffic is decrypted at the A10 Device. This option
  requires a SSL certificate and key to be loaded onto the A10 device. VMM just inputs a certificate,
  so you will need to create or import a certificate and key of the same name on the A10 device.
  (See example below.)

Monitor	Mode / Config	Mode	Cert	tificate	Cert Revocation List	Expiration N	lail							
Get	Started	>	All	•	4				<b>H G</b>	[1 - 1] / 1	•	9 1	60	50 👻
SLB		*		File Nam	ie <u>Type</u>	Cor	nmon Name	Organization	Expiration	í Hereite a statement ser a state		Issuer	Ref	erred
	Service Template	ervice   emplate  lealth Monitor  lack-White List  SL Management  Hower Management	Sele	ect All	Unselect All	ificate/Key sd	2		Jun 19 09	53:40 2015	GMT Select	Self ed:	2	0
	Health Monitor Black-White List aFleX SSL Managemen		00	create	🕐 Import (	Delete 🤞	Export							
GSLE	3	>												
Security		•												
IP Source NAT		•												
Network		•												
System		>												

Figure 14: SSL certificate list on A10 device (A10 device's management GUI shown)

• **Re-Encrypt** – If you select this option, HTTPS traffic from the A10 device to real server is reencrypted, that is known as SSL bridging

# 5.1.4 PERSISTENT CONFIGURATION

Select **Enable** persistence, then select the Persistence type: SourceIP, DestinationIP, Cookie, or SSLSessionID.





Figure 15: Persistence configuration

# 5.1.5 LOAD BALANCING OPTIONS

Click **Next** to display the Load Balancing window. Select the Load Balancing method from the list. The A10 plugin supports the following methods:

- RoundRobin
- WeightedRoundRobin
- LeastConnections
- WeightedLeastConnection
- ServiceLeastConnection
- ServiceWeightedLeastConnection
- FastestResponseTime

- LeastRequest
- RoundRobinStrict
- StatelessSourceIPHash
- StatelessSourceIPOnlyHash
- StatelessDestinationIPHast
- StatelessSourceDestinationIPHash
- StatelessPerPacketRoundRobin



3	Load balancer VIP template Wizard
<ul> <li>Load Balan</li> <li>Name</li> <li>Type</li> <li>Protocol</li> <li>Persistence</li> <li>Load Balancing</li> <li>Health Monitors</li> <li>Summary</li> </ul>	Load balancer VIP template Wizard
	Previous Next Cancel

Figure 16: Load Balancing algorithm selection

# 5.1.6 HEALTH MONITORING CONFIGURATION

1. On the Health Monitors page, configure a health monitor. The A10 plugin supports a single health monitor.

Request Type	Response Required To Pass Health Check
GET /index.html	200 OK (response code or string)
HEAD /index.html	200 (must be response code)
POST /index.html \n\n <i>post-data</i>	200 OK (response code or string)



**Note:** For Layer 4 (TCP, UDP) or Layer 3 (PING) protocols, please leave the Request and Response strings empty.

2. On the **Summary** page, review the settings, then click **Finish**.

# 6 SUMMARY AND CONCLUSION

With the integration of A10's software and hardware appliances within SCVMM 2012, data center administrators have an easier way to deploy A10's advanced ADC capabilities into their virtual machine environment, going beyond the Microsoft NLB capabilities.

