QUICK START GUIDE



Ruckus Virtual SmartZone Getting Started Guide

Supporting SmartZone Release 5.1

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Document Conventions

The following table lists the text conventions that are used throughout this guide.

TABLE 1 Text Conventions

Convention	Description	Example
monospace	Identifies command syntax examples	<pre>device(config)# interface ethernet 1/1/6</pre>
bold	User interface (UI) components such as screen or page names, keyboard keys, software buttons, and field names	On the Start menu, click All Programs .
italics	Publication titles	Refer to the Ruckus Small Cell Release Notes for more information.

Notes, Cautions, and Warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

NOTE

A NOTE provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

ATTENTION

An ATTENTION statement indicates some information that you must read before continuing with the current action or task.



CAUTION

A CAUTION statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.



DANGER

A DANGER statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Command Syntax Conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

Convention	Description
bold text	Identifies command names, keywords, and command options.
<i>italic</i> text	Identifies a variable.
[]	Syntax components displayed within square brackets are optional.
	Default responses to system prompts are enclosed in square brackets.
{ x y z }	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
х у	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
	Repeat the previous element, for example, <i>member[member</i>].
١	Indicates a "soft" line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Document Feedback

Ruckus is interested in improving its documentation and welcomes your comments and suggestions.

You can email your comments to Ruckus at ruckus-docs@arris.com.

When contacting us, include the following information:

- Document title and release number
- Document part number (on the cover page)
- Page number (if appropriate)

For example:

- Ruckus SmartZone Upgrade Guide, Release 5.0
- Part number: 800-71850-001 Rev A
- Page 7

Ruckus Product Documentation Resources

Visit the Ruckus website to locate related documentation for your product and additional Ruckus resources.

Release Notes and other user documentation are available at https://support.ruckuswireless.com/documents. You can locate the documentation by product or perform a text search. Access to Release Notes requires an active support contract and a Ruckus Support Portal user account. Other technical documentation content is available without logging in to the Ruckus Support Portal.

White papers, data sheets, and other product documentation are available at https://www.ruckuswireless.com.

Online Training Resources

To access a variety of online Ruckus training modules, including free introductory courses to wireless networking essentials, site surveys, and Ruckus products, visit the Ruckus Training Portal at https://training.ruckuswireless.com.

Contacting Ruckus Customer Services and Support

The Customer Services and Support (CSS) organization is available to provide assistance to customers with active warranties on their Ruckus products, and customers and partners with active support contracts.

For product support information and details on contacting the Support Team, go directly to the Ruckus Support Portal using https://support.ruckuswireless.com, or go to https://www.ruckuswireless.com and select **Support**.

What Support Do I Need?

Technical issues are usually described in terms of priority (or severity). To determine if you need to call and open a case or access the self-service resources, use the following criteria:

- Priority 1 (P1)—Critical. Network or service is down and business is impacted. No known workaround. Go to the **Open a** Case section.
- Priority 2 (P2)—High. Network or service is impacted, but not down. Business impact may be high. Workaround may be available. Go to the **Open a Case** section.
- Priority 3 (P3)—Medium. Network or service is moderately impacted, but most business remains functional. Go to the **Self-Service Resources** section.
- Priority 4 (P4)—Low. Requests for information, product documentation, or product enhancements. Go to the **Self-Service Resources** section.

Open a Case

When your entire network is down (P1), or severely impacted (P2), call the appropriate telephone number listed below to get help:

- Continental United States: 1-855-782-5871
- Canada: 1-855-782-5871
- Europe, Middle East, Africa, Central and South America, and Asia Pacific, toll-free numbers are available at https://support.ruckuswireless.com/contact-us and Live Chat is also available.
- Worldwide toll number for our support organization. Phone charges will apply: +1-650-265-0903

We suggest that you keep a physical note of the appropriate support number in case you have an entire network outage.

Self-Service Resources

The Ruckus Support Portal at https://support.ruckuswireless.com offers a number of tools to help you to research and resolve problems with your Ruckus products, including:

Technical Documentation—https://support.ruckuswireless.com/documents

Preface

Contacting Ruckus Customer Services and Support

- Community Forums—https://forums.ruckuswireless.com/ruckuswireless/categories
- Knowledge Base Articles—https://support.ruckuswireless.com/answers
- Software Downloads and Release Notes—https://support.ruckuswireless.com/#products_grid
- Security Bulletins—https://support.ruckuswireless.com/security

Using these resources will help you to resolve some issues, and will provide TAC with additional data from your troubleshooting analysis if you still require assistance through a support case or RMA. If you still require help, open and manage your case at https://support.ruckuswireless.com/case_management.

About This Guide

About This Guide

This Virtual SmartZone (vSZ) Getting Started Guide provides information on how to set up the vSZ virtual appliance on the network. You can install the vSZ on any of the supported hypervisors.

Topics covered in this guide include preparing your chosen hypervisor, installing the vSZ image on to the hypervisor, and completing the vSZ Setup Wizard.

This guide is intended for use by those responsible for installing and setting up network equipment. Consequently, it assumes a basic working knowledge of local area networking, wireless networking, and wireless devices.

NOTE

If release notes are shipped with your product and the information there differs from the information in this guide, follow the instructions in the release notes.

Most user guides and release notes are available in Adobe Acrobat Reader Portable Document Format (PDF) or HTML on the Ruckus Networks support website at https://support.ruckuswireless.com/documents.

Notice Conventions

The following table lists the notice conventions that are used throughout this guide.

TABLE 2 Notice Conventions

Notice Type	Description
NOTE	Information that describes important features or instructions
CAUTION!	Information that alerts you to potential loss of data or potential damage to an application, system, or device
WARNING!	Information that alerts you to potential personal injury

Installation Preparation

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Obtaining the vSZ Distribution

You have to download the .OVA file and documentation for the controller from the vSZ download page on the Ruckus Networks support website. The vSZ distribution package, which is based on the Open Virtualization Format (OVF) framework, consists of a virtual appliance.

Open Virtualization Format contains the following files:

- Description file (.ovf)
- Manifest file (.mf)
- Virtual machine state file (.vmdk)

Preparing the vSZ Interface Settings to Use

vSZ comes with the option to operate with either one (1) network interface or three (3) network interfaces. Once the network interface configuration has been made and setup executed, the number of network interfaces can no longer be modified.



CAUTION

If you choose to operate the vSZ with three network interfaces, you must configure the three vSZ interfaces to be on three different subnets when you run the Setup Wizard. Failure to do so may result in loss of access to the web interface or failure of system functions and services.

- IP address
- Netmask
- Gateway
- Primary DNS server
- Secondary DNS server

TABLE 3 vSZ interfaces

Interface	Description
AP	Used for AP configuration and client traffic
Cluster	Used for cluster traffic
Management (Web)	Used for management traffic. The IP address that you assign to this interface will be the IP address at which you can access the vSZ web interface.

Virtual SmartZone Required Resources

Before upgrading vSZ to this release, verify that the virtual machine on which vSZ is installed has sufficient resources to handle the number of APs and wireless clients that you plan to manage. See the tables below for the **required** virtual machine system resources.

The values for vCPU, RAM, and Disk Size are linked together and cannot be changed individually. When changing one of these parameters, all three values need to **match exactly** with an existing Resource Level. Taking vSZ-H Resource Level 5 as an example: when adjusting the number of vCPU from 4 to 6, the amount of RAM needs to be adjusted to 22GB and the Disk Size needs to be adjusted to 300GB, thereby matching all of the values of Resource Level 6.



WARNING

These vSZ required resources may change from release to release. Before upgrading vSZ, always check the required resource tables for the release to which you are upgrading.

NOTE

When initially building up the network it is allowed to use a higher Resource Level than needed for the number of APs first deployed, as long as all the three parameters (vCPU, RAM and Disk Size) **match exactly** with that higher Resource Level.

ATTENTION

It is recommended that there should be only one concurrent CLI connection per cluster when configuring vSZ.

In the following tables the high scale resources are broken into two tables for easy readability. These tables are based on the *AP Count Range*.

AP Count Range		Max Clients	Nodes per Cluster	AP Count per Node (without switch)	AP/Switch Capacity Ratio	Switch Per Node(without AP)
From	То			Мах		Мах
10,001	30,000	300,000	4	10,000	8:1	1,250
	20,000	200,000	3		8:1	1,250
5,001	10,000	100,000	1-2	10,000	8:1	1,250
2,501	5,000	50,000	1-2	5,000	8:1	625
1,001	2,500	50,000	1-2	2,500	8:1	312
501	1,000	20,000	1-2	1,000	5:1	200
101	500	10,000	1-2	500	5:1	100
1	100	2,000	1-2	100	5:1	20

TABLE 4 vSZ High Scale required resources

TABLE 5 vSZ High Scale required resources

AP Co	unt Range	VCPU	RAM	Disk Size	Preserved Events	Concurrent CLI Connection	Resource Level
From	То	Logic Processor ^{[1][2]} ^[3]	GB ^[3]	GB	Мах	Max (per node not per cluster)	
10,001	30,000	24	48	600	3 M	4	8
	20,000						
5,001	10,000	24	48	600	3 M	4	7

AP Count Range		vCPU	RAM	Disk Size	Preserved Events	Concurrent CLI Connection	Resource Level
2,501	5,000	12	28	300	2 M	2	6.5
1,001	2,500	6	22	300	1.5 M	2	6
501	1,000	4	18	100	600 K	2	5
101	500	4	16	100	300 K	2	4
1	100	2	13	100	60 K	2	3

TABLE 5 vSZ High Scale required resources (continued)

In the following tables the essential scale resources are broken into two tables for easy readability. These tables are based on the *AP Count Range*.

TABLE 6 vSZ Essentials required resources

AP Count Range		Maximum Clients	Nodes per Cluster	AP Count per Node	AP/Switch Capacity Ratio	Switch Per Node(without AP)
From	То			Мах		Мах
1025	3,000	60,000	4	1,024	5:1	200
	2,000	40,000	3		5:1	200
501	1,024	25,000	1-2	1,024	5:1	200
101	500	10,000	1-2	500	5:1	100
1	100	2,000	1-2	100	5:1	20

TABLE 7 vSZ Essentials required resources

AP Count Range		VCPU	RAM	Disk Size	Preserved Events	Concurrent CLI Connection	Resource Level
From	То	Logic Processor [1][2][3]	GB ^[3]	GB	Мах	Max (per node not per cluster)	
1025	3,000	8	18	250	10 K	2	3
	2,000	-					
501	1,024	8	18	250	10 K	2	2
101	500	4	16	100	5 K	2	1.5
1	100	2	13	100	1 K	2	1

NOTE

Logic Processor ¹ vCPU requirement is based on Intel Xeon CPU E5- 2630v2 @2.60 GHz.

Logic Processor ² Azure with low CPU throughput unsupported. The vSZ with the lowest resource plan (2 core CPU, 13 GB memory) can NOT be supported due to the low CPU throughput on Azure.

Logic Processor ³ vSZ-H and vSZ-E have different report interval. For example, AP sends the status to vSZ-E every 90 seconds but to vSZ-H it is sent every 180 seconds, which means that vSZ-E need more CPU in scaling environment based on the resource level.

Clustering Limitations

The following are the limitations for vSZ-H and vSZ-E.

Clustering Limitations for vSZ-H

- vSZ-H supports up to 10,000 APs per node or 30,000 APs per cluster, assuming proper system resources are made available. It supports clustering of up to 4 nodes when using Resource Level 6.
- At 4 nodes, the maximum number of APs and clients that can be supported are 30,000 and 300,000 respectively.

Clustering Limitations for vSZ-E

- vSZ-E supports up to 1,024 APs per node or 3000 APs per cluster, assuming proper system resources are available. It supports clustering of up to 4 nodes when using Resource Level 2.
- Above 2 nodes in a cluster at Resource Level 2, additional 2 CPU cores need to be added to each node to support the added search capabilities and replication.
- At 4 nodes, the maximum number of APs and clients that can be supported are 3,000 and 60,000 respectively.
- NAT operation for vSZ cluster: Currently, each node requires its own public IP address for its NAT'ed interface. As such, a 1:1 NAT is recommended for setting up a cluster behind a NAT environment.

Installing the vSZ on a Hypervisor

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Preparing a Hypervisor

This section lists the hypervisors (and their release versions) on which you can install the vSZ.

TABLE 8 Hypervisors that the vSZ supports	

Vendor	Hypervisor	Version
VMWare	ESXi	6.7 and later
Windows	Windows Server Hyper-V	Windows Server Hyper-V (2012 R2)
KVM	CentOS	7.4 (64bit)

Installing the vSZ on VMWare vSphere Hypervisor

You have to install the vSZ on a VMWare vSphere hypervisor.

Before You Begin

You have to complete the prerequisites before installing the vSZ on VMWare vSphere.

Verify that you have the prerequisites before installing the vSZ on VMWare vSphere.

- Verify that vSphere client is installed.
- You can deploy the vSZ only on hosts that are running ESXi version 6.7 and later.
- The vSZ appliance requires at least 100GB of disk space and is limited to a maximum size of 600GB. The vSZ appliance can be deployed with thinprovisioned virtual disks that can grow to the maximum size of 600GB.

Creating a vSZ Instance from the OVA File

You can create a vSZ instance using the vSphere Web Client.

Before continuing, ensure you have already downloaded the vSZ distribution package. See Obtaining the vSZ Distribution for more information.

Follow these steps to create a vSZ instance from the OVA file.

1. Use the VMWare vSphere client to log on to the ESXi management interface.

2. Click File> Deploy OVF Template. The Source screen of the Deploy OVF Template wizard appears.



FIGURE 1 Click Deploy OVF Template

3. Click **Browse** to locate the .ova file that you downloaded earlier. Select the template.

FIGURE 2 Click Browse, and then locate and select .ova file

🖉 Deploy OVF Template				
Source Select the source location.				
Source OVF Template Details Name and Location I Host / Cluster Resource Pool Disk Format Ready to Complete	Deploy from a file or URL C:\Users\neo\Desktop\vscg=installer_2.5.0.1.166.ovs Browse Enter a URL to download and install the OVF package from the Internet, or specify a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.			
Help	< Back Next > Cancel			

4. Click Next. The OVF Template Details screen appears.

FIGURE 3 The OVF Template Details	screen
-----------------------------------	--------

🚱 Deploy OVF Template		E	- • •
OVF Template Details			
verity over template details.			
Source OVF Template Details End User License Agreement Name and Location	Product: Version: Vendor: Publisher: Download size: Size on disk: Description:	Virtual Smart Cell Gateway 2.5.0.1.166 Ruckus Wireless, Inc. No certificate present 704.6 MB 1.8 GB (thin provisioned) 100.0 GB (thick provisioned) 100.0 GB (thick provisioned) Ruckus Virtual SmartCell [™] Gateway (vSCG), is a Network Functions Virtualization (NFV) based WLAN Controller for service providers and enterprises who desire a carrier-class solution that runs in the cloud. It supports all of the WLAN Controller features of the industry leading SCG-200, while also enabling the rollout of highly scalable and resilient wireless LAN cloud services.	
Help		< Back Next >	Cancel

5. Review the OVA virtual appliance details, and then click **Next**. The End User License Agreement (EULA) screen appears.

6. Click **Accept** to agree to the EULA terms, and then click **Next**. The **Host/Cluster** screen appears.

2	Deploy OVF Template	
	End User License Agreement	:
	Accept the end user license a	greements.
Г	Source	
	OVF Template Details	
	Name and Location	RUCKUS WIRELESS, INC.
Œ	Host / Cluster	
	Resource Pool	PLEASE READ THIS SOFTWARE LICENSE CAREFULLY. RUCKUS WIRELESS, INC.
	Disk Format	ONLY ON THE CONDITION THAT THE LICENSEE ACCEPTS ALL OF THE FOLLOWING
	Ready to Complete	TERMS AND CONDITIONS.
		IF A USER ACCEPTS THIS LICENSE, OR DOWNLOADS, USES OR INSTALLS THE SOFTWARE, AS AN EMPLOYEE OF, OR AS AN AGENT
		OR CONTRACTOR FOR THE BENEFIT OF, A COMPANY, THAT COMPANY SHALL BE
		DEEMED THE LICENSEE AND THE USER
		ON BEHALF OF THE COMPANY.
		BY DOWNLOADING, INSTALLING AND/OR USING THE SOFTWARE, LICENSEE
		ACKNOWLEDGES THAT IT HAS READ THIS LICENSE AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. IF LICENSEE DOES NOT AGREE
		TO THE TERMS AND CONDITIONS OF THIS
		LICENSE, RUCKUS IS UNWILLING TO LICENSE THE SOFTWARE. IN THAT EVENT,
		THE SOFTWARE AND SHALL BE GIVEN A FULL REFUND OF ANY LICENSE FEES ALREADY
		PAID FOR THE SOFTWARE.
		1) Definitions
		Device "means a single Ruckus access point or controller, as applicable, on Licensee's network.
		"Documentation" means the published technical manuals, including any updates thereto,
		relating to the use of the Software made generally
		"Software" means a copy of a machine executable version of a Ruckus software product
		that Ruckus makes available to Licensee for download
		onto equipment owned or controlled by Licensee, and any error corrections, updates or
		available to Licensee.
		"License Term" means the period of time for which the licenses to the Software granted to $$ $$
•	4	Accept
	Help	e Bade Novit Consel
-	p	

FIGURE 4 Accept the EULA for the vSZ OVA

7. Select the host or cluster on which you want to run the deployed template, and then click **Next**. The **Resource Pool** screen appears.

FIGURE 5 Select the destination host or cluster

🖉 Deploy OVF Template					
Host / Cluster	Host / Cluster				
On which host or cluster do	you want to run the deployed template?				
Source OVF Template Details End User License Agreement	Eng Test Bed				
Name and Location	PLM UV9				
Host / Cluster					
Resource Pool					
Disk Format					
Ready to Complete					
Help	< Back	Next > Cancel			

8. Select the resource pool within which you want to deploy the template, and then click **Next**. The storage screen appears.

FIGURE 6 Select the resource pool for the OVA template

🖉 Deploy OVF Template	
Resource Pool	
Select a resource poor.	
OVF Template Details	Select the resource pool within which you wish to deploy this template.
End User License Agreement Name and Location	Resource pools allow hierarchical management of computing resources within a host or cluster. Virtual machines and child pools share the resources of their parent pool.
Host / Cluster	
Resource Pool Storage	Admin
Disk Format	o vscg-cluster-1
Network Mapping Ready to Complete	
	Sim-2
<u> </u>	
Help	< Back Next > Cancel

9. Select the destination storage (data store) for virtual machine files, and then click **Next**. The **Disk Format** screen appears.

FIGURE 7 Select the data store for the virtual machine files

Storage Where do you want to store the virtual machine files: Source OVF Template Details End User License Agreement Name and Location Name Orive Type Capacity Provisioned Free Type Thin Provisioned Storage Disk Format Name Orive Type Capacity Provisioned Free Type Thin Providates SSD Storage Disk Format Network Mapping Ready to Complete III III III III III III III IIII IIII IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
Where do you want to store the virtual machine files? Source OVF Template Details End User License Agreement VM Storage Profile: Name and Location Host / Cluster Resource Pool Storage Disk Format Network Mapping Ready to Complete Gatastore8 SSD 372.50 GB 343.34 GB 291.54 GB VMFS5 Supporte Image: datastore7 SSD 365.00 GB 322.55 GB 360.72 GB VMFS5 Supporte Image: datastore7 SSD 365.00 GB 221.92 GB 353.30 GB VMFS5 Supporte Image: datastore8 SSD 372.50 GB 157.68 GB 360.72 GB VMFS5 Supporte Image: datastore9 SSD 372.50 GB 157.68 GB 360.72 GB VMFS5 Supporte Image: datastore9 SSD 372.50 GB 157.68 GB 360.72 GB VMFS5 Supporte Image: datastore9 SSD 372.50 GB 157.68 GB 360.72 GB VMFS5 Supporte Image: datastore9 Unknown 49.22 GB 762.68 MB 48.47 GB NFS
Source OVF Template Details End User License Agreement Mame and Location Host / Cluster Resource Pool Storage Disk Format Network Mapping Ready to Complete Image: Complete Image: Complete
Source OVF Template Details End User License Agreement Name and Location Host / Cluster Resource Pool Storage Disk Format Network Mapping datastore3 Ready to Complete SSD Image: Storage Disk Format Unknown Network Mapping datastore8 SSD 372.50 GB 143.21 GB VMFFSS Supporte Image: Supporte datastore7 SSD 367.50 GB 343.34 GB 291.54 GB VMFSS Supporte Image: datastore7 SSD 365.00 GB 221.92 GB 353.30 GB VMFSS Supporte Image: datastore7 SSD 372.50 GB 157.68 GB 360.72 GB VMFSS Supporte Image: datastore7 SSD 372.50 GB 157.68 GB 360.72 GB VMFSS Supporte Image: datastore7 Unknown 49.22 GB 762.68 MB 48.47 GB NFS Supporte Image: datastore9 Disable Storage DRS for this virtual machine Select a datastore: Image: datastore9 Image: datastore9 Image: datastore9
OVF Template Details End User License Agreement Name and Location Host / Cluster Resource Pool Storage Disk Format Network Mapping Ready to Complete Image: Com
Name Drive Type Capacity Provisioned Free Type Thin Provisioned Host / Cluster Resource Pool SSD 367.50 GB 392.55 GB 143.21 GB VMF55 Supporte Storage Disk Format SSD 367.00 GB 343.34 GB 291.54 GB VMF55 Supporte Disk Format Atastore7 SSD 365.00 GB 221.92 GB 353.30 GB VMF55 Supporte It datastore7 SSD 365.00 GB 221.92 GB 360.72 GB VMF55 Supporte It datastore8 SSD 372.50 GB 157.68 GB 360.72 GB VMF55 Supporte It datastore9 Unknown 49.22 GB 762.68 MB 48.47 GB NF5 Supporte It datastore9 Disable Storage DRS for this virtual machine Select a datastore: Name Drive Type Capacity Provisioned Free Type Thin Provi
Host / Cluster. Resource Pool Storage Disk Format Network Mapping Ready to Complete Image: Complete </th
Storage Disk Format Disk Format 0 datastore4 SSD 372.50 GB 343.34 GB 291.54 GB VMFS5 Supporte Image: Disk Format 0 datastore7 SSD 365.00 GB 221.92 GB 353.30 GB VMFS5 Supporte Image: Disk Format 0 datastore7 SSD 365.00 GB 221.92 GB 353.30 GB VMFS5 Supporte Image: Disk Format 0 datastore8 SSD 372.50 GB 157.68 GB 360.72 GB VMFS5 Supporte Image: Disk Format 0 datastorenfs Unknown 49.22 GB 762.68 MB 48.47 GB NFS Supporte Image: Disable Storage DRS for this virtual machine Select a datastore: Image: Drive Type Capacity Provisioned Free Type Thin Provi
Disk Format Network Mapping Ready to Complete Image: Complete </th
Network Mapping Ready to Complete Image: Comple
Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image: Complete Image:
 ✓ III ✓ Disable Storage DRS for this virtual machine Select a datastore: Name Drive Type Capacity Provisioned Free Type Thin Provi
 ✓ III → Disable Storage DRS for this virtual machine Select a datastore: Name Drive Type Capacity Provisioned Free Type Thin Provi
✓ III ✓ Disable Storage DRS for this virtual machine Select a datastore: Name Drive Type Capacity Provisioned Free Type Thin Provi
III ► □ Disable Storage DRS for this virtual machine Select a datastore: Name Drive Type Capacity Provisioned Free Type Thin Provi
Disable Storage DRS for this virtual machine Select a datastore: Name Drive Type Capacity Provisioned Free Type Thin Provi
Disable Storage DRS for this virtual machine Select a datastore: Name Drive Type Capacity Provisioned Free Type Thin Provi
Select a datastore: Name Drive Type Capacity Provisioned Free Type Thin Provi
Name Drive Type Capacity Provisioned Free Type Thin Provi
A III A A A A A A A A A A A A A A A A A
<u>H</u> elp ≤ Back Next ≥ N Cancel

- 10. Select the disk format that is appropriate for your deployment scenario. Options include:
 - Thick Provision Lazy Zeroed
 - Thick Provision Eager Zeroed
 - Thin Provision

FIGURE 8 Select the disk format for your deployment scenario

🖉 Deploy OVF Template				- 0 -
Disk Format	مراجع والمعرفية والمعرفية والمعرفة			
In which format do you wa	nt to store the virtual disks?			
<u>Source</u> OVF Template Details	Datastore:	datastore3	_	
End User License Agreement	Available space (GB):	143.2		
Host / Cluster				
Resource Pool Storage	Thick Provision Lazy Zeroe	d		
Disk Format	Thick Provision Eager Zero	ed		
Ready to Complete	C Thin Provision			
1			1	
Help		_	≤ Back Next ≥ Solution	Cancel
				///

11. Click Next. The Network Mapping screen appears.

12. Select the ESXi virtual network interface that you want to use for the control interface, and then click **Next**. The **Ready to Complete** screen appears.

The installation screen only allows you to select the virtual network interface for the control interface. After you complete the installation (and before you power on and set up the vSZ), you will need to adjust the cluster and management interfaces as appropriate.

FIGURE 9 Select the virtual network interface that the template will use

🕜 Deploy OVF Template			- • •
Network Mapping What networks should the	deployed template use?		
Source OVF Template Details End User License Agreement Name and Location Host / Cluster Resource Pool Storage Disk Format Network Mapping Ready to Complete	Map the networks used in this OV		
Help		≤ Back Next ≥	Cancel

Review the settings that you have configured on the previous screens. If you find a setting that you want to change, click
 Back until you reach the screen where you can edit the setting. Update the setting, and then click Next until you reach
 the Ready to Complete screen again.

FIGURE 10 Review the settings that you have configured

🖉 Deploy OVF Template		
Ready to Complete	want to use?	
Are trese the options you	want to use?	
Source	When you dick Einish, the deploye	nent task will he started
End User License Agreement	Deployment settings:	
Name and Location	OVF file:	C:\Users\ineo\Desktop\vscg-installer 2.5.0.1.166.ova
Host / Cluster	Download size:	704.6 MB
Resource Pool	Size on disk:	100.0 GB
Disk Format	Name:	Virtual Smart Cell Gateway
Network Mapping	Folder:	PLM Lab
Ready to Complete	Host/Cluster:	Eng Test Bed
	Datastore:	datastore3
	Disk provisioning:	Thick Provision Lazy Zeroed
	Network Mapping:	"VM Network"to "Control Network"
	1	
	Power on after deployment	
Help		≤Back Finish Cancel
		•••••••••

14. Make sure that the **Power on after deployment** check box is clear so you can adjust the network settings before the vSZ setup.**Caution**: If you power on the vSZ after installation, you will no longer be able to adjust the network settings.

15. Click Finish.

ESXi deploys the new vSZ instance. When ESXi completes the deployment, the new vSZ instance appears on the list of installed virtual machines on the target host.

FIGURE 11 The vSZ instance appears on the list of installed VMs

vmware [®] vSphere Web Cli	ient 🔒 🖉
🗘 vCenter 🕨 🔊 🖡	SCG1-DataCenter Actions -
	Getting Started Summary Monitor Manage Re
 ✓ Iocalhost ✓ Datacenter ✓ 10.3.3.244 ✓ FM_VM_9.8.0.0.26 (chai ✓ FreeRADIUS (Jeanette) ✓ HS20-R2_CentOS (Dave) ✓ HS20-R2_OSU (Dave) ✓ Novell (Jeanette) ✓ portal (Jeanette) ✓ portal (Jeanette) ✓ portal2 (Jeanette) ✓ portal3 (Jeanette) ✓ SCI Demo LCS (Jeanette) ✓ VMware vCenter Server ✓ VSCG-Public SE Access ✓ VSCG1-DataCenter ✓ Win2008 (Deepak) ✓ ZDVM-Public (Deepak) 	<text><text><text><text></text></text></text></text>

You have completed creating a vSZ instance from the OVA file.

Allocating Resources and Assigning Network Interfaces

Before starting the vSZ instance for the first time, edit the virtual machine settings to allocate CPU and memory resources to the vSZ and to assign the ESXi network interfaces to the remaining vSZ interfaces (cluster and management).

Ensure that you read steps 1-7 before starting the application.

Follow these steps to allocate resources and assign network interfaces to the vSZ.

- 1. On the list of virtual machines, click the new vSZ instance.
- 2. Click **Actions** to display the additional options, and then click **Edit Settings**.
- 3. Set the number of CPUs and the amount of RAM to allocate to the vSZ instance. By default, the OVA template is set to 4 CPUs and 8GB of RAM.
- 4. Under **Network adapter 1**, verify that it is the same ESXi network interface that you selected for the control interface during the OVA import process. Ensure that the **Connect at Power On** check box is selected.

- 5. Under **Network adapter 2**, select the ESXi network interface for the cluster interface from the drop-down list. Ensure that the **Connect at Power On** option is selected.
- 6. Under **Network adapter 3**, select the ESXi network interface for the management interface from the drop-down list. Ensure that the **Connect at Power On** option is selected.

/intual Hardware VM Option	s SDRS Rules vApp	Optic	ons			
CPU	4	-	0			
🌆 Memory	8192	ħ	MB	-		
🛄 Hard disk 1	50		GB	-		
G SCSI controller 0	LSI Logic SAS	LSI Logic SAS				
飅 Network adapter 1	TM Mgmt Network	TM Mgmt Network				
Status	🗹 Connect At Power (Dn			Control	
Adapter Type	VMXNET 3			-		
MAC Address	00:50:56:85:d3:1b				Automatic 👻	
📰 *Network adapter 2	VLAN102			•		
Status	Connect At Power C	Dn			Cluster	
Adapter Type	VMXNET 3			-		
MAC Address	00:50:56:85:17:0b				Automatic 👻	
对 *Network adapter 3	Public Interface			•		
Status	🗹 Connect At Power 0	Dn			Management	
Adapter Type	VMXNET 3			*		
MAC Address	00:50:56:85:17:5e				Automatic 💌	
🕎 Video card	Specify custom settin	gs		-		
I VMCI device						
Other Devices						
Upgrade	Schedule VM Com	batibi	lity Upgr	ade		
New device:	Select		-	A	dd	

FIGURE 12 Select the interfaces to use

7. Click **OK**. You have completed allocating resources and assigning network interfaces to the vSZ.

Powering on the vSZ virtual machine

The next step is to power on the vSZ virtual appliance.

- 1. From the list of virtual machines on the host, click the vSZ instance.
- 2. Under Basic Tasks, click Power on the virtual machine.

FIGURE 13 Click Power on the virtual machine

VSCG1-DataCenter Win2008 (Deepak)		
	Basic Tasks	Explore Further
	Power on the virtual machine Power off the virtual machine	Learn how to install a guest operating system
	 Suspend the virtual machine Edit virtual machine settings 	Learn more about virtual machines Learn about templates

3. Open a console window to monitor the startup process. To do this, click the *Action* menu, and then click **Open Console**. After the vSZ completes its startup process, you are ready to perform the initial IP address setup of the vSZ. You will use the console connection to perform this task.

Installing the vSZ on Windows Server Hyper V

Before you begin, verify that Hyper-V is enabled on Windows Server. Follow these steps to install the vSZ on Windows Server Hyper-V.

- 1. Obtain a copy of the vSZ image in VHD format.
- 2. Extract the vSZ image to the .vhd disk file.
- 3. Copy the image to the Windows Server on which you are running Hyper-V.
- 4. On the Windows Server, click **Start > Administrative Tools**, and then double-click **Hyper-V Manager**.

5. In the Hyper-V Manager, select the Hyper-V core for which you want to create a virtual machine and click **Virtual Machine > Action > New > New Virtual Machine Wizard**. The appears and displays the **Before You Begin** screen.

				Нур	er-V Manager			_	
File Ad	ction	View Help							
<	۶								
🔛 Hype	r-V N	/lanager					Act	tions	
		New	۲	Virtual Machine			٧L	AB	-
		Import Virtual Machine		Hard Disk	CPU Usage	Assigned Memory l		New	•
		Hyper-V Settings		Floppy Disk	nines were found on t	his server.	1	Import Virtual Machine	
		Virtual Switch Manager			L		8	Hyper-V Settings	
		Virtual SAN Manager						Virtual Switch Manager	
		Edit Disk					1	Virtual SAN Manager	
		Inspect Disk					1	Edit Disk	
		Stop Service					4	Inspect Disk	
		Remove Server						Stop Service	
		Refresh					X	Remove Server	
		View	+				a	Refresh	
		Help						View	•
				?	Help				
			Спескр	oints					
			Dataila						
	Details								
No item selected.									
				10					
Displays th	isolays the New Virtual Machine Wizard								
- oprayo a									

FIGURE 14 Click Action > New > Virtual Machine

6. Click **Next**. The **Specify Name and Location** screen appears.

FIGURE 15 The New Virtual Machine Wizard screen

8	New Virtual Machine Wizard
Before You B	legin
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	 This wizard helps you create a virtual machine. You can use virtual machines in place of physical computers for a variety of uses. You can use this wizard to configure the virtual machine now, and you can change the configuration later using Hyper-V Manager. To create a virtual machine, do one of the following: Click Finish to create a virtual machine that is configured with default values. Click Next to create a virtual machine with a custom configuration. In the provided equation of the following with a custom configuration. In the provided equation of the provided equation of the provided equation of the provided equation. In the provided equation of the provi
	< Previous Next > Finish Cancel

7. In **Name**, type a name for the virtual machine that you are installing (for example, Virtual SmartZone).

FIGURE 16 Specify Name and Location

8	New Virtual Machine Wizard			
Specify Name	e and Location			
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk	Choose a name and location for this virtual machine. The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload. Name: vSZ You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server.			
Installation Options	Store the virtual machine in a different location			
Summary	Location: C:\ProgramData\Microsoft\Windows\Hyper-V\ If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space.			
	< Previous Next > Finish Cancel			

- 8. Specify the folder on the server where you want to install the virtual machine.
 - a) To install the virtual machine in the default location, make sure that the Store the virtual machine in a different location check box is clear.
 - b) To install the virtual machine in a location other than the default, select and Store the virtual machine in a different location check box, and then browse to or type the new location.

9. Click **Next**. The **Specify Generation** screen appears.

FIGURE 17 Specify Generation

36	New Virtual Machine Wizard
Specify Gene	ration
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	 Choose the generation of this virtual machine. ● Generation 1 This virtual machine generation provides the same virtual hardware to the virtual machine as in previous versions of Hyper-V. O Generation 2 This virtual machine generation provides support for features such as Secure Boot, SCSI boot, and PXE boot using a standard network adapter. Guest operating systems must be running at least Windows Server 2012 or 64-bit versions of Windows 8. Once a virtual machine has been created, you cannot change its generation.
	< Previous Next > Finish Cancel

10. Select **Generation 1** for the virtual machine that you are installing. Hyper-V offers Generation 1 and Generation 2. See the Hyper-V documentation for more information about these two generations.

11. Click **Next**. The **Assign Memory** screen appears.

FIGURE 18 Assign Memory

3	New Virtual Machine Wizard
Assign Memo	жү
Before You Begin Specify Name and Location Specify Generation	Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 29250 MB. To improve performance, specify more than the minimum amount recommended for the operating system. Startup memory: 15000 MB
Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	 Use Dynamic Memory for this virtual machine. When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.
	< Previous Next > Finish Cancel

12. In **Startup memory**, type 13GB for vSZ High Scale or 15GB for vSZ Essentials (as relevant), which are the minimum memory that Ruckus Networks recommends for deploying vSZ. You can type a higher value if more memory is available on the server. For more information, see Table 4 and Table 5.

13. Click Next. The Configure Networking

FIGURE 19 Configuring Network

8	New Virtual Machine Wizard	x
Configure Networking		
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	Each new virtual machine includes a network adapter. You can configure the network adapter to use virtual switch, or it can remain disconnected. Connection: vs-br2	a
	< Previous Next > Finish Cancel	

14. In **Connection**, select the network adapter that you want the virtual machine to use.
15. Click **Next**. The **Connect Virtual Hard Disk** screen appears.

FIGURE 20 Connect Virtual Hard Disk

a.	New Virtual Machine Wizard	5
Connect Vir	tual Hard Disk	
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Summary	A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure it later by modifying the virtual machine's properties. Create a virtual hard disk Use this option to create a VHDX dynamically expanding virtual hard disk. Name: vSZ.vhdx Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\ Size: 127 GB (Maximum: 64 TB) Use this option to attach an existing virtual hard disk, either VHD or VHDX format. Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\ Use this option to attach an existing virtual hard disk, either VHD or VHDX format. Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\ Browse Attach a virtual hard disk later Use this option to skip this step now and attach an existing virtual hard disk later.	
	< Previous Next > Finish Cancel	

16. Select Use an existing virtual hard disk.

17. Click **Browse** to specify the location of the existing virtual hard disk for the virtual machine to use.

FIGURE 21 Selecting Virtual Hard Disk

🌜 Open	x
🍥 🐵 🔹 🛧 🍱 « C: 🕨 users 🕨 public 🔺 Documents 🕨 hyper-v 🕨 Virtual hard disks	Search Virtual hard disks
Organize 👻	₩ = ▼ 🔟 @
Microsoft Managemer IN vscg-3.4.0.0.238.vhd 40.0 GB	
File name: vscg-3.4.0.0.238.vhd	✓ Virtual hard disk files ✓ Open Cancel

18. Click Next. The Completing New Virtual Machine Wizard screen appears.

FIGURE 22 Completing New Virtual Machine Wizard

b	New Virtual Machine Wizard					
Completing	the New Virtual Machine Wizard					
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk	You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine. Description: Name: vSZ Generation: Generation 1 Memory: 15000 MB					
Summary	Network: vs-br2 Hard Disk: C:\users\public\Documents\hyper-v\Virtual hard disks\vscg-3.4.0.0.238.vhd (VHD, fixed)					
	To create the virtual machine and close the wizard, click Finish.					
< Previous Next > Finish Cancel						

 Review the settings that you can configure for the virtual machine. If you find any setting that need to be changed, click Previous until you reach the screen where you can update the setting. Update the setting, and then click Next until the Completing New Virtual Machine Wizard screen appears again.
 20. Click **Finish** to install the virtual machine. When Windows Server completes installing the virtual machine, the **New Virtual Machine Wizard** disappears and the virtual machine you installed appears on the list of virtual machines on Hyper-V Manager.

100		Нур	ber-V Manager		_ ×	
File Action View Help						
🗢 🔿 🙍 🖬 👔						
Hyper-V Manager	Minter I Bar alsia				Actions	
	Virtual Machin	6			VLAB	•
WIN-61V6RU4INHLI	Name	State	CPU Usage	Assigned Memory	l New	•
	vsz	Off			Import Virtual Machine	
					Hyper-V Settings	
					Virtual Switch Manager	
					Vintual CANI Manageria	
					Virtual SAIN Manager	
					💋 Edit Disk	
					🖳 Inspect Disk	
					Stop Service	
					🗙 Remove Server	
					🔉 Refresh	
					View	Þ
	<	Ш			📝 Help	
	Checknoints					
	encorpoints					
	I				1	

FIGURE 23 The virtual machine you installed appears on the list of virtual machines on Hyper- V Manager

21. Right-click the virtual machine you installed, and then click **Start** to power on the virtual machine.

111 111		Hyper	-V Manager		<u>×</u>
File Action View Help					
Hyper-V Manager	Virtual Ma	achines			Actions VLAB
WIN-bi V6RU4ΝΗLI	Name VSZ	State Connect Settings Start Checkpoint Move Export Rename Delete Enable Replication Help	CPU Usage	Assigned Memory	New Import Virtual Machine Hyper-V Settings Virtual Switch Manager Virtual SAN Manager Edit Disk Inspect Disk Stop Service Remove Server Refresh View Help
	Checkpoin	nts			vSZ 🔺

FIGURE 24 Right-click the virtual machine, and then click Start

The Virtual Machine Connection screen appears.

Installing the vSZ on a Kernel based Virtual Machine Hypervisor



		Нур	er-V Manager				D X
File Action View Help							
🗢 🔿 🞽 📧 🚺 🖬	_						
Hyper-V Manager	Virtual Machin	~~			Actions		
WIN-6TV6RU4NHLI	Virtual Machin	8	CRUUU	A 1 114	VLAB		•
	Name	Bunning	12 %	Assigned Memory 15000 MB	l New		-
			10.40.10.1		Import Virtual Machine	×	
	• <u>₹</u>	VSZ	on VLAB - Virt	ual Machine Connec	tion 🕒 🗖		
	File Action	Media Clipboard V	iew Help				
		U U II	り 堕				
	init: ip6de [NK]	faultgw (lo) po	st-start pro	cess (790) termi	nated with status 1		
	Setting hos	tname vSZ: [OK J				
	Setting up [OK]	Logical Volume	Management:	1 logical volu	me(s) in volume group	"V	
	mount: spec	ial device /dat	a/ng/rootfs2	/state/opt/rucku	swireless/wsg/conf/cli	l∕c	-
	Enabling lo	ical filesystems ical filesystem	; L UK J quotas: [ок ј			
	< Enabling /e	tc/fstab_swaps:	COK 1				
	C Starting sy	m-interactive s slog-ng: [OK	l l			=	-
	Calling the	system activit	y data colle	ctor (sadc):			
	V COK 1	mittoring for va	VJ00. I I	ogical volume(s)	In volume group vybe		
	-0	Annluing fingun	ll wulaat [ו עח			
	iptables: A	npplying firewal	l rules: [OK J			
	<	Ш				>	
	Status: Running				- B	.	
	<	m					,

22. Login to the virtual machine with your credentials.

You have now completed installing the vSZ on Windows Server Hyper-V.

Installing the vSZ on a Kernel based Virtual Machine Hypervisor

This section describes how to install the vSZ on a KVM hypervisor.

Extracting the vSZ Image

The vSZ image for a kernel-based virtual machine (KVM) is distributed in QCOW2 format.

- 1. Obtain the vSZ image in QCOW2 format.
- 2. Copy the image to the KVM.
- 3. Open the terminal window.

4. Make the image bin file executable by entering the following command: **chmod +x {file name of the controller QCOW bin}** See Figure for an example.

FIGURE 26 Make the bin file executable



5. Extract the contents of the QCOW2 bin file.

FIGURE 27 Extract the contents of the QCOW2 image

🕽 🗇 🗇 numbersix@toaster: ~					
umbersix@toaster:-\$ chmod +x vscg-3.1.1.0.442.qcow2.bin umbersix@toaster:-\$./vscg-3.1.1.0.442.qcow2.bin					

The end user license agreement appears on screen.

6. At the Accept this agreement? [yes/no] prompt, enter yes.

FIGURE 28 Accept the EULA terms

🔊 🖃 🔲 🛛 numbersix@toaster: ~ withheld. This agreement may be executed simultaneously in any number of counterparts, each of which will be deemed an original, but all of which together constitute one and the same agreement. The parties agree that electronic signatures are valid signatures for enforcement of this agreement. This agreement constitutes the entire agreement between Ruckus and Licensee with respect to the subject matter hereof. This agreement supersedes all prior negotiations, agreements and underta kings between the parties with respect to such subject matter. As a matter of clarity, the preceding two sentences do not affect either part y's obligations regarding confidential information under any other agreement between the parties. No modification of this agreement will be effective unless contained in writing and signed by an authorized representative of each party. Notwithstanding applicable law, electronic communications will not be deemed signed writings. Any additional orders for licenses hereunder shall be governed by the terms of this Agr eement. No term or condition contained in Licensee's purchase order or similar document will apply unless specifically agreed to by Ruckus i n writing, even if Ruckus has accepted the order set forth in such purchase order, and all such terms or conditions are otherwise hereby ex pressly rejected by Ruckus. In the event of a conflict between this agreement and any other applicable agreement, this agreement shall gover n. Accept this agreement? [yes/no]:

The KVM continues to extract the contents of the image. When the extraction process is complete, the QCOW2 file appears in the same directory as the .bin file.

FIGURE 29 The QCOW2 file appears in the same directory as the .bin file

toces	Name	Size	Modified
Search	🛅 Desktop		13:13
Recently Used	2 Documents		13:13
a numbersix	🔯 Downloads		13:21
Desktop	🍓 Music		13:13
File System	Pictures		13:47
285 GB Volume	🔁 Public		13:13
Documents	😰 Templates		13:13
Music	Videos		13:13
Pictures	examples.desktop	9.0 kB	12:55
Videos	vscg-3.1.1.0.442.qcow2	2.3 GB	15-06-25
Develoads	vscg-3.1.1.0.442.qcow2.bin	876.8 MB	13:21

NOTE

If the "uudecode: command not found" error appears during the extraction process, install the "sharutils" package on the KVM, and then try extracting the image again.

 Resize the vSZ disk image, if necessary. By default, the vSZ disk size is 50GB. If you want to allocate more disk space to the vSZ, run the qemu-img command. The complete syntax is as follows: **qemu-img resize {file name of the controller QCOW bin} +size**

Setting Up the vSZ

You can set up the vSZ using the Red Hat Virtual Machine Manager (also known as "virt-manager"). If you are installing the vSZ on a different hypervisor or virtual machine monitor, the procedure may be slightly different. Refer to the hypervisor documentation for more information.

1. Start the Virtual Machine Manager by clicking Applications > System Tools > Virtual Machine Manager. Or double-click the Virtual Machine Manager icon if it appears on the desktop. The Virtual Machine Manager interface appears.

FIGURE 30 The Virtual Machine Manager interface

😢 🗖 🔲 Virtual Machine Manager	
🔛 💭 Open 📄 🚺 🗸	
Name	
localhost (QEMU)	

2. In File, click Create New VM. Or click the New VM icon. The New VM screen appears

FIGURE 31 The New VM

😣 🗖 🗊 Virtual Machine Manager	
🔛 💭 Open 📄 🚺 👻 🔻	
Name 🛽 🗊 New VM	
Create a new virtual machine Step 1 of 5	
Enter your virtual machine details Name: Connection: localhost (QEMU/KVM)	
Choose how you would like to install the operating system	
Local install media (ISO image or CDROM)	
 Network Install (HTTP, FTP, or NFS) 	
 Network Boot (PXE) 	
 Import existing disk image 	
Cancel Back Forward	

- 3. Configure the options on the New VM (Step 1 of 4) screen.
 - a) In **Name**, type a name that you want to assign to the virtual machine.
 - b) In Choose how you would like to install the operating system, click Import existing disk image.

FIGURE 32 Type a name and select how you want to install the operating system

😸 亘 🗉 Virtual Machine Manager	
📫 💭 Open 📄 🚺 👻 👻	
Name 🛛 🗊 New VM	۵
Create a new virtual machine Step 1 of 4	
Enter your virtual machine details	
Name: vSZ-3-1-1	
Connection: localhost (QEMU/KVM)	
Choose how you would like to install the operating system	
 Local install media (ISO image or CDPOM) 	
Network Boot (PXF)	
 Import existing disk image 	
Cancel Back Forward	

4. Click Forward. The Locate Existing Storage dialog box appears.

5. Browse to the location of the vSZ QCOW2 image, select the image file, and then click Open. The **New VM (Step 2 of 4)** screen reappears and displays the storage path to the QCOW2 image file that you selected.

😣 🗉 Locate ex	kisting	storage			
Name		1.1.0.442 crow2			
Name:	vscg-3	. 1. 1.0.442.qcowz			
Save in folder:	•	numbersix		Crea	ate Folder
,					
Places		Name		Size	Modified
🔍 Search		🛅 Desktop			13:13
Recently Use	d	The Documents			13:13
📠 numbersix		🔯 Downloads			13:21
🔲 Desktop		Music			13:13
File System		Pictures			13:47
🖾 285 GB Volum	ne	🔁 Public			13:13
Documents		🕼 Templates			13:13
Music		III Videos			13:13
Pictures		🔝 examples.desktop		9.0 kB	12:55
🔳 Videos		📓 vscg-3.1.1.0.442.qcow2		2.3 GB	15-06-25
🔯 Downloads		vscg-3.1.1.0.442.qcow2.bin		876.8 MB	13:21
			C	ancel	Open
					open

FIGURE 33 Browse to the vSZ QCOW2 image

- 6. In the lower portion of the **New VM (Step 2 of 4)** screen, select the operating system type and version.
 - a) In **OS type**, select **Linux**.
 - b) In Version, select Generic 2.6.x kernel.

FIGURE 34 Select the operating system and version

U Virtual I	Machine Manager
Open 📃	
88 New	VM
	eate a new virtual machine p 2 of 4
Provide the	e existing storage path:
/home/	numbersix/vscg-3.1.1.0.442.qcow2 Browse
Choose an	operating system type and version
Choose an OS type:	operating system type and version
Choose an OS type: Version:	operating system type and version Linux ‡ Generic 2.6.x kernel ‡

7. Click Forward. The New VM (Step 3 of 4) screen appears.

- 8. Configure the memory and CPU settings of the virtual machine.
 - a) In **Memory (RAM)**, set to memory (in MB) that you want to allocate to the vSZ.
 - b) In **CPU**, set the number of CPUs that you want to allocate to the vSZ.

FIGURE 35 Configure the memory and CPU settings

😣 🖻 🗉 Virtual Machine Manager	
📫 💭 Open 📄 🚺 🗸	
Name 🛛 🗊 New VM	
Create a new virtual machine Step 3 of 4	
Choose Memory and CPU settings Memory (RAM): 1930 + MB Up to 3865 MB available on the host CPUs: 2 + Up to 4 available	
Cancel Back Forward	

9. Click **Forward**. The **New VM (Step 4 of 4)** screen appears and displays a summary of the settings you configured.

FIGURE 36 A summary of the settings you configured appears

😣 🗉 New VM
Create a new virtual machine Step 4 of 4
Ready to begin installation of vSZ-3-1-1 OS: Generic 2.6.x kernel Install: Import existing OS image Memory: 1930 MB CPUs: 2 Storage: 2.1 GB /home/numbersix/vscg-3.1.1.0.442.qcow2
Advanced options
Virtual network 'default' : NAT
Set a fixed MAC address
52:54:00:d0:6c:bc
Virt Type: kvm ‡
Architecture: x86_64 ‡
Firmware: Default 🌲
Cancel Back Finish

- 10. Verify that the settings you configured on the previous screens are correct. If you need to make changes to any of the settings, click **Back** until you reach the screen on which the setting appears, make the change, and then click Forward until you reach the **New VM (Step 4 of 4)** screen again.
- 11. Click **Finish** to install the vSZ on the virtual machine.
- 12. After you complete installing the vSZ on the virtual machine, decide how many interfaces you want the vSZ to use. The vSZ supports either a single interface or three interfaces. By default, a single interface exists after installation.
 - If you want the vSZ to use a single interface, you do not need to take action in this step. Continue to the next step.
 - If you want the vSZ to use three interfaces, you must create the two additional interfaces before the initial bootup of the vSZ. Once the vSZ has completed its initial bootup, you will no longer be able to change the number of interfaces.

If you want to add interfaces, you must do so before the initial bootup of the vSZ. After the initial bootup, you will no longer be able to change the number of interfaces.

	vSZ-3-1-1 Virtu	al Machine
-		
	Overview Performance Processor Memory Boot Options IDE Disk 1 NIC :d7:8f:0a Mouse Input Display VNC Sound: ich6 Serial 1 Video Cirrus Controller USB Controller pci	Virtual Disk Target device: IDE Disk 1 Source path: /home/numbersix/vscg-3.1.1.0.442.qcow2 Storage size: 2.19 GB Readonly: Shareable: Shareable: VAdvanced options Disk bus: IDE Serial number: Storage format: qcow2 Performance options IO Tuning Tip: 'source' refers to information seen from the host OS, while 'target' refers to information seen from the guest OS
	Controller IDE Redirected USB Add Hardware	Remove Cancel Apply

FIGURE 37 By default, a single interface exists

- 13. Power on the virtual machine. The vSZ performs its initial bootup.
- 14. When the **vSZ login** prompt appears, enter **admin**.

You have completed setting up the vSZ on a KVM hypervisor. You are now ready to start the vSZ Setup Wizard. See Using the Setup Wizard to Install vSZ for more information.

Installing the vSZ on Microsoft Azure

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		. 07

Introduction

You can install vSZ on Microsoft Azure using the procedure outlined.

NOTE

The minimum memory and CPU requirements have changed in this release. You may need to upgrade your infrastructure before upgrading. Please read carefully. This is the minimum requirement recommended. Refer to the tables in GUID-01F2862D-ABB3-4B66-9011-171D53EB555B in the Installation Preparation chapter.

Logging into Microsoft Azure

As the first step of installing vSZ on Microsoft Azure, you have to log into Microsoft Azure.

Click https://portal.azure.com to access the Microsoft Azure site.

The Azure portal appears as shown in the following image.

FIGURE 38 Portal Tab

Microsoft Azure				$\mathcal P$ Search resources, services and docs	×	₽>_	ŝ	0
=	Dashboard 🗠 +	New dashboard 🧷 Edit dasht	ooard 🗘 Share 🗸 Fullscreen 🗗 Clone 🔳 Delete					
+ New								
🔟 Dashboard	All resources All subscriptions		Azure getting started made easy!					
All resources		O Refresh	🔥 😌 🖕 Launch an app of your choice					
	Alon-vSZ-361-ip	Public IP address	on Azure in a few quick steps					
Resource groups	Alon-vSZ-361-nsg	Network security group	Create DevOps Project					
App Services	acc-srvr-bdc-1	Cloud service (classic)						
Function Apps	1 tdc-abe-simpc01	Virtual machine	Quickstart tutorials					
SOI databases	1 tdcabevsz	Virtual machine						
ten	3.6.1.0.215	Image	Windows Virtual Machines 12					
Azure Cosmos DB	Abe-vsz-e-35-02	Virtual machine (class	Provision Windows Server, SQL Server, SharePoint VMs					
Virtual machines	Abe-vsz-e-35-01	Virtual machine (class						
💠 Load balancers	abe-vsz-e-1k-01	Cloud service (classic)	Linux Virtual Machines 🛛					
Storago accounts	abe-server	Virtual machine (class	Provision Obuntu, Ked Hat, CentOs, SUSE, CoreOs VMs					
storage accounts	abe-server	Cloud service (classic)	Ann Service 2					
Virtual networks	aalon361	Storage account	Create Web Apps using .NET, Java, Node.js, Python, PHP					
Azure Active Directory	abe-server	Reserved IP address (
Monitor		See more	Functions Process events with a serverless code architecture					
🔺 Advisor								
	Service Health	Marketplace	SQL Database 🖾					
Security Center			Managed relational SQL Database as a Service					
Oost Management + Billi								
🍄 Help + support								
more services								

Creating a Resource Group

To create a resource group:

1. From the left pane of the **Microsoft Azure** page, click **Resource groups**. The **Resource groups** page appears with the list of existing resource groups as shown in the following image.

FIGURE 39 Resource Groups

Microsoft Azure		Search resources, services, and docs	× 🗘 >_ 🍪 😳 🕐 🗄
«			
+ Create a resource	Resource groups Ruckus Wireless, Inc.		
i = All services	+ Add Edit columns C Refresh		
+ FAVORITES	Subscriptions: Pay-As-You-Go		
🔲 Dashboard	Filter by name	All locations	V No grouping
All resources	>4 items vg NAME ↑↓	SUBSCRIPTION	LOCATION 👈
📦 Resource groups	(*) aaa	Pay-As-You-Go	East Asia
🔕 App Services	abe-server	Pay-As-You-Go	East Asia
	(in Abe-sim-3500531	Pay-As-You-Go	East Asia
Function Apps	abe-vsz-e-1k-01	Pay-As-You-Go	East Asia
🐱 SQL databases	abe-vsz-e-1k-02	Pay-As-You-Go	East Asia
🧟 Azure Cosmos DB	Abe-vsz-e-35-01	Pay-As-You-Go	East Asia
16stual machines	Abe-vsz-e-35-02	Pay-As-You-Go	East Asia
	acc-srvr-bdc-1	Pay-As-You-Go	East Asia
Load balancers	acc-srvr-bdc-2	Pay-As-You-Go	East Asia
Storage accounts	Alon-Resource	Pay-As-You-Go	East Asia
Virtual networks	auto-bdc-srvr-1	Pay-As-You-Go	East Asia
	auto-bdc-srvr-2	Pay-As-You-Go	East Asia
	bill-simpc-01	Pay-As-You-Go	East Asia
😁 Monitor	ill-simpc-02	Pay-As-You-Go	East Asia
🔷 Advisor	bill-simpc-03	Pay-As-You-Go	East Asia
Security Center	bill-vsz-e-36-1	Pay-As-You-Go	East Asia
	bill-vsz-e-36-2	Pay-As-You-Go	East Asia
Oost Management + B	Cacti-r34	Pay-As-You-Go	East Asia
Help + support	Cloud-shell-storage-centralindia	Pay-As-You-Go	Central India
🏮 Network security grou	Carl Contract Contrac	Pay-As-You-Go	East Asia
📖 Images 🗸	Sefault-SOL-JananFact	DausAraVoisGo	lanan Fart

2. Click the **Add +** button and enter the **Resource group name** as shown in the following image.

FIGURE 40 Adding Resource Group Name

Mie	crosoft Azure			
		Home > Resource groups > Resource group		
+	Create a resource	Resource groups « × Ruckus Wireless, Inc.	 Kesource group Create an empty resource group 	
≣	All services	➡ Add ■ Edit columns ···· M	More * Resource group name	
		Filter hv name	Enter resource group name	
— 🗙 I	AVORITES	ruce by namen	* Subscription	
	Dashboard	NAME 👈	Pay-As-You-Go	\sim
	All resources	🐑 aaa	* Resource group location	
		abe-server	East Asia	\sim
	Resource groups	(🕥 Abe-sim-3500531		
۲	App Services	abe-vsz-e-1k-01		
 	Function Apps	abe-vsz-e-1k-02		
2	SOL databases	Abe-vsz-e-35-01		
		Abe-vsz-e-35-02		
<i></i>	Azure Cosmos DB	acc-srvr-bdc-1		
<u></u>	Virtual machines	acc-srvr-bdc-2		
-	Load balancers	Alon-Resource		
_	Storago accounts	auto-bdc-srvr-1		
	Storage accounts	auto-bdc-srvr-2		
<>	Virtual networks	ill-simpc-01		
•	Azure Active Directory	ill-simpc-02		
<u>(</u>	Monitor	ill-simpc-03		
		bill-vsz-e-36-1		
-	Advisor	bill-vsz-e-36-2		
٢	Security Center	😭 cacti-r34		
0	Cost Management + B	cloud-shell-storage-centralindia		
1	Help + cupport	Default-Networking		
	heip + support	Default-SQL-JapanEast		
	Network security grou	Default-Storage-EastAsia	✓ Create	
1	Images 🔹			

3. Click **Create** and select the resource group from the list as shown in the following image.

You can view the list of related components of the selected resource group.

Microsoft Azure				${\cal P}$ Search resources, s	ervices, and docs	×Ц	ᡗ≻_ ☺ @) I nolan.ouyang RUCKUS WIRE
	Home > Resource groups > Nolan_5.0_beta1 Resource groups ≪ ★ ★ Ruckus Wireless, Inc.	Nolan_5.0_beta1						
i∃ All services	🕂 Add 📲 Edit columns 🛛 🚥 More		«	Add EE Edit columns 💼 Delete resource gro	oup 🖸 Refresh	→ Move Assign tags	:	
- * FAVORITES	Filter by name	(n) Overview		Subscription (change) Subscription Pay-As-You-Go be382294-71	n ID 8e9-4a56-9ba8-6a2e7	3 Failed,16 Succeeded		
🔲 Dashboard	NAME to	Activity log		Tags (change) Click here to add tags				
All resources	(cloud-shell-storage-centralindia	Access control (IAM)	L i			~		
📦 Resource groups	(Default-Networking	🛷 Tags		Filter by name	All types	~	All locations	~ ^
🔕 Ann Services	(Default-SQL-JapanEast	🗲 Events		40 items Show hidden types 🚯				
	Pefault-Storage-EastAsia			NAME 🖘	1	YPE 👈	LOCATION 👈	TAGS 🕆 ט
Function Apps	Default-Storage-EastUS	SETTINGS		3.6.0.0.510	I	mage	East Asia	. Mar
📓 SQL databases	Default-Storage-JapanWest	📣 Quickstart		5.0.0.249	I	mage	East Asia	. Mar
🧭 Azure Cosmos DB	Default-Storage-SoutheastAsia	 Resource costs 		5.0.0.505	I	mage	East Asia	de la companya de la comp
•	Default-Storage-WestUS	Deployments		5.0.0.524	I	mage	East Asia	AND STORES
Virtual machines	mms-eus	Policies		5.0.0.610	I	mage	East Asia	A MARS
🚸 Load balancers	mms-sea	:= Propertier		5.0.0.668	I	mage	East Asia	, M ²
Storage accounts	(Nolan_5.0_beta1			S-0-0-0-668-fresh_disk1_7258ef9979fe4ac	c98e471c8c2092 [Disk	East Asia	, 10 ¹²
(m) Matural anatomatica	san-vsz-nodel	Locks		5-0-0-668-fresh815	1	letwork interface	East Asia	AND STORES
Virtual networks	😭 scaling-aaa01	Automation script		5-0-0-668-fresh-ip	F	ublic IP address	East Asia	J.
Azure Active Directory	(🐑 scaling-sim01-G	MONITORING		5-0-0-668-fresh-nsg	1	letwork security group	East Asia	, det
Monitor	(🐑 scaling-sim02-W	Alartr		Solan-5-0-0-249_disk1_21abe2ee40984	1234be33450faa [Disk	East Asia	, de la
Advisor	scaling-sim03-R	Alerts		nolan-5-0-0-249403	1	letwork interface	East Asia	, dan
	(🕥 sz35	Metrics		Nolan-5-0-0-249-ip	F	ublic IP address	East Asia	1. All and the second s
Security Center	😭 tdc-abe-grafana	i Logs		Nolan-5-0-0-249-nsg	1	letwork security group	East Asia	1
Oost Management + B	tdc-abe-resource	Diagnostic settings		nolan50beta1	5	torage account	East Asia	1
Help + support	tdc-abe-simpc01	Log search		nolan50beta1diag479	5	torage account	East Asia	1
	tdc-abe-simpc03	Advisor recommendations		Nolan50beta2upgrade	١	/irtual machine	East Asia	Owner : Nolan
Network security grou	😭 tdc-bill-net 👻	•	-	── ── ── ── ── ── ── ── ── ── ── ── ──	i44db7ad6dd29b… f	liek	Fact Asia	ll'
M Imagor								

FIGURE 41 Resource Group Components

Creating a Storage Account and Container

To create a Microsoft Azure storage account, perform the steps outlined in this section.

1. From the left pane of the Microsoft Azure page, click Storage accounts. The Storage accounts screen appears.

FIGURE 42 Creating a storage account

Microsoft Azure			✓ Search resources, se	ervices, and docs	× L > 🕸 😳	⑦ 문 nolai
Create a resource	Home > Storage accounts Storage accounts Ruckus Wireless, Inc.					
i ⊇ All services	+ Add III Edit columns 🕐 Refresh 🛛 🔶 Assign ta	gs 📋 Delete				
	Subscriptions: Pay-As-You-Go	source aroups	~	All locations	V No arouping	
🗔 Dashboard	35 items					
All resources		TYPE †↓	KIND 👈	RESOURCE GROUP 1	LOCATION 👈	SUBSCRIPTION
📦 Resource groups	aalon361	Storage account	Storage	Alon-Resource	East Asia	Pay-As-You-Go
🔇 App Services	atest5820	Storage account	Storage	testRG435559	East Asia	Pay-As-You-Go
Eunction Apps	atest8542	Storage account	Storage	testRG634768	East Asia	Pay-As-You-Go
-	autobdc	Storage account (classic)		Default-Storage-EastAsia	East Asia	Pay-As-You-Go
SQL databases	autotestbdc	Storage account (classic)		Default-Storage-EastAsia	East Asia	Pay-As-You-Go
🬌 Azure Cosmos DB	csgbe38229478e9x4a56x9ba	Storage account	Storage	cloud-shell-storage-centralindia	Central India	Pay-As-You-Go
Virtual machines	dptest1258	Storage account	Storage	testRG634768	East Asia	Pay-As-You-Go
	dptest7772	Storage account	Storage	testRG435559	East Asia	Pay-As-You-Go
Load balancers	dtest2166	Storage account	Storage	testRG435559	East Asia	Pay-As-You-Go
🛁 Storage accounts	dtest4637	Storage account	Storage	testRG634768	East Asia	Pay-As-You-Go
Virtual networks	nolan50beta1	Storage account	Storage	Nolan_5.0_beta1	East Asia	Pay-As-You-Go
A town totics Directory	nolan50beta1diag479	Storage account	Storage	Nolan_5.0_beta1	East Asia	Pay-As-You-Go
Azure Active Directory	portalvhdsydgwbspt3xrg	Storage account (classic)		Default-Storage-EastAsia	East Asia	Pay-As-You-Go
Monitor	sanvsz	Storage account (classic)		vsz-sp	East Asia	Pay-As-You-Go
🔷 Advisor	tdcaberesourcegroup485	Storage account	Storage	tdcaberesourcegroup	East Asia	Pay-As-You-Go
a Security Center	tdcaberesourcegroup858	Storage account	Storage	tdcaberesourcegroup	East Asia	Pay-As-You-Go
Security Center	tdcabestorageaccount	Storage account	Storage	tdcaberesourcegroup	East Asia	Pay-As-You-Go
Ost Management + B	tdcbillresourcegroup3805	Storage account (classic)		tdcbillresourcegroup	East Asia	Pay-As-You-Go
Help + support	tdcbillstorageaccount	Storage account	Storage	tdcbillresourcegroup	East Asia	Pay-As-You-Go
Network security arou	tdcbillstorageold	Storage account (classic)		tdcbillresourcegroup	East Asia	Pay-As-You-Go
	The algorization and a second statement of the second	Storana account	Storana	tdealoriarerousegroup	Eart Aria	Dav-Ar-Vou-Go

- 2. Click **Add** and perform the following:
 - Enter a **Name** using lowercase alphanumeric characters.
 - In **Deployment model**, select Resource manager; it is new method to manage storage. If you select **Classic** mode, the vhd file allows to use only powershell to do upload.
 - In **Replication**, select Locally-redundant storage (LRS)
 - In **Resource** group, choose **Use Existing** and select the resource group from the drop-down.

FIGURE 43 Storage Account

Microsoft Azu	ıre						
		Home > Stor	age accounts > Create	storage a	ccount		
+ Create a resourc	e i	Storage a Ruckus Wirele	ccounts ess, Inc.	« 🖈	×	Create storage account	
i ≧ All services		🕇 Add 🔳	Edit columns	••• Mo	ore	The cost of your storage account de usage and the options you choose b	epends on the pelow.
— 🖈 Favorites ——		Filter by nan	1e			* Name ()	
🔲 Dashboard		NAME 🛝				.cor	e.windows.net
All resources		aalon	361		^	Deployment model ()	
🔊 n	_	atest5	820			Resource manager Classic	
Resource group:	S	atest8	542			Account kind ① Storage (general purpose v1)	~
Services		autob	dc			* · · · ·	
Function Apps		autote	estbdc			* Location East Asia	~
SOL databases		Csgbe	38229478e9x4a56x9ba			Replication A	
***		dptest	1258			Read-access geo-redundant stora	ge (RA 🗸
🬌 Azure Cosmos D)B	对 dptest	7772			Performance ()	
Virtual machines	s	dtest2	166			Standard Premium	
🚸 Load balancers		dtest4	637			* Secure transfer required 🚯	
		🗾 nolan	50beta1			Disabled Enabled	
storage account	5	🗾 nolan	50beta1diag479			* Subscription	
Virtual networks	5	portal	vhdsydgwbspt3xrg			Pay-As-You-Go	~
🚸 Azure Active Dir	rectory	sanvsz	2			* Resource group	
Monitor		🗾 tdcabe	eresourcegroup485				
		🗾 tdcabe	eresourcegroup858		11		
🌩 Advisor		🗾 tdcabe	estorageaccount			Virtual networks	
Security Center		tdcbill	resourcegroup3805			Disabled Enabled	
Oost Manageme	ent + Billing	🗾 tdcbill	storageaccount				
• • • • • • • • • • • • • • • • • • •		tdcbill	storageold			Data Lake Storage Gen2 (previ	ew)
Heip + support		📕 tdcglo	riastorageaccount			Disabled Enabled	
Network security	y groups	tdcyu	mitest				
👰 Images		vscg32	2storage		-		
		vsz2w	estus		•	Create Automation op	tions

3. Click Create.

4. Select the storage account from the list and select **Blobs** for uploading the vhd file as shown in the following image.



FIGURE 44 Blobs for Uploading

5. Click + Container, enter a Name and click OK as shown in the following image.



FIGURE 45 Adding Container

The new container is listed.

Uploading the vSZ Image to Microsoft Azure

You have to upload the vSZ image to Microsoft Azure. Follow these steps outlined in this section to upload the vSZ image to Microsoft Azure.

1. Select the newly created container from the list and click **Upload** as shown in the following image.

FIGURE 46 Uploading the vSZ image

Microsoft Azure			${\cal P}$ Search resources, services, and docs	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	305	
	Home > Storage accounts > nolan50beta1 - vhdcontainer Container					× :
i Ξ All services		🕂 Upload 🖔 Refresh 🏛 Delete 🦇 Acquire lease 🐗 Break lease 🦷	View snapshots 🗇 Create snapshot			
+ FAVORITES	Cverview	Location: vhdcontainer				
Dashboard	🝰 Access Control (IAM)	Search blobs by prefix (case-sensitive)			Show dele	ted blobs
All resources	SETTINGS	NAME	MODIFIED	BLOB TYPE	SIZE	LEASE STATE
Resource groups	Access policy	vscg-3.6.0.0.510.vhd	3/22/2018, 12:23:56 AM	Page blob	40 GiB	Available
🔇 App Services	Properties	vscg-3.6.1.0.227.vhd	6/10/2018, 9:21:30 PM	Page blob	40 GiB	Available
Function Apps	 Metadata 	sscg-5.0.0.429.vhd	3/6/2018, 9:05:20 AM	Page blob	40 GiB	Available
👼 SQL databases		e vscg-5.0.0.0505.vhd	3/24/2018, 7:10:19 PM	Page blob	40 GiB	Available
🧟 Azure Cosmos DB		scg-5.0.0.0.524.vhd	4/1/2018, 12:20:11 AM	Page blob	40 GiB	Available
Virtual machines		scg-5.0.0.0.610.vhd	5/7/2018, 7:51:21 PM	Page blob	40 GiB	Available
A Load balancers		scg-5.0.0.0.668.vhd	6/1/2018, 2:41:48 PM	Page blob	40 GiB	Available
Storage accounts						
🐡 Virtual networks						
Azure Active Directory						
🕒 Monitor						
🍨 Advisor						
Security Center						
Oost Management + Billing						
Help + support						
Network security groups						
🐖 Images						

2. From the right pane, click the folder to choose the .vhd file from the local PC and click **Upload**.

Creating a Virtual Network

Follow these steps to create a virtual network.

1. From the left pane of the **Microsoft Azure** page, click **Virtual Networks** as shown in the following image.

FIGURE 47 Creating a virtual network

Microsoft Azure			${\cal P}$ Search resources, services,	and docs × Q >_	🕸 🙂 🔿 🞼	
	Home > Virtual networks Virtual networks Ruckus Wireless, Inc.					* ×
E All services	🕂 Add 📰 Edit columns 🕐 Refresh 🛛 🔷 Assign tags					
	Subscriptions: Pay-As-You-Go					
😐 Dashboard	Filter by name	All resource groups	✓ All locations	× 1	lo grouping	\sim
All resources	o items NAME ↑↓		RESOURCE GROUP	LOCATION to	SUBSCRIPTION 10	
🗊 Resource groups	C		testRG435559	East Asia	Pay-As-You-Go	
🙆 Ann Services	- ··· > Dtitest		testRG634768	East Asia	Pay-As-You-Go	
<	↓ tdc-abe-vnet		tdcaberesourcegroup	East Asia	Pay-As-You-Go	
Function Apps	tdc-alon-net		Alon-Resource	East Asia	Pay-As-You-Go	
📓 SQL databases	tdc-nolan-net		Nolan_5.0_beta1	East Asia	Pay-As-You-Go	
🤵 Azure Cosmos DB	vsz-net		vsz-sp	East Asia	Pay-As-You-Go	
Virtual machines						
l oad balancers						
Storage accounts						
↔ Virtual networks						
Azure Active Directory						
Monitor						
🔷 Advisor						
Security Center						
Ost Management + Billing						
Help + support						
Network security groups						
💷 Images						

- 2. Click **Add** and update the following:
 - **Name**: enter a name for the network
 - Address space: enter the network address
 - **Resource group**: choose the Use existing option and select the existing resource group from the drop-down.
 - Address range: enter the address range.

FIGURE 48 Virtual Network Details screen

Microsoft Azure		
*	Home > Virtual networks > Create virtual network	
+ Create a resource	Virtual networks « 🖈 🗙 Ruckus Wireless. Inc.	Create virtual network 🛛 🗖 🗙
i≣ All services	+ Add = Edit columns ···· More	* Name
		Ivallie
- 🛧 Favorites	Filter by name	* Address space 6
🛄 Dashboard	NAME 🔍	10.1.0.0/16
All resources	 ↔ Dtltest 	10.1.0.0 - 10.1.255.255 (65536 addresses) * Subscription
····	< ↔ > Dtltest	Pay-As-You-Go 🗸
Resource groups	↔ tdc-abe-vnet	* Resource group
🔇 App Services	< ↔ > tdc-alon-net	Create new Use existing
Function Apps	<↔ tdc-nolan-net	
👼 SOI databases	<↔ vsz-net	* Location
		East Asia 🗸 🗸
S Azure Cosmos DB		Subnet
Virtual machines		default
🚸 Load balancers		* Address range
		10.1.0.0/24
		10.1.0.0 - 10.1.0.255 (256 addresses)
··· Virtual networks		Basic Standard
Azure Active Directory		Service endpoints 🕦
Monitor		Disabled Enabled
Advicar		
AUVISOI		
Security Center		
Oost Management + Billing		
Help + support		
Network security groups		
👰 Images		 1
		Create Automation options

3. Click **Create**, you have created a network.

Creating Network Security Groups

Network security group is the Azure firewall rule. You can have different firewall rules for each vSZ instance.

To create a network security group:

1. From the left pane of the **Microsoft Azure** page, click **Network security groups**. The **Network security groups** page appears with the list of existing resource groups as shown in the following image.

FIGURE 49 Network security Groups

Microsoft Azure			<i>P</i> Search re	esources, services, and docs	< L >_ 🕸 😳 🛈 🕀 📲
Create a resource	Home > Network security groups Network security groups Ruckus Wireless, Inc.				
E All services	+ Add ■■ Edit columns 🕐 Refresh 🛛 ♦ Assign tags				
- 🖈 FAVORITES	Subscriptions: Pay-As-You-Go				
🔲 Dashboard	Filter by name	All resource groups	✓ All	ll locations	✓ No grouping
All resources	NAME ↑↓		RESOURCE GROUP	LOCATION 👈	SUBSCRIPTION
Resource groups	5-0-0-668-fresh-nsg		Nolan_5.0_beta1	East Asia	Pay-As-You-Go
S App Services	Alon-vSZ-361-nsg		Alon-Resource	East Asia	Pay-As-You-Go
	Nolan-5-0-0-249-nsg		Nolan_5.0_beta1	East Asia	Pay-As-You-Go
Function Apps	Nolan50beta2upgradeNode2-nsg		Nolan_5.0_beta1	East Asia	Pay-As-You-Go
📓 SQL databases	Nolan50beta2upgrade-nsg		Nolan_5.0_beta1	East Asia	Pay-As-You-Go
🬌 Azure Cosmos DB	nolan-beta2-524-nsg		Nolan_5.0_beta1	East Asia	Pay-As-You-Go
Virtual machines	NolanBeta2-nsg		Nolan_5.0_beta1	East Asia	Pay-As-You-Go
<u> </u>	nolan-beta-refresh-nsg		Nolan_5.0_beta1	East Asia	Pay-As-You-Go
Load balancers	tdc-abe-simpc-01-nsg		tdcaberesourcegroup	East Asia	Pay-As-You-Go
Storage accounts	tdcabevszNSG		tdcaberesourcegroup	East Asia	Pay-As-You-Go
Virtual networks	🗌 🦁 tdc-nolan-nsg		Nolan_5.0_beta1	East Asia	Pay-As-You-Go
Azure Active Directory					
Monitor					
🍨 Advisor					
Security Center					
Oost Management + Billing					
Help + support					
Network security groups					
👰 Images					

- 2. Click **Add** and update the following:
 - **Name**: enter a name for the network
 - **Resource group**: choose the Use existing option and select the existing resource group from the drop-down.

FIGURE 50 Adding Resource Group Name

Microsoft Azure	
	Home > Network security groups > Create network security group
+ Create a resource	Network security groups « * × Create network security group = > Ruckus Wireless, Inc.
i≡ All services	Add EE Edit columns ···· More * Name
- 🖈 FAVORITES	Filter by name
🔲 Dashboard	NAME ↑↓ Pay-As-You-Go
All resources	5-0-0-668-fresh-nsg
📦 Resource groups	Alon-vSZ-361-nsg
	Nolan-5-0-0-249-nsg
🤇 App Services	Nolan50beta2upgradeNode2-nsg * Location
Function Apps	♥ Nolan50beta2upgrade-nsg East Asia ✓
👼 SQL databases	nolan-beta2-524-nsg
🥒 Azure Cosmos DB	NolanBeta2-nsg
Virtual machines	tdc-abe-simpc-01-nsg
🚸 Load balancers	tdcabevszNSG
Storage accounts	tdc-nolan-nsg
Monitor	
Advisor	
Security Center	
🧿 Cost Management + Billin	
Provide the support Help + support	
Network security groups	
📴 Images	
	Create Automation options

3. Click Create the Network security groups page appears.

 Select the network security group from the list and click **Inbound security rules** as shown in the following image. The existing rules are listed.

FIGURE 51 Inbound security rules


5. Click **Add** + to create a new rule as shown in the following image.

The existing rules are listed.

FIGURE 52 Creating security rules

Microsoft Azure				\wp Search resources, service	es, and docs	хĹ) >_ 🎕 😳) 🧿 🖫		
Create a resource	Home > Network security groups > Nolan50beta2upg Network security groups	gradeNode2-nsg - Inbound security rules Nolan50beta2upgradeNode Network security group	e2-nsg - Inbound s	ecurity rules						*
i ≧ All services	🕂 Add 📑 Edit columns 🛛 •••• More		🕂 📥 Add 🕸 Defa	ult rules						
+ FAVORITES	Filter by name	Overview	PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION	
🖪 Dashboard	NAME 14	Activity log	1000	🛕 default-allow-ssh	22	TCP	Any	Any	Allow	
All resources	5-0-0-668-fresh-nsg	Access control (IAM)	1010	Port_21_8443_443	21,8443,443	Any	Any	Any	Allow	
📦 Resource groups	Alon-vSZ-361-nsg	🛷 Tags	1020	Port_8080	8080	Any	59.124.228.54/32	Any	Allow	
S App Services	Nolan-5-0-0-0-249-nsg	X Diagnose and solve problems	1030	TDC_all	1024-65535	Any	59.124.251.135/32	Any	Allow	
Eurotion Apps	Nolan50beta2upgrade-nsg	SETTINGS	65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow	
	nolan-beta2-524-nsg	🐣 Inbound security rules	65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow	
SQL Galabases	関 NolanBeta2-nsg	Outbound security rules	65500	DenyAllInBound	Any	Any	Any	Any	Oeny	
Azure Cosmos DB	nolan-beta-refresh-nsg	Network interfaces								
Virtual machines	tdc-abe-simpc-01-nsg	(i) Subnatz								
💠 Load balancers	tdcabevszNSG									
Storage accounts	tdc-nolan-nsg									
••• Virtual networks		Automation script								
Azure Active Directory		MONITORING								
Monitor		Diannostic settings								
🔷 Advisor										
Security Center		SUPPORT + TROUBLESHOOTING								
• • • • • • • • •		Effective security rules								
Cost Management + Billing		New support request								
Help + support										
🏮 Network security groups										
👰 Images										

- 6. From the **Add inbound security rule** page update the following fields:
 - **Source**: select the source port.
 - Source port ranges: enter the source port range.
 - Destination: select the destination port.
 - Destination port ranges: select the destination port ranges.
 - Protocol: select one of the options—Any, TCP or UDP.
 - Action: select Allow or Deny.
 - Priority: enter the rule priority number.
 - Name: enter a name for the rule.
 - Description: enter a short description about the rule.

FIGURE 53 Adding Inbound Security Rule



7. Click **Add**, the new rule is added to the existing rule list as shown in the following image.

The existing rules are listed.

FIGURE 54 Inbound Security Rule List



Creating a vSZ Image on Microsoft Azure

Follow these steps to create a vSZ image on Microsoft Azure:

1. **NOTE**

Help + support
 Network security aroups

ssh is allowed by default, so add port 443 and 8443 for AP connection and Web access.

From the Microsoft Azure page, click Images.

FIGURE 55 Creating an image

Microsoft Azure			و م	Search resources, services, and d	na ×	₽ >_ 🕸 😳 Ø	Ð	
Create a resource	Images Ruckus Wireless, Inc.							* >
∃ All services	+ Add III Edit columns 🕐 Refresh 🛛 🗣 Assign tags							
* FAVORITES	Subscriptions: Pay-As-You-Go							
Dashboard	Filter by name 8 items	All resource groups		✓ All locations		✓ No grouping		~
All resources	NAME 14	SOURCE VIRTUAL MAC	OS TYPE	RESOURCE GROUP 🔌	LOCATION to	ZONE RESILIENT	SUBSCRIPTION	
📦 Resource groups	3.6.0.0.510		Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
S App Services	3.6.0.0.235		Linux	Alon-Resource	East Asia	No	Pay-As-You-Go	
4	3.6.1.0.222		Linux	Alon-Resource	East Asia	No	Pay-As-You-Go	
Function Apps	5.0.0.249	•	Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
SQL databases	5.0.0.505		Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
🥒 Azure Cosmos DB	5.0.0.524	-	Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
Virtual machines	5.0.0.610			Nolan_5.0_beta1	East Asia		Pay-As-You-Go	
🚸 Load balancers	5.0.0.0668			Nolan_5.0_beta1	East Asia		Pay-As-You-Go	
Storage accounts								
··· Virtual networks								
🔶 Azure Active Directory								
Monitor								
🔶 Advisor								
Security Center								
Cost Management + Billing								

2. Click **Add**, the Create image page appears as shown in the following image.

M	icrosoft Azure			arphi Search resources, services, and docs	×
		Home > Images > Create image			
+	Create a resource	Images « Ruckus Wireless, Inc.	* X	Create image	
	All services	Add Efficiency	Vore		
			-	^ Name	
-*	FAVORITES	Filter by name			
		NAME		* Subscription	_
	Dashboard			Pay-As-You-Go	~
	All resources	S.6.0.0.510		* Resource group	
(**	-	3.6.0.0.235		Create new Use existing	_
	Resource groups	3.6.1.0.222		The value should not be empty.	
8	App Services	5.0.0.249		* Location	
4	Eurotion Appr	5.0.0.505		East Asia	\sim
	runction Apps	E 5000524			
2	SQL databases	5.0.0.0.24		On Off	
16		5.0.0.0.610			
~	Azure Cosilios DB	5.0.0.0.668 5		OS disk	
	Virtual machines			Windows Linux	
	Load balancer				
				Storage blob	
	Storage accounts			1 Browse	
	Virtual networks			* Account type 🕦	
				Standard HDD	\sim
-	Azure Active Directory			* Host caching 0	
@	Monitor			Read/write	\sim
	- monitor				
-	Advisor			Data disks	
0	Security Center				_
				+ Add data disk	
0	Cost Management + Billing				
2	Help + support				
	Network security groups				
	Images				
				Create Automation options	

FIGURE 56 Create an Image from VHD

- 3. Update the following fields:
 - **Name**: enter a name for the image.
 - **Resource group**: choose Use existing and select the option from the drop-down.
 - **OS type**: choose Linux.
 - Storage blob: click Browse and select the file.

4. Click **Create**, the **Storage accounts** page appears as shown in the following image.

FIGURE 57 Storage Account Li	st
------------------------------	----

Microsoft Azure		$\mathcal P$ Search resources, services, and docs	×
Create a resource	Home > Images > Create image > Storage accounts Storage accounts		, ,
i ≡ All services	+ Storage account 🕐 Refresh		
* FAVORITES	P Fearch storage accounts		
🔟 Dashboard	NAME	ТҮРЕ	RESOURCE GROUP
III resources	aalon361	Standard-LRS	Alon-Resource
Resource groups	atest5820	Standard-LRS	testrg435559
🔦 Ann Caning	atest8542	Standard-LRS	testrg634768
S App services	dptest1258	Premium-LRS	testrg634768
Function Apps	dptest7772	Premium-LRS	testrg435559
🧧 SQL databases	dtest2166	Standard-LRS	testrg435559
🥒 Azure Cosmos DB	dtest4637	Standard-LRS	testrg634768
Virtual machines	nolan50beta1	Standard-LRS	Nolan_5.0_beta1
🚸 Load balancers	nolan50beta1diag479	Standard-LRS	Nolan_5.0_beta1
Storage accounts	tdcaberesourcegroup485	Premium-LRS	tdcaberesourcegroup
Virtual networks	tdcaberesourcegroup858	Premium-LRS	tdcaberesourcegroup
Azure Active Directory	tdcabestorageaccount	Standard-LRS	tdcaberesourcegroup
A Maniter	tdcbillstorageaccount	Standard-LRS	tdcbillresourcegroup
Monikoi	tdcgloriastorageaccount	Standard-LRS	tdcgloriaresoucegroup
Advisor			
Security Center			
Ocst Management + Billing			
Help + support			
Network security groups			
M Imager			

5. Select the Storage account from the list, the Containers page appears as shown in the following image.

FIGURE 58 Select the Container

Microsoft Azure			× L > 🕸 😳 Ø	₽.
*	Home > Images > Create image > Storage accounts	> Containers		
Create a resource	Storage accounts « ×	Containers nolan50beta1		×
i∃ All services	+ Storage account 💍 Refresh	➡ Container ひ Refresh		
+ FAVORITES	${\cal P}$ Search storage accounts	P search containers by prefix		
🔲 Dashboard	NAME	NAME	LAST MODIFIED	PUBLIC ACCE LEASE STATE
All resources	aalon361	vhdcontainer	3/1/2018, 10:21:21 AM	Private Available
📦 Resource groups	atest5820			
🔕 App Services	destest8542			
Function Apps	dptest7772			
sQL databases	dtest2166			
🥖 Azure Cosmos DB	dtest4637			
Virtual machines	nolan50beta1			
🚸 Load balancers	nolan50beta1diag479			
Storage accounts	tdcaberesourcegroup485			
💮 Virtual networks	tdcaberesourcegroup858			
Azure Active Directory	tdcabestorageaccount			
Monitor	tdcaloriastorageaccount			
🏟 Advisor				
Security Center				
Oost Management + Billing				
Help + support				
🏮 Network security groups				
👰 Images				

6. Select the Container from the list, the images in the container are listed as shown in the following image.

Microsoft Azure			${\cal P}$ Search resources, services, and docs	× Q >	- 🅸 😳 🧿	Ę	
Create a resource	Home > Images > Create image > Storage vhdcontainer Container						
; Ξ All services	₩ Upload U Refresh						
- 🖈 FAVORITES	Location: vhdcontainer						
🖪 Dashboard	Search blobs by prefix (c Show delete	d blobs					
All resources	NAME		MODIFIED	BLOB TYPE	SIZE	LEASE STATE	
📦 Resource groups	vscg-3.6.0.0.510.vhd		3/22/2018, 12:23:56 AM	Page blob	40 GiB	Available	
🔕 App Services	vscg-3.6.1.0.227.vhd		6/10/2018, 9:21:30 PM	Page blob	40 GiB	Available	
Function Apps	vscg-5.0.0.0.429.vhd		3/6/2018, 9:05:20 AM	Page blob	40 GiB	Available	
📓 SQL databases	📄 vscg-5.0.0.0.505.vhd		3/24/2018, 7:10:19 PM	Page blob	40 GiB	Available	
🥒 Azure Cosmos DB	scg-5.0.0.0.524.vhd		4/1/2018, 12:20:11 AM	Page blob	40 GiB	Available	
Virtual machines	scg-5.0.0.0.610.vhd		5/7/2018, 7:51:21 PM	Page blob	40 GiB	Available	
	scg-5.0.0.0.668.vhd		6/1/2018, 2:41:48 PM	Page blob	40 GiB	Available	
V Load balancers							
Storage accounts							
Virtual networks							
Azure Active Directory							
Monitor							
🔷 Advisor							
Security Center							
Ost Management + Billing							
Help + support							
Network security groups							
👰 Images	Select						

FIGURE 59 Images in the Container

7. Select the image file from the list and click **Select**. The selected image is listed in the Images page as shown in the following image.

FIGURE 60 Images Page

Microsoft Azure			<i>ک</i> ر	Search resources, services, and de	oos X	₽ ≻_ ‡ 😳 Ø	R	
Create a resource	Home > Images Images Ruckus Wireless, Inc.							*
i≡ All services	🕂 Add 🛛 🏭 Edit columns 💍 Refresh 🛛 🔶 Assign tags							
	Subscriptions: Pay-As-You-Go	All		All leveline		No province		
Dashboard	Pader by nume 8 items	Airresource groups		All locations		 We grouping 		~
All resources	NAME 14	SOURCE VIRTUAL MAC	OS TYPE	RESOURCE GROUP	LOCATION 👈	ZONE RESILIENT	SUBSCRIPTION	
📦 Resource groups	3.6.0.0.510		Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
🔇 App Services	3.6.0.0.235	-	Linux	Alon-Resource	East Asia	No	Pay-As-You-Go	
Function Apps	3.6.1.0.222		Linux	Alon-Resource	East Asia	No	Pay-As-You-Go	
	5.0.0.249		Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
SQL databases	5.0.0.505	-	Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
🬌 Azure Cosmos DB	5.0.0.0.524	•	Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
Virtual machines	5.0.0.0.610	-	Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
🚸 Load balancers	5.0.0.0.668	•	Linux	Nolan_5.0_beta1	East Asia	No	Pay-As-You-Go	
Storage accounts								
Virtual networks								
Azure Active Directory								
\ominus Monitor								
🔶 Advisor								
Security Center								
O Cost Management + Billing								
Help + support								
Network security groups								
🐖 Images								

8. Select the image and click **Create VM** as shown in the following image

FIGURE 61 Create VM

Microsoft Azure							${\cal P}$ Search resources, services, and docs	× Q >_ 🐯	0 🖓	
«			— FOOD (10)							
Create a resource	Images Ruckus Wireless, Inc.	× * ^	5.0.0.0.610 Image							* '
∃ All services	🕂 Add 📑 Edit columns	••• More		«	+ Create VM	💼 Deleti	e			
	Filter by name		👰 Overview		NAME 5.0.0.610					
🗔 Dashboard	NAME 🕆		Activity log		SOURCEVENTU					
III resources	3.6.0.0.510		Access control (IAM)		-	C MACHINE				
Resource groups	Sec. 0.0.235		🛷 Tags		OS DISK					
🙆 Ann Senvices	3.6.1.0.222		SETTINGS		OS TYPE		SOURCE BLOB URI		ACCOUNT TYPE	CACHING
 Applications 	5.0.0.0.249				Linux		https://nolan50beta1.blob.core.windows.net/vhdcontainer/vscg-5.	0.0.0.610.vhd	Standard HDD	Read/write
• Function Apps	5.0.0.524				DATA DISKS					
SQL databases	5.0.0.610		Automation script		This image does	n't contain a	any data disks.			
🤵 Azure Cosmos DB	5.0.0.0.668		SUPPORT + TROUBLESHOOTING		RESOURCE GRO	UP				
Virtual machines			New support request		Notan_5.0_Detas					
🚸 Load balancers					East Asia					
Storage accounts					ZONE RESILIENO	SY .				
··· Virtual networks					Disabled					
Azure Active Directory					Pay-As-You-Go					
Onitor					RESOURCE ID					
🔷 Advisor					/subscriptions	/be382294-1	78e9-4a56-9ba8-6a2e775646e4/resourceGroups/Nolan_5.0_beta1/pro	oviders/Microsoft.Compute/image	es/5.0.0.0.610	
Security Center										
Oost Management + Billing										
🖀 Help + support										
Network security groups										
👰 Images										

- 9. From the **Create virtual machine** page select the **Basics** tab and update the following:
 - Name: enter a name for the virtual machine.
 - VM disk type: select HDD form the drop-down as disk type.
 - **User name**: enter a username for the virtual machine.
 - **Authentication type**: choose the preferred authentication type.
 - **Password**: enter the password.
 - **Confirm password**: re-enter the password.
 - **Resource group**: choose Use existing and select the resource group from the drop-down.

FIGURE 62 Basics Information

Microsoft Azure		
Create a resource	Home > Images > 5.0.0.0.668 > Create virtual machine > Basics Create virtual machine X Basics	□ ×
i∃ All services	1 Basics >	
- 🛧 FAVORITES	VM disk type 🔀	
📴 Dashboard	2 Size >	\sim
HI resources	Choose virtual machine size * Username]
🕅 Resource groups	2 Settings > * Authentication type]
🔇 App Services	Configure optional features SSH public key Password	
Function Apps	* SSH public key 🚯	
🧕 SQL databases	4 5.0.0.0.668	
😹 Azure Cosmos DB	Subscription	
Virtual machines	Pay-As-You-Go	~
💠 Load balancers	Create new Use existing	
Storage accounts	* Losstian	
↔ Virtual networks	East Asia	\sim
Azure Active Directory		
🕒 Monitor		
🏟 Advisor		
Security Center		
Oost Management + Billing		
Help + support		
🏮 Network security groups		
🕎 Images	ОК	

10. Click **OK**, the Settings tab page appears as shown in the following image.

FIGURE 63 Settings Tab

Microsoft Azure			
	Home > Images > 5.0.0.0.668 > Create	virtual machin	ne > Settings
+ Create a resource	Create virtual machine	×	Settings 🗖 🗙
E All services	1 Basics Done	~	High availability Availability zone (
 Dashboard All resources 	2 Size Done	~	None V No availability zones are available for the location you have selected. To view locations that support availability zones, go to aka.ms/zonedregions
Resource groups	3 Settings Configure optional features	>	* Availability set 0 > None
 App Services Function Apps 	4 Summary 5.0.0.0668	>	Storage Use managed disks () No Yes
SQL databases	510101000		Network
Azure Cosmos DB Virtual machines			* Virtual network (new) bill-simpc-03-vnet
Load balancers			* Subnet () default (10.1.0.0/24)
Storage accounts			* Public IP address ① > (new) test-ip
 Virtual networks Azure Active Directory 			Network Security Group 🕤
😁 Monitor			* Select public inbound ports ()
Advisor			0 selected
Security Center			Extensions
Oost Management + Billing			Extensions () > No extensions
Help + support			Auto-shutdown
Network security groups			Enable auto-shutdown 🚯 🗸
Images			ОК

Installing the vSZ on Microsoft Azure

Creating a vSZ Image on Microsoft Azure

11. Select the Network and security group information and click **OK**. The Summary page appears as shown in the following image.

М	icrosoft Azure						${\cal P}$ Search resources, s
+	Create a resource	Home > Create	Images > 5.0.0.0.668 > Cre virtual machine	eate virtual machi	ne > Summary Summary		□ ×
	All services	1	Rasics		i Validation passed		
-*	FAVORITES	1	Done	`	Basics		
	Dashboard	2	Size	~	Subscription Resource group	Pay-As-You-Go bill-simpc-03	
	All resources	2	Done		Location	East Asia	
(*)	Resource groups	С	Settings		Settings Computer name	test	
٢	App Services	5	Done		Disk type Username	SSD nolanouyangruckus	
4>	Function Apps	Л	Summarv		Size Managed	Standard B1s (1 vcpus, 1 GB memory) Yes	
1	SQL databases	4	5.0.0.0.668	/	Private image Virtual network	0.0.0.0008 (new) bill-simpc-03-vnet (new) default (10.1.0.0/24)	
چ	Azure Cosmos DB				Public IP address Network security group (firewall)	(new) test-ip (new) test-nso	
	Virtual machines				Availability set Guest OS diagnostics	None Disabled	
.	Load balancers				Boot diagnostics Diagnostics storage account	Enabled nolan50beta1diag479	
	Storage accounts				Auto-shutdown	Off	
	Virtual networks						
	Azure Active Directory						
0	Monitor						
4	Advisor						
Ó	Security Center						
3	Cost Management + Billing						
2	Help + support						
	Network security groups						
1	Images				OK Download tem	plate and parameters	

FIGURE 64 Summary

Updating the Disk Size According to Resource Plan

Follow these steps to update the disk size according to the resource plan:

1. From the Virtual Machines page, select the Virtual Machine and click Stop ass shown in the following image.

FIGURE 65 Stopping the Virtual Machine

Microsoft Azure			$\mathcal P$ Search resources, s	ervices, and docs			>_ ₽ ₽		
«	Home > Virtual machines	Home > Virtual machines							
+ Create a resource	Virtual machines								
i≡ All services	ARRIS Group, Inc.	an a Anne a Later			💼 parta 💝 parta				
★ FAVORITES	T Add G Reservations == E	ait columns 🔾 ketresn 🛡 Ass	ign tags 🕨 Start 🥆	Restart Stop	Delete 💝 Services				
🖪 Dashboard	Subscriptions: All 2 selected - Don't s	ee a subscription? Open Directory + Subscr	iption settings						
All resources	Filter by name	All subscriptions V	All resource groups	✓ All types	✓ All	I locations V	.ll tags		
Resource groups	1 of 22 items selected								
ADD Services	NAME 🖘	TYPE 🕥	STATUS	RESOURCE GRO 🛝	LOCATION N	INTENANCE SUBSCRIPTION	PUBLIC IP ADD		
Function Apps	✓ 👰 5-1-upgrade	Virtual machine	Stopped (deallocated)	tdc-nolan-resource	East Asia -	Pay-As-You-Go	- A		
SOI databases	5-1-upgrade-node2	Virtual machine	Stopped (deallocated)	tdc-nolan-resource	East Asia -	Pay-As-You-Go	- A		
Azure Cosmos DB	auto-bdc-srvr-1	Virtual machine (cla	Running	auto-bdc-srvr-1	East Asia -	Pay-As-You-Go	- R Not supported		
Virtual machines	auto-bdc-srvr-2	Virtual machine (cla	Running	auto-bdc-srvr-2	East Asia -	Pay-As-You-Go	- R Not supported		
Load balancers	bill-simpc-01	Virtual machine (cla	Stopped (deallocated)	bill-simpc-01	East Asia -	Pay-As-You-Go	- R Not supported		
	bill-simpc-02	Virtual machine (cla	Stopped (deallocated)	bill-simpc-02	East Asia -	Pay-As-You-Go	- R Not supported		
	bill-simpc-03	Virtual machine (cla	Stopped (deallocated)	bill-simpc-03	East Asia -	Pay-As-You-Go	- R Not supported		
	riley-simpc-01	Virtual machine	Stopped (deallocated)	riley-simpc	East Asia -	Pay-As-You-Go	- A		
	riley-simpc-02	Virtual machine	Stopped (deallocated)	riley-simpc	East Asia -	Pay-As-You-Go	- A		
	riley-simpc-03	Virtual machine	Stopped (deallocated)	riley-simpc	East Asia -	Pay-As-You-Go	- A		
Advisor	scaling-aaa01	Virtual machine (cla	Running	scaling-aaa01	East Asia -	Pay-As-You-Go	- R Not supported		
 Security Center 			-	-		· · · · · ·			

2. From the Settings area, select Disks and select the Virtual Machine as shown in the following image.

FIGURE 66 Disk Settings



3. From the left pane select **Configuration**, enter the disk **Size (GB)** and click **Save** as shown in the following image.

Microsoft Azure		P Search resources, services, and docs
«	Home > Virtual machines > 5-1-upgrade	-node2 - Disks > 5-1-upgrade-node2_disk1_67061c69ab9942aebdd3ed9a7c6105d5 - Configuration
+ Create a resource	5-1-upgrade-node2_disk:	1_67061c69ab9942aebdd3ed9a7c6105d5 - Configuration
i≡ All services	Disk	
- 🛧 FAVORITES	, Search (Ctrl+/)	
🖪 Dashboard	😂 Overview	* Account type 0 Premium SSD ✓
All resources	Activity log	Size (GR)
📦 Resource groups	Access control (IAM)	300 🗸
🔇 App Services	🕐 Tags	
Function Apps	Settings	ESTIMATED PERFORMANCE ()
👼 SQL databases	🚔 Configuration	IUPS limit 2300
🌌 Azure Cosmos DB	🖳 Disk Export	n noograpot mint (mo) aj zoo
Virtual machines	Locks	
🚸 Load balancers	Automation script	
Storage accounts	Support + troubleshooting	
↔ Virtual networks	New support request	
Azure Active Directory		
😬 Monitor		
🔷 Advisor		
🏮 Security Center		
Ocst Management + Billing		
Provide the support Provide the support Provide the support of the		
👰 Images		

FIGURE 67 Disk Size

4. From the Virtual Machines page, select the Virtual Machine and click **Start**.

FIGURE 68 Starting the Virtual Machine

Microsoft Azure			$\mathcal P$ Search resources, se	ervices, and docs			Q ²
«	Home > Virtual machines						
+ Create a resource	Virtual machines						
i≡ All services	+ Add O Reservations	dit columns 👌 Refresh 🛛 🔶 Ass	ion taos 🕨 Start 🤆	Restart Stop	💼 Delete 🛛 🚝 Services		
+ FAVORITES	Subscriptions: All 2 selected Depit se	a a subscription? Open Directory - Subscr	inting settings				
🛄 Dashboard	Subscriptions: All 2 selected – Don't se	All subscriptions	All recourse groups	All times		acations All tags	
All resources	The by nome	Airsubscriptions	Air resource groups	 An types 	Y And	Air tags	
Resource groups	1 of 22 items selected	7105	CTATUC		LOCATION - MAIN		
🔇 App Services		IYPE 🖘	STATUS	RESOURCE GRO 1		TENANCE SUBSCRIPTION TO	PUBLIC IP ADD
Inction Apps	🔽 👰 5-1-upgrade	Virtual machine	Stopped (deallocated)	tdc-nolan-resource	East Asia -	Pay-As-You-Go - A	-
👼 SQL databases	5-1-upgrade-node2	Virtual machine	Stopped (deallocated)	tdc-nolan-resource	East Asia -	Pay-As-You-Go - A	-
😹 Azure Cosmos DB	auto-bdc-srvr-1	Virtual machine (cla	Running	auto-bdc-srvr-1	East Asia -	Pay-As-You-Go - R	Not supported
Virtual machines	auto-bdc-srvr-2	Virtual machine (cla	Running	auto-bdc-srvr-2	East Asia -	Pay-As-You-Go - R	Not supported
Load balancers	bill-simpc-01	Virtual machine (cla	Stopped (deallocated)	bill-simpc-01	East Asia -	Pay-As-You-Go - R	Not supported
Storage accounts	bill-simpc-02	Virtual machine (cla	Stopped (deallocated)	bill-simpc-02	East Asia -	Pay-As-You-Go - R	Not supported
··· Virtual networks	bill-simpc-03	Virtual machine (cla	Stopped (deallocated)	bill-simpc-03	East Asia -	Pay-As-You-Go - R	Not supported
Azure Active Directory	riley-simpc-01	Virtual machine	Stopped (deallocated)	riley-simpc	East Asia -	Pay-As-You-Go - A	-
Monitor	riley-simpc-02	Virtual machine	Stopped (deallocated)	riley-simpc	East Asia -	Pay-As-You-Go - A	-
Advisor	riley-simpc-03	Virtual machine	Stopped (deallocated)	riley-simpc	East Asia -	Pay-As-You-Go - A	-
Security Center	scaling-aaa01	Virtual machine (cla	Running	scaling-aaa01	East Asia -	Pay-As-You-Go - R	Not supported
O Cost Management + Billing	tdc-aaa-server	Virtual machine	Running	riley-vsz-51	East Asia -	Pay-As-You-Go - A	13.70.16.163
Help + support	tdc-abe-simpc01	Virtual machine (cla	Stopped (deallocated)	tdc-abe-simpc01	East Asia -	Pay-As-You-Go - R	Not supported
Images	tdc-abe-simpc01	Virtual machine	Stopped (deallocated)	tdcaberesourcegroup	East Asia -	Pay-As-You-Go - R	-
<u>*</u>	tdcahevsz	Virtual machine	Stonned (deallocated)	tdcaheresourcearoup	Fast Asia -	Pav-As-Vou-Go - R	-

5. Verify the details and click **OK**. The new Virtual Machine is created and listed in the Virtual Machine page as shown in the following image.

FIGURE 69 Virtual Machines

Microsoft Azure				rch resources, services, and docs	× ♫ ≻_ ☺ ଡ
«	Home > Virtual machines				
	Ruckus Wireless, Inc.				
All services	🕇 Add 📰 Edit columns 💍 Refresh 🛛 📢	🕽 Assign tags 🕨 Start 🦿 Restart 🔳 Stop 🛍	Delete 🚝 Services		
- 🛧 Favorites	Subscriptions: Pay-As-You-Go	_			
Dashboard	Filter by name	All resource groups 🗸 🗸	All types	✓ All locations	✓ No grouping
All resources	18 items	TYPE to STATUS	RESOURCE GROUP		SUBSCRIPTION DEPUBLIC IP ADDR
🗊 Resource groups	abe-server	Virtual machine (classic)	abe-server	East Asia	Pay-As-You-Go
Ann Senvices	alon-vsz-361	Virtual machine	Alon-Resource	East Asia	Pay-As-You-Go
	alon-vsz-50	Virtual machine	Alon-Resource	East Asia	Pay-As-You-Go
Function Apps	auto-bdc-srvr-1	Virtual machine (classic)	auto-bdc-srvr-1	East Asia	Pay-As-You-Go
SQL databases	auto-bdc-srvr-2	Virtual machine (classic)	auto-bdc-srvr-2	East Asia	Pay-As-You-Go
🥭 Azure Cosmos DB	bill-simpc-01	Virtual machine (classic)	bill-simpc-01	East Asia	Pay-As-You-Go
Virtual machines	bill-simpc-02	Virtual machine (classic)	bill-simpc-02	East Asia	Pay-As-You-Go
A	bill-simpc-03	Virtual machine (classic)	bill-simpc-03	East Asia	Pay-As-You-Go
W Load balancers	Nolan50beta2upgrade	Virtual machine	Nolan_5.0_beta1	East Asia	Pay-As-You-Go
Storage accounts	Nolan 50 beta 2 upgrade Node 2	Virtual machine	Nolan_5.0_beta1	East Asia	Pay-As-You-Go
Virtual networks	scaling-aaa01	Virtual machine (classic)	scaling-aaa01	East Asia	Pay-As-You-Go
Azure Active Directory	tdc-abe-grafana	Virtual machine (classic)	tdc-abe-grafana	East Asia	Pay-As-You-Go
	tdc-abe-simpc01	Virtual machine (classic)	tdc-abe-simpc01	East Asia	Pay-As-You-Go
Onitor	tdc-abe-simpc01	Virtual machine	tdcaberesourcegroup	East Asia	Pay-As-You-Go
🌳 Advisor	tdcabevsz	Virtual machine	tdcaberesourcegroup	East Asia	Pay-As-You-Go
Security Center	vsz-auto-bdc-1	Virtual machine (classic)	vsz-auto-bdc-1	East Asia	Pay-As-You-Go
A A A A	vsz-auto-bdc-3	Virtual machine (classic)	vsz-auto-bdc-3	East Asia	Pay-As-You-Go
Cost Management + Billing	vsz-server01	Virtual machine (classic)	vsz-server01	East Asia	Pay-As-You-Go
Help + support					
Network security groups					

👰 Images

6. Select the Virtual Machine, and get the Public IP address as shown in the following image.

Microsoft Azure			${\cal P}$ Search resources, services, and do	∝ × ↓ ≻ 🕸 🙂 Ø 🖓
Create a resource	Home > Virtual machines > Nolan50beta2upgrade Virtual machines « * X Ruckus Wireless, Inc.	Nolan50beta2upgrade		
i≡ All services	🕂 Add 📑 Edit columns \cdots More		🏎 Connect 🕨 Start 🦿 Restart 🔳 Stop 🔯 Capture 🛍	🗓 Delete 🛛 Refresh
* FAVORITES	Filter by name	Overview	Resource group (change) Nolan_5.0_beta1 Status	Computer name Nolan50beta2upgrade Operating system
🛄 Dashboard	NAME 10	Activity log	Running	Linux Size
All resources	abe-server	Access control (IAM)	East Asia Subscription (change)	Standard D4 v3 (4 vcpus, 16 GB memory)
Resource groups	alon-vsz-361	🛷 Tags	Pay-As-You-Go Subscription ID	65.52.171.34 Virtual network/subnet
🔇 App Services	auto-bdc-srvr-1	X Diagnose and solve problems	06202224-1062-4830-3080-082611304064	DNS name
Function Apps	auto-bdc-srvr-2	SETTINGS	Tags (change)	Configure
👼 SQL databases	bill-simpc-01	🚨 Networking	Owner : Nolan	*
🬌 Azure Cosmos DB	bill-simpc-02	😂 Disks	Show data for last: 1 bour 6 bours 12 bours 1 day	7 dave 30 dave
Virtual machines	Nolan50beta2upgrade	Size		, adjo so adjo
-	Nolan50beta2upgradeNode2	Security	CPU (average)	Network (total)
	scaling-aaa01	Extensions		
Storage accounts	tdc-abe-grafana	🐔 Continuous delivery (Preview)	80%	3k8 2.5k8
Virtual networks	tdc-abe-simpc01	🔯 Availability set	60%	2k8
Azure Active Directory	tdc-abe-simpc01	🚔 Configuration	40%	1.5KB
Monitor	dcabevsz	H Properties	20%	
🍨 Advisor	vsz-auto-bdc-1	Locks	10:15 AM 10:30 AM 10:45 AM 11 AM	
Security Center	vsz-server01	Automation script	13.08 %	14.55 kB 12.03 kB
Ocst Management + Billing		OPERATIONS	Disk hytes (total)	
Help + support		Q Auto-shutdown		
🏮 Network security groups		i Backup	12M8 10M8	25/s 20/s
👰 Images		Disaster recovery	SMB	15/5
		Update management		2/2 WWI XYYYYYYYYYYYYYY

FIGURE 70 Public IP Address

7. From the Linux PC or terminal use the Public IP address to run the ssh connection as shown in the following image.

FIGURE 71 SSH Connection

<pre># ssh admin@23.99.126.53 The authenticity of host '23.99.126.53 (23.99.126.53)' can't be established. ECDSA key fingerprint is SHA256:1+rT3AWxXmZ7dZAGwXpZq+F2L5UdZn5SXvRR3s1dLy8. ECDSA key fingerprint is MD5:05:92:0d:ce:e5:6c:e7:3f:9f:9a:9b:52:a0:1a:0d:6d. Are you sure you want to continue connecting (yes/no)? yes Warning: Permanently added '23.99.126.53' (ECDSA) to the list of known hosts. ###################################</pre>	ß
Welcome to the Ruckus Virtual SmartZone Command Line Interface Version: 3.6.1.0.215 admin-vsz-361>	

Installing vSZ on the Google Computing Engine

•	Introduction	93
	Logging into GCE and Selecting a Project	93
	Creating a Storage Bucket	97
	Uploading the vSZ Image to a Storage Bucket	101
	Creating a vSZ Image for Virtual Machines	103
	Creating a Network and Configuring Firewall Rules	106
	Creating a Virtual Machine Instance	110

Introduction

You can install vSZ on the Google Computing Engine using the steps mentioned in this section.

NOTE

The minimum memory and CPU requirements have changed in this release. You may need to upgrade your infrastructure before upgrading. Please read carefully. This is the minimum requirement recommended. Refer to the tables in GUID-4800DFDE-7381-4785-8D04-EB6D5EA2590B in the Installation Preparation chapter.

Logging into GCE and Selecting a Project

This section describes how to log into the GCE and select a project.

Ensure that you have created an account with GCE and have the login details for the same.

1. Click http://cloud.google.com to access the Google Cloud Platform website.

2. Log in using your user name and password.

FIGURE 72 Login with user credentials



One account. All of Google.

Sign in to continue to Google Cloud Platform

scg200test	
Next	
	Need help?

Create account

3. Select **My console** as shown.



4. A list of projects you created is displayed. Click to choose a project.

FIGURE 74 Choose the project

Ĩ	Sign up for a free trial and you'll get \$300 in credit and 60 days to explore Google Cloud Platform. Learn more						DISMISS		SIGN	UP FOR	FREE	TRIA
=	Google Cloud Platform	n			۹	TDC-ST -		ø	0	٠	÷	P
A	Home	Das	hboard	All projects GCE-Test SDA3-1-2	gloss	ry-essence-487						
- 53	Dashboard		D	✓ TDC-ST		tdo-st						
=	Activity		ID: tdost (#624465975414)	Manage all pr Create a proje	projecta oject			entation	ď			
			Tay Compute English			Cloud Pletform solutions C						
			Spin up virtual machines using 0	Google		Cloud Platforr	n tutori eli	€ C				
		Compute Engine, Node js, and MongoOB to create a guestbook app in this guided walkthrough.	ongoUB guided	Use Google APIs								
	Get started				Enable APIs, create credentials, and track your usage							

NOTE

You can create projects by clicking **Create a project** in the drop-down.

5. Click **Product and Services** icon to view the list of GCE services.

	Google Cloud Platform		۹	TDC-ST 👻 🎁 💁 😰				
♠	Home	Dashboard						
-98	Dashboard	Project: TDC-ST		Documentation				
=	Activity	ID: tdoat (#624465975414)	~	Google Cloud Platform document				
0	Google Cloud Platform							
Ŧ	Filter products & services	board						
ń	Home							
RPI	API Manager	Project: TDC-ST		Documentation				
	Billing	ID: tdc-st (#624465975414)	~	Google Cloud Platform documen				
	Cloud Launcher	To: Compute Engine		□ Cloud Platform solutions 🖒				
	Permissions	Spin up virtual machines using (Compute Engine, Node js, and M	Google longoDB	Cloud Platform tutorials 🖸				
COMP	UTE	to create a guestbook app in this walkthrough.	s guided	Use Google APIs				
<i>.</i> @.	App Engine	Get started		Enable APIs, create credentials, your usage				
۲	Compute Engine			00T Enable and manage ADI-				
٨	Container Engine	Try App Engine (sandbox environment)	¢					
4	Networking	Create and deploy a Hello World without worrying about the unde	l app erlying	Try App Engine (manage environment)				

FIGURE 75 Selecting a Project

Creating a Storage Bucket

You can create storage for the objects you create. Follow these steps to create storage.

1. From Google Developers Console, click Product and Services icon > Storage. The Cloud Storage Buckets screen appears.

FIGURE 76 Storage Bucket Browser

0	Google Cloud Platform
STORA	GE
Ŵ	Bigtable
0)	SQL
	Datastore
	Storage

2. Click **Create Bucket**. The New bucket screen appears.

FIGURE 77 Creating a Storage Bucket

	Google Cloud Platform	ı		۹		
	Storage	Browser	CREATE BUCKET	C REFRESH	👕 DELETE	
•	Browser	Buckets				
÷	Transfer	Name Name	s	Storage class		
	0.00	vsz-asia	vsz-asia Standard			
😰 Settings		VSZ-US	Standard			

- 3. Complete the following fields,
 - a) In **Name**, type the name of the storage bucket
 - b) In **Storage class**, select the storage class you want. You can choose from **Standard**, **Durable Reduced Availability** (**DRA**) or **Cloud Storage Nearline** in the drop-down list. Use the below table to compare the storage classes.
 - c) In **Location**, select the location from the drop-down list.

Storage Class	Characteristics	Use Cases	Bucket Location
Standard Storage	High availability, low latency (time to first byte is typically tens of milliseconds).	Storing data that requires low latency access or data that is frequently accessed ("hot" objects), such as serving website content, interactive workloads, or gaming and mobile applications	Continental locations
Durable Reduced Availability (DRA)	Lower availability than Standard Storage and lower cost per GB stored.	Applications that are particularly cost-sensitive, or for which some unavailability is acceptable such as batch jobs and some types of data backup.	Continental and regional locations
Cloud Storage Nearline	Slightly lower availability and slightly higher latency (time to first byte is typically 2 - 5 seconds) than Standard Storage but with a lower cost.	Data you do not expect to access frequently (i.e., no more than once per month). Typically this is backup data for disaster recovery, or so called "cold" storage that is archived and may or may not be needed at some future time.	Continental locations

TABLE 9 Bucket Storage Location

FIGURE 78 New Bucket Information

The bucket name must be u	unique across Cloud Storage.	
vsz-test		
Storage class 📀		
Standard		-
Location 🕜		
United States		*
United States Privacy: Do not include se access your data without buckets to find out if the	ensitive information in the bucket r t permission, but they can still try to name exists.	name. Users cannot o access or create

4. Click **Create**. The storage bucket you created is listed in the browser.

5. To create another storage, click **Create bucket** as shown.

Overview	Create bucket	Filter by prefix
Permissions		
APIs & auth	Name	Storage class
Monitoring		Durable Reduced Availability
Source Code	V52	Durable Reduced Availability
Deploy & Manage		
Compute		
Networking		
Storage		
Cloud Bigtable		
Cloud Datastore		
Cloud SQL		
Cloud Storage		
Storage browser		
Storage settings		
Big Data		

FIGURE 79 Creating Another Storage Bucket

6. Verify that the storage bucket has been created.

FIGURE 80 Selecting the Storage Bucket

Browser	CREATE BUCKET	C REFRESH	DELETE	
Buckets				
Name		Storage class		Location
vsz-asia		Standard		ASIA-EAST1
vsz-test		Standard		US
VSZ-US		Standard		US-CENTRAL1

Uploading the vSZ Image to a Storage Bucket

Follow these steps to upload a controller image to the storage bucket you created.

1. Extract the vSZ raw.bin file that you obtained from Ruckus Networks.

NOTE

- If the "Permission denied" error appears, execute the command "chmod +x vscg-3.5.0.0.808.raw.bin" before extracting the file.
- If the "uudecode: command not found" error appears during the extraction process, install the "sharutils" package, and then try extracting the image again.
- 2. Read the Virtual SmartZone (vSZ) Software License agreement that appears when you extract the raw.bin file.
- 3. When the Accept this agreement? prompt appears, enter yes to accept the license agreement.

When the extraction process is complete, a raw.tar.gz file appears.

4. On the GCE web interface, browse to the storage bucket where you want to upload the vSZ image file.

FIGURE 81 Browse to the storage bucket

≡	Google Cloud Platform	TDC-ST 👻	۹		5.	9	9
	Storage	Browser	UPLOAD FILES	CREATE FOLDER	C REFRESH		Ī
•	Browser	Buckets / vsz-on	Buckets / vsz-on-dce-us				
₽	Transfer	There are no objects in this bucket.					
\$	Settings						

5. Click Upload files.

6. Browse to the location of the .raw.tar.gz image file that you extracted, and then select it.

NOTE

You can only select .raw.tar.gz files.

FIGURE 82 Select the .raw.tar.gz image file that you extracted

File Upload ×							
var www	vsz-fw test						
Places	Name	~	Size	Modified	^		
🏰 Search	📄 vscg-3.5.0.0.808.raw.bin		954.4 MB	03/26/2017			
Recently Used	📔 vscg-3.5.0.0.808.raw.tar.gz		1009.1 MB	03/26/2017			
🛅 test							
🗟 root							
🔯 Desktop							
🔜 File System							
🛅 Documents							
词 Music							
🛅 Pictures					=		
📋 Videos							
🗟 Downloads							
					~		
	L						
				All Files 🗘			
			Cancel	Open	٦		

7. Click **Open** to upload the image file.

Your browser displays the progress of the file upload process. After the upload process is complete, the image file appears in the storage bucket.

FIGURE 83 The image file appears in the storage bucket

≡	Google Cloud Platform	TDC-ST 🕶 🔍			>.	9 0 	÷ 🔒
	Storage	Browser	UPLOAD FILES	CREATE FO	LDER CREFRESH		
• =	Browser Transfer	Buckets / vsz-on-gce-us	3				Ŧ
\$	Settings	Name	08.raw.tar.gz	Size 1,009.13 MB	Type application/x-gzip	Storage class Nearlin e	Last modified 4/5/17, 9:19 AN

Creating a vSZ Image for Virtual Machines

Follow these steps to create a vSZ image for virtual machines.

1. From Google Developers Console, click Compute > Compute Engine.

FIGURE 84 Select Compute Engine



2. On the menu, click **Images**, and then cllick **Create Image**.

FIGURE 85 Click Create Image

≡	Google Cloud Platforr	TDC-ST - Q			۶.
۲	Compute Engine	Images [+] CREATE IMAGE C RI	FRESH	+ CREAT	EINSTANCE
B	VM instances	Filter by label or name			Columns 🔻
晶	Instance groups	de Braudaura 1 2 Navitas			
	Instance templates	<pre></pre>			
٢	Disks	Name	Size	Created by	Family
0	Snapshots	sql-2016-web-windows-2012-12-00-v2017/0214	50 GB	Microsoft	sql-web-2
(H)	Images	✓ ubuntu-1204-precise-v20170330	10 GB	Canonical	ubuntu-12
58	Committed use discounts	🗌 🥝 ubuntu-1404-trusty-v20170330	10 GB	Canonical	ubuntu-14
	Metadata	🛛 🥝 ubuntu-1604-xenial-v20170330	10 GB	Canonical	ubuntu-16

The **Create an image** page appears.

- 3. Configure the properties of the new image by fillng out the boxes below.
 - a) In **Name**, type the name of the image.
 - b) In **Description**, provide a brief description about the image.
 - c) In **Encryption**, select an option from the drop-down list containing Automatic (recommended) and Customer supplied.
 - d) In Source, select Cloud storage file.
 - e) In Cloud Storage file, click Browse, and then select the .raw.tar.gz image file that you extracted previously.

FIGURE 86 Creating an image

≡	Google Cloud Platform	TDC-ST - Q
۲	Compute Engine	← Create an image
	VM instances Instance groups Instance templates Disk s	Name Vsz3-5-0-0-808 Family (Optional) Description (Optional)
0	Snapshots	
	Committed use discounts	Encryption Automatic (recommended)
6 55	Health checks Zones	Cloud Storage file Cloud Storage file Your image source must use the .tar.gz extension and the file inside the archive must be named disk. raw
©	Operations Quotas	Image: Stress of section Browse Create Cancel

4. Click **Create**.The new image is listed.

GCE creates the new image. When the process is complete, the image you created from the .raw.tar.gz image file appears on the **Images** page.

FIGURE 87 The new image you created appears on the Images page

≡	Google Cloud Platform	TDC-ST 🔫	۹				۶.	ø		۰
۲	Compute Engine	Images	[+] CREATE	IMAGE	C REFRESH	E CREA	TEINSTANCE		⊖ dep	RECAT
日	VM instances	name:vsz3-5-0-0-8	08				Columns 🔻	•	Labels	
ណ្ដឹ	Instance groups	Name	Size	Created by	Family	Creation time				
	Instance templates	🗌 🔮 vsz3-5-0-0	-808 40 GB	TDC-ST		Apr 5, 2017,	9:23:31 AM			
Q	Disks	Show deprecated in	Saber							
0	Snapshots	onow depredated in	lages							
64	Images									
53	Committed use discounts									

You have completed creating an image.

Creating a Network and Configuring Firewall Rules

Follow these steps to create a network and configure firewall rules for your network.

1. From **Google Developers Console**, click **Networking** > **Networks**. A page displaying a list of networks appears. Select the default network.

`≡	Google Cloud Platform	ı	٩				
N ^ℓ	Networking	Network	(S	CREATE NETWORK			
8	Networks	Name 🔨	Region	Subnetworks	IP addresses ranges	Gateways	Firewall Rules
Ľ	External IP addresses	default		4			6
			us-central1	default-f088469e3c9d00fa	10.128.0.0/20	10.128.0.1	
35	Firewall rules		europe-west1	default-a235aa305b4819ed	10.132.0.0/20	10.132.0.1	
	Pourtos		asia-east1	default-f178010a9beefb5d	10.140.0.0/20	10.140.0.1	
-74	Routes		us-east1	default-11e13ceee850524d	10.142.0.0/20	10.142.0.1	

FIGURE 88 List of networks

2. To create a firewall rule, click **Add a firewall rule**.

FIGURE 89 Add a Firewall Rule

Firewall rules	
Add firewall rule Delete	
Name A	Source tag / IP range
default-allow-icmp	0.0.0/0
default-allow-internal	10.128.0.0/9
default-allow-rdp	0.0.0/0
default-allow-ssh	0.0.0/0
tdc-vsz	59.124.251.135/32, 59.124.228.54/32
VSZ	0.0.0/0

- 3. The **Create a firewall rule** screen appears.
 - a) In **Name**, type the name of the rule
 - b) In **Description**, provide a brief description about the rule.
 - c) In **Network**, type the network address.
 - d) In Source filter, select Allow from any source.
 - e) In **Source IP ranges**, type the range.
 - f) In Allowed protocols and ports, type the protocols and ports that will be allowed
 - g) In **Target tags**, specify a tag name. It is recommended that you provide a tag as all network instances with this tag will adhere to the firewall rule.

FIGURE 90 Creating a Firewall Rule
÷	Create a firewall rule
By d inco traff is pe	efault, incoming traffic from outside your network is blocked. To allow ming traffic, set up a firewall rule. Firewall rules regulate only incoming ic to an instance. When a connection is established with an instance, traffi ermitted in both directions over that connection. Learn more
Nam	e 🕜
vsa	2
Des	cription (Optional)
Netv	vork 🛞
def	fault 👻
Sour	ce filter 🔞
All	ow from any source (0.0.0/0)
Allow	wed protocols and ports 📀
top	:91,443,7443,8022,8443,8090,8099,8100,8111,9080,9443,9446,9996-9999;
Targ	et tags (Optional) 🔞
VSZ	4
Cre	Cancel
Faui	valent REST or command line

4. Click **Create**. A page displaying the new firewall rule appears.

FIGURE 91 Adding Firewall Rules

Fire	wall rules			
Ad	d firewall rule Delete			
-	Name A	Source tag / IP range	Allowed protocols / ports	Target tags
	default-allow-icmp	0.0.0/0	icmp	Apply to all targets
	default-allow-internal	10.128.0.0/9	tcp:0-65535; udp:0-65535; icmp	Apply to all targets
	default-allow-rdp	0.0.0/0	tcp:3389	Apply to all targets
	default-allow-ssh	0.0.0/0	tcp:22	Apply to all targets
	tdc-vsz	59.124.251.135/32, 59.124.228.54/32	tcp:91,443,7443,8022,8443,8090,8099,8100,8111,9080,9443,9446,9996-9999; udp:161,12223	tdc-vsz
Ø	vsz	0.0.0/0	tcp:91,443,7443,8022,8443,8090,8099,8100,8111,9080,9443,9446,9996-9999; udp:161,12223	VSZ

Creating a Virtual Machine Instance

Follow these steps to create a new virtual machine (VM_ instance.

1. From Google Developers Console, click Compute > Compute Engine > VM instances.

The VM instances page appears.

FIGURE 92 The VM instances page

≡	Google Cloud Platform	TDC-ST - Q			5.	9 9
۲	Compute Engine	VM instances	CREATE INSTANCE	📩 IMPORT VM	C 🕨	5 🔳 🤆
B	VM instances	Filter by label or name			Columns 🔻	♦ Labels
ц <mark>я</mark> ,	Instance groups					

2. Click Create Instance.

The **Create an instance** page appears.

FIGURE 93 The Create an instance page

≡	Google Cloud Platfor	m TDC-ST - Q
۲	Compute Engine	← Create an instance
A	VM instances	Name 🕢
ц <mark>П</mark> а	Instance groups	vsz-test
	Instance templates	Zone 🕢
0	Disks	Machine type
0	Snapshots	4 vCPUs - 18 GB memory Customize
	Images	
51	Committed use discounts	Boot disk 🥹
	Metadata	Image
ß	Health checks	Debian GNU/Linux 8 (jessie) Change

- 3. Configure the new VM instance that you are creating by filling out the boxes below.
 - a) In **Name**, type the name of the VM instance.
 - b) In **Zone**, select a zone from the drop-down list.
 - c) In **Machine type**, accept or modify the default values for **vCPUs** and **Memory**.
 - d) Under **Boot disk**, click **Change**. The **Boot disk** page appears. Click **Custom images**. In **Show images from**, select the storage bucket where you uploaded the controller image, and then select the image. Click **Select**.
 - e) In **Project access**, allow API access as appropriate.

FIGURE 94 Creating a new VM instance

Boot disk

Select an image or snapshot to create a boot disk; or attach an existing disk.

03 intages	Application images	Custom images	Snapshots	Existing disks
Show im ages	from			
TDC-ST				•
cacti-34				
Created fr	om TDC-ST on Mar 21, 201	6, 2:20:19 AM		
vsz3-4-0-	0-976			
Created fr	rom TDC-ST on Jul 14, 201	6, 7:41:37 AM		
vsz3-5-0-	0-490			
Created fr	rom TDC-ST on Jan 3, 2017	, 8:27:06 AM		
vsz3-5-0-	0-704			
Created fr	rom TDC-ST on Mar 3, 2017	7, 7:50:46 AM		
🔿 vsz3-5-0-	0-741			
Created fr	rom TDC-ST on Mar 9, 2017	7, 1:55:15 AM		
vsz3-5-0-	0-762			
Created fr	rom TDC-ST on Mar 15, 201	17, 9:21:38 AM		
vsz3-5-0-	0-777			
Created fr	rom TDC-ST on Mar 19, 201	17, 8:03:58 AM		
	0-808			
vsz3-5-0-		0.02.21 AM		
vsz3-5-0- Created fr	rom TDC-ST on Apr 5, 2017	, 9.20.01 AIVI		
 vsz3-5-0- Created fr Boot disk type 	rom TDC-ST on Apr 5, 2017 e 🔞	Size (GB)	0	

- f) In **Firewall**, select the options as appropriate.
- g) In **Project access**, allow API access as appropriate.
- h) In **Management**, ensure that the tag provided is the same as the one provided while creating a firewall rule. This ensures port mapping happens correctly.

FIGURE 95 Management Tab

Management	Disks	Networking	SSH Keys	
Description (Opt	ional)			
				/
Labels 🕜 (Optio	onal)			
Key		Va	lue	
VSZ		e	mpty	×
		+ Add Ia	bel	

i) In **Disk**, select the options as appropriate.

FIGURE 96 VM Disk Configuration

Management	Disks	Networking	SSH Keys	
Deletion rule Delete boot 	disk when	instance is dele	ted	
Encryption 🕜				
Automatic (rec	commende	ed)		•
Additional disks	(Option	aal)		
		🕂 Add ite	em	
☆ Less				
You will be bille	d for this i	nstance. <mark>Learn</mark>	more	
Create	ncel			
Equivalent RES	T or comm	and line		

j) In **Networking**, select the external options as per the following table.

FIGURE 97 Networking

Management	Dis ks	Networking	Access & security	
Subnetwork 📀				
default-f17801	0a9beefb	5d		Ŧ
External IP 📀				
Ephemeral				•
IP forwarding 🕘)			
On				Ŧ
☆ Less				
You will be bille	d for this	instance. <mark>Learn</mark> i	more	
Create Car	ncel			

Equivalent REST or command line

External IP Options	Description
Ephemeral	The VM is assigned a dynamic public IP address
None	The VM instance is not assigned an external IP address
New static IP address	The VM is assigned a static public IP address

k) In **SSH Keys**, select the options as appropriate.

	Disks	Networking	SSH Keys					
These keys allow	access on	ly to this instance,	unlike project-wic	le SSH keys Lear	n more			
Block project	c t-wide SS ed, project-v	H keys vide SSH keys car	not access this in	stance <mark>Learn mo</mark>	ore			
		Enter entire	key data					
					×			
		- Add ite	5111					
You will be bille	d for this	instance. <mark>Learn</mark>	more					
Create Car	ncel	nces page appe:	ars listing the ne	w VM that is cre	ated			
Create Car Click Create. The FIGURE 99 The n	NCE VM insta ew VM ap	nces page appea pears on the list	ars listing the net t of VMs	w VM that is cre	eated.			
Create Car Click Create. The FIGURE 99 The n	VM insta ew VM ap	nces page appea pears on the list REATE INSTANCE	ars listing the net t of VMs	W VM that is cre	eated.		Î	SHOW INFO PAN
Create Car Click Create. The FIGURE 99 The n VM instances	VM insta ew VM ap C C	nces page appea pears on the list REATE INSTANCE	ars listing the ner c of VMs MPORT VM	WVM that is cre CREFRESH	eated.	■ [™]	Î	SHOW INFO PAN Dismiss all
Create Car Click Create. The FIGURE 99 The n VM instances 12 instances could Filter VM instance	VM insta ew VM ap 2 C d be resized to s	nces page appea pears on the list REATE INSTANCE	ars listing the net to f VMs	W VM that is cre C REFRESH	eated. START am more		Column	SHOW INFO PAN Dismiss all
Create Car Click Create. The FIGURE 99 The n VM instances 12 instances could Filter VM instance	VM insta ew VM ap C d be resized to s	nces page appea pears on the list REATE INSTANCE	ars listing the net t of VMs IMPORT VM ed \$190 per month and inc Recommendation	W VM that is cre C REFRESH	eated. START arn more External IP	Connect	Column	SHOW INFO PAN Dismiss all
Create Car lick Create. The IGURE 99 The n VM instances ? 12 instances could Filter VM instance Name ^ () () (resh50-524	NCE VM insta ew VM ap 2 C d be resized to s	nces page appea pears on the list REATE INSTANCE	ars listing the ner c of VMs IMPORT VM ed \$190 per month and inc Recommendation © Increase perf.	W VM that is cre C REFRESH	eated. START arn more External IP	Connect SSH •	Column	SHOW INFO PAN Dismiss all

You have completed creating a virtual machine instance.

Installing vSZ on Amazon Web Services

•	Installing AWS CLI	117
•	Creating a VM Import Service Role	118
•	Installing vSZ on AWS	119
	Creating the vSZ Instance.	126
	Configuring AWS for a vS7 Instance	133
•	Deleting a vSZ Instance	137

Installing AWS CLI

Ensure that you have created an account with AWS and have the login details for the same.

1. Install pip by running the command

```
# curl-0 https://bootstrap.pypa.io/get-pip.py
# sudo python27 get-pip.py
```

- 2. Install AWS CLI using pip:# pip install
- 3. Test the installation by using the command: # aws help
- 4. To set up AWS CLI you need to get your access and secret key identifier. Follow the instructions and find your identifier keys.
- 5. Use the following command to configure CLI:

```
# aws configure
AWS Access Key ID [None]: xxx
AWS Secret Access Key [None]: xxx
Default region name [None]: us-west-2
Default output format [None]: json
```

6. The default region should be the same as the bucket region. Refer to Table for the mapping details. In addition refer to you can also refer to latest version.

Region Name	Region
us-east-1	US East (N. Virginia)
us-west-2	US West (Oregon)
us-west-1	US West (N. California)
eu-west-1	EU (Ireland)
eu-central-1	EU (Frankfurt)
ap-southeast-1	Asia Pacific (Singapore)
ap-northeast-1	Asia Pacific (Tokyo)
ap-southeast-2	Asia Pacific (Sydney)
ap-northeast-2	Asia Pacific (Seoul)
sa-east-1	South America (Sao Paulo)

Creating a VM Import Service Role

- 1. In the AWS web interface navigate to AWS dashboard > Identity & Access Management.
- 2. Check your account permission by navigating to **Users** > **select your Username** > **Permissions**. Your account should have the permission *IAMFullAccess*.

FIGURE 100 Account Permission

Dashboard	IAM > Policies > IAMF	ullAccess			
Search IAM	 Policy Details 				
Details	Policy ARN Description	arn:aws:iam Provides ful	n::aws:policy/IAMFullA Il access to IAM via th	access e AWS Management	Console.
Groups					
Users	Policy Document	Attached Entities	Policy Versions	Access Advisor	
Roles					
Policies	read-only				
Identity Providers	1 • {	n"• "2012_10_17"			
Account Settings	3 - "Statem	ent": [
Credential Report	4* { 5 "Ef 6 "Ac 7 "Re	fect": "Allow", tion": "iam:*", source": "*"			
Encryption Keys	8 } 9] 10 }				

3. Create a JSON file called trust-policy.json using the following commands:

```
"Version":"2012-10-17",
"Statement":[
   {
      "Sid":"",
      "Effect": "Allow",
      "Principal":{
                               "Service":"vmie.amazonaws.com"
      },
      "Action":"sts:AssumeRole",
      "Condition":{
         "StringEquals":{
            "sts:ExternalId":"vmimport"
         }
      }
  }
]
```

4. Use the following command to create a role. Specify the name as vmimport and give the option VM Import/Export access.

aws iam create-role --role-name vmimport --assume-role-policy-document file://trust-policy.json

{

}

5. Create a policy for the service role by creating a JSON file called role-policy.json using the following commands. Replace the bucket name with the storage bucket name that you created.

```
"Version":"2012-10-17",
"Statement":[
  {
      "Effect":"Allow",
      "Action":[
         "s3:ListBucket",
         "s3:GetBucketLocation"
      ],
      "Resource":[
         "arn:aws:s3:::<bucket-name>"
      ]
  },
   {
      "Effect":"Allow",
      "Action":[
         "s3:GetObject"
      ],
      "Resource":[
         "arn:aws:s3:::<bucket-name>/*"
      ]
   }
```

6. Run the following command to attach the policy to the service role created. # aws iam put-role-policy --rolename vmimport --policy-name vmimport --policy-document file://role-policy.json

Installing vSZ on AWS

Follow the steps to install vSZ using the AWS web user interface.

Logging into AWS

{

Follow these steps to login to the AWS site.

1. Click https://aws.amazon.com, to access the Amazon Web Services website.

2. Login with your user credentials of user name and password.

FIGURE 101 Login with user credentials

Account:	
User Name:	
Password:	
	I have an MFA Token (more info)
	Sign In
	Sign-in using root account credentials

3. Select **My Account > AWS Management Console** as shown.

FIGURE 102 AWS management console

Menu	webservices	English 🔻	My Account Sign In to the Console
			MY ACCOUNT
			AWS Management Console
			Account Settings
			Billing & Cost Management
			Security Credentials
Int	roducing Amazon		W ES

Creating a Storage Bucket

Create storage for the objects you create. Follow these steps to create storage.

1. Navigate to Amazon Web Services > Storage and Content Delivery > S3, click Create Bucket as shown.

FIGURE 103 Create Bucket

T AWS V Services V Edit V
Amazon Web Services
Compute
Virtual Servers in the Cloud
EC2 Container Service Run and Manage Docker Containers
Run and Manage Web Apps
Run Code in Response to Events
Storage & Content Delivery
Scalable Storage in the Cloud
Create Bucket
🎁 AWS 🕶 Services 🕶 Edit 🕶
Create Bucket Actions 🕶

2. Type the name of the storage bucket and select a suitable regional endpoint to reduce data latency.

FIGURE 104 Selecting regional endpoint	
Create a Bucket - Select a Bucket Nam	e and Region Cancel 🗵
A bucket is a container for objects stored in Amazo to optimize for latency, minimize costs, or address bucket naming conventions, please visit the Amazo	on S3. When creating a bucket, you can choose a Region regulatory requirements. For more information regarding on S3 documentation.
Bucket Name:	
Region: Oregon +	
	Set Up Logging > Create Cancel

- 3. Click **Create**. The storage bucket you created is listed in the browser.
- 4. Check the storage bucket has been created.

Uploading vSZ Image to a Storage

Follow these steps to upload a vSZ image to the storage bucket you created.

- 1. Select the storage bucket to upload the vSZ image.
- 2. Click **Upload** as shown.

FIGURE 105 Selecting the Storage



- Browse to the location of the vSZ image and select vSZ image file.
 Only images with file-type *.raw or .ova or vmdk can be selected.
- 4. Click **Start Upload** to upload the file. The upload process is displayed.

5. The image is listed in the storage bucket after the image is uploaded.

FIGURE 106 vSZ Image Uploaded to Storage Bucket

Upload Create Folder	Actions ~	Q Search by prefix	None	Properties	Transfers	C
All Buckets /Test_bucket						
Name		Storage Class	s Size	Las	t Modified	
vscg-3.4.0.0.230.ova		Standard	906.8 ME	Mon 1	Nov 09 10:29:04 GMT	+800 2015
vscg-3.4.0.0.310.ova		Standard	993.3 ME	Mon I	Dec 28 10:59:17 GMT	+800 2015
vscg-3.4.0.0.610.ova		Standard	983.2 ME	Fri Ma	ar 25 12:36:59 GMT+0	800 2016
vscg-3.4.0.0.618.ova		Standard	1 GB	Thu M	lar 31 14:14:00 GMT	+800 2016

NOTE

The vSZ image should be in the Bucket, which has Region information. Example: Test_bucket

AWS Service Policy

VM Import uses a role in your AWS account to perform certain operations (for example, downloading disk images from an Amazon S3 bucket). You must create a role with the name vmimport with the following policy and trusted entities.

- 1. Install the AWS CLI by following the instructions at http://docs.aws.amazon.com/cli/latest/userguide/installing.html
- 2. Enter the following command in the AWS CLI #sudo pip install awscli.
- 3. Get the access key for the AWS CLI by following the instructions on the AWS website.
- 4. Add the access key details to the AWS CLI using the following commands

```
# aws
configureAWS Access Key ID [None]:
AWS Secret Access Key
[None]: Default region name [None]:
us-west-2Default output format
[None]: json
```

5. Create a file named role-policy.json with the following policy:

```
{
   "Version":"2012-10-17",
   "Statement":[
      {
         "Effect":"Allow",
         "Action":[
            "s3:ListBucket",
            "s3:GetBucketLocation"
         ],
         "Resource":[
            "arn:aws:s3:::<disk-image-file-bucket>"
         ]
      },
      {
        "Effect":"Allow",
         "Action":[
            "s3:GetObject"
         ],
         "Resource":[
            "arn:aws:s3:::<disk-image-file-bucket>/*"
         ]
      },
      {
         "Effect":"Allow",
         "Action":[
            "ec2:ModifySnapshotAttribute",
            "ec2:CopySnapshot",
            "ec2:RegisterImage"
            "ec2:Describe*"
         ],
         "Resource":"*"
      }
  ]
}
```

- 6. Replace *<disk-image-file-bucket>* with the appropriate Amazon S3 bucket where the disk files are stored. Run the following command to attach the policy to the role created above:
- Replace <disk-image-file-bucket> with the appropriate Amazon S3 bucket where the disk files are stored. Run the following command to attach the policy to the role created above aws iam put-role-policy --role-name vmimport -policy-name vsz34-policy --policy-document file://role-policy.json

Importing the vSZ Image

Follow these steps to import the vSZ image into AWS shared AMI.

1. Create a JSON file called import.json using the following commands. Replace the bucket name with the storage bucket name that you created. In this example, the vSZ image file name is **vscg-3.4.0.0.750.ova**.

- 2. Run the following command to attach the policy to the role created. **# aws ec2 import-image --cli-input-json file:**// **import.json**
- 3. The system displays the below response.

{

}

```
"Status": "active",
"Description": "Import vSZ",
"Progress": "2",
"SnapshotDetails": [
{
"UserBucket": {
"S3Bucket": "<bucket-name>", "S3Key": "vscg-3.4.0.0.750.ova"
},
"DiskImageSize": 0.0
}
,
"StatusMessage": "pending",
"ImportTaskId": "import-ami-ffgof9w1"
```

- 4. Check the status of the import vSZ image by running the following command. Ensure to enter the correct import task identifier.**# aws ec2 describe-import-image-tasks --import-task-ids "import-ami-ffgof9w1"**
- 5. You will see the following converting status response. Check the status until the converting is complete. The estimated time for conversion is 30 minutes.

```
{
    "ImportImageTasks": [
         {
             "Status": "active",
             "Description": "vSZ test",
             "Progress": "28",
             "SnapshotDetails": [
                  {
                       "UserBucket": {
                            "S3Bucket": "<bucket-name>",
                            "S3Key": "vscg-3.4.0.0.750.ova"
                       },
                       "DiskImageSize": 964430848.0,
                       "Format": "VMDK"
                  }
             1,
             "StatusMessage": "converting",
"ImportTaskId": "import-ami-ffgof9w1"
         }
    ]
}
```

Creating the vSZ Instance

Follow these steps to create a vSZ instance on AWS.

1. From Amazon Web Service, click Compute > EC2.

FIGURE	107 Se	elect EC2
--------	--------	-----------

T AWS 🗸	Services	•	Edit	×
Amazon Web	Service	s		
Compute				
Uirtual Servers in the	e Cloud			

2. Navigate to **Images** > **AMIs** to ensure that the imported **Amazon Machine Image (AMI)** exists. In this example the AMI file is **import-ami-ffgof9w1**.

FIGURE 108 Select A	AMI						
🎁 AWS 🗸 Servic	es 👻 Edit 🗸						
EC2 Dashboard	Launch Actio	ons 👻					
Tags	Owned by me 🗸	Q. Filter by tags and attr	ibutes or search by I	keyword			
Reports Limits	Name	- AMI Name •	AMI ID 🗸	Source ~	Owner -	Visibility -	Status
INSTANCES		import-ami-ffgof9w1	ami-06d14506	388876092313/i	388876092313	Private	available
Instances		import-ami-fgfox0gv	ami-3cf77d3c	388876092313/i	388876092313	Private	available
Spot Requests Reserved Instances MAGES AMIs Bundle Tasks							

3. Navigate to **Network & Security > Security Groups > Create Security Group**. Security group acts as a virtual firewall that controls the traffic for one or more instances.

🎁 AWS 🗸 S	ervices 🗸 Edit 🗸	
EC2 Dashboard	Create Security Group Actions *	
Tags	Q Filter by tags and attributes or search by keyword	
Reports		
Limits	Name - Group ID	Group Name
INSTANCES	sg-997739fc	default
Instances	sg-f3064f96	all-allowed
Spot Requests	sg-f7703e92	launch-wizard-1
Reserved Instances		
IMAGES		
AMIs		
Bundle Tasks		
ELASTIC BLOCK STORE		
Volumes		
Snapshots		
NETWORK & SECURITY		
Security Groups		

FIGURE 109 Create Security Group

4. Define the setup group name, description, ports and the firewall rule. The table lists the common service ports. For more information, see Ports to open for AP-vSZ communication.

Port Number	Description
UDP	
161	SNMP
12223	ZD AP forward update using FTP (control connection)
ТСР	
21	ZD AP forward update using FTP (control connection)
22	AP SSH
91	AP forward update using HTTP
443	Allows AP get SSH private key and do AP FW udpate via HTTPs
7443	Public API
8022	SSH for management (mgmt-acl is enabled on 1 nic vSZ)
8080	vSZ setup wizard using the web user interface (User will be redirected to the port 8443)
8443	vSZ web user interface
8090, 8099	WISPr for non-web-proxy user equipment
8100	WISPr for web-proxy user equipment
9998	Tomcat for WISPr (internal WISPr portal uses the port 9998)
9080, 9443	Northbound API (NBI)
16384-65000	ZD AP forward update using FTP (data connection)

FIGURE 110 Define Security Group

Create Security G	Group			×
Security group name Description VPC	vpc-6c68da09 (172.31 * denotes default VPC	.0.0/16) * •		
Security group rules:				
Туре ()	Protocol (j)	Port Range (i)	Source (i)	
	Π	his security group has no rules		
Add Rule				
			Canc	el Create

- 5. Navigate to **Instances** and click on **Launch Instances**. Follow these steps.
 - a) Launch Instance

FIGURE 111 Launch instances

🎁 AWS 🗸	Services 🗸 Edit 🗸
EC2 Dashboard Events	Launch Instance Connect Actions V
Tags	Q. Filter by tags and attributes or search by keyword
Limits	Name - Instance ID - Instance Type -
INSTANCES	i-40312be2 t2.micro
Instances	i-988a913a m4.xlarge
Spot Requests	
Reserved Instances	

b) Navigate to My AMIs and choose the Amazon Machine Image (AMI) that you imported previously.

FIGURE 112 Choose the imported AMI

1. Choose AMI 2. Choose Instar	Ince Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review	
Step 1: Choose an An AMI is a template that contain you can select one of your own A	Amazon Machine Image (AMI) ns the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community AMIs.	Cancel and Exit y, or the AWS Marketplace; or
Quick Start	Q, Search my AMIs X	1 to 1 of 1 AMIs \rightarrow $>$
AWS Marketplace	Import-ami-fgfox0gv - ami-3cf77d3c AWS-VMImoot service: Linux - Cent0S release 6.3 (Final) - 2.6.32-504.23.4 e85 x86 64	Select
Community AMIs	Root device type: ebs Virtualization type: twm Owner: 386876092313	64-bit

- c) Click Next.
- d) Choose a suitable instance type. In this example the instance type is *m4.xlarge*. Based on the number of APs and client counts, select the instance type to fit the recommended system resources.

The minimum memory and CPU requirements have changed in this release. You may need to upgrade your infrastructure before upgrading. Please read carefully. This is the minimum requirement recommended. Refer to Table 5 and Table 6 in the chapter Preparing to Install the vSZ.

FIGURE 113 Choose the instance type

Step 2: Choose an Instance Type Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that ca give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and ho									
Filter by: All instance types V Current generation V Show/Hide Columns									
Currently selected: m4.xlarge (13 ECUs, 4 vCPUs, 2.4 GHz, Intel Xeon E5-2676v3, 16 GiB memory, EBS only)									
	Family	туре т	vCPUs (i) -	Memory (GiB) -					
	General purpose	t2.micro Free tier eligible	1	1					
	General purpose	t2.small	1	2					
	General purpose	t2.medium	2	4					
	General purpose	t2.large	2	8					
	General purpose	m4.large	2	8					
	General purpose	m4.xlarge	4	16					

- e) Click Next.
- f) Select the required network, subnet, and private IP address.

The private IP address cannot be changed once the vSZ image is launched.

FIGURE 114 Configure the instance

Step Configure	3: Configure Instan e the instance to suit your require	ce Dements. Y	etails /ou can launch multiple instances from the same AMI, req	Jest S	Spot Instances to take adv
	Number of instances	()	1		
	Purchasing option		Request Spot Instances		
	Network	()	vpc-6c68da09 (172.31.0.0/16) (default)	С	Create new VPC
	Subnet	()	No preference (default subnet in any Availability Zone -		Create new subnet
	Auto-assign Public IP	()	Use subnet setting (Enable)		
	Placement group		No placement group		
	IAM role		None -	C	Create new IAM role

- g) Click **Next**.
- h) Change the size of storage as required.

FIGURE 115 Change the storage size

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attacl edit the settings of the root volume. You can also attach additional EBS volumes after la storage options in Amazon EC2.

Туре (і)	Device (i)	Snapshot (i)	Size (GiB) (i)
Root	/dev/sda1	snap-817e261c	100

- i) Click Next.
- j) Specify the vSZ instance by giving it a name.

FIGURE 116 Specify the vSZ instance

Step 5: Tag Instance A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Na	me and value = Webserver. Learn more abou
Key (127 characters maximum)	Value (255 characters maximum)
Name	

k) Click Next.

I) Create a new security group or select an existing group. Configure the rules if required.

FIGURE 117 Specify the security group

Step 6: Con A security group is your instance, add	a set of firewall intes that co rules that allow unrestricted	Group ntrol the traffic for your instance. On this access to the HTTP and HTTPS ports.	s page, you can add rules to allow specific traff You can create a new security group or select	ic to reach your instance. For example, if you from an existing one below. Learn more abo	u want to set up a web server and allow Inter ut Amazon EC2 security groups.
	Assign a security group:	Create a new security group			
		Select an existing security group	•		
	Security group name:	launch-wizard-1			
	Description:	launch-wizard-1 created 2015-09-14	T11:39:49.903+08:00		
Туре 🕕		Protocol (i)	Port Range	0	Source ()
SSH	•	TCP	22		Anywhere - 0.0.0.0/0
Add Rule					

m) Click Next.

n) Review the configuration settings.

FIGURE 118 Review the configuration settings

Step 7: Revie	w Instance L	aunch								
 AMI Details 										Edit AMI
AWS-VI Root Dev	t-ami-fgfox0gv - am MImport service: Linux vice Type: ebs Virtualiza	II-3cf77d3c - CentOS release tion type: hvm	6.3 (Final) - 2.6.32-504.23.4	.el6.x86_64						
 Instance Type 									Edit in	stance type
Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage	(GB)	EBS-Optimized Available		Network Performance		
m4.xlarge	13	4	16	EBS only		Yes		High		
 Security Group 	ps								Edit sec	urity groups
Security group na Description	ame launch- launch-	wizard-1 wizard-1 created	d 2015-09-14T11:39:49.903	l+08:00						Ξ
Type (i)		Pr	otocol (i)		Port Range (i)		Source (D		
SSH		тс	P		22		0.0.0.0/0			
Instance Detail	ils								Edit inst	ance details
Storage										Edit storage
								Ca	ncel Previo	us Launch

- o) Click Launch
- p) Select the **Proceed without a key pair** for vSZ instance.

FIGURE 119 Select existing key pair

Select an existing key pair of	or create a new key pair X
A key pair consists of a public key that AWS they allow you to connect to your instance s to obtain the password used to log into your securely SSH into your instance. Note: The selected key pair will be added to about removing existing key pairs from a pu	S stores, and a private key file that you store. Together, securely. For Windows AMIs, the private key file is required r instance. For Linux AMIs, the private key file allows you to the set of keys authorized for this instance. Learn more ublic AMI.
Proceed without a key pair	T
Choose an existing key pair	
Create a new key pair	
Proceed without a key pair	
	Cancel Launch Instances

q) Verify that the vSZ instance is running. Connect the vSZ instance with the selected key pair using the SSH interface.

Configuring AWS for a vSZ Instance

Follow these steps to configure AWS for creating and launching a vSZ instance.

Attach a New Disk Volume

Follow these steps to add a new disk volume.

1. Navigate to EC2 Dashboard > Elastic Block Store > Volumes and click Create Volume as shown.

FIGURE 120 Create Volume

EC2 Dashboard		Create Volume	Actions V	
Events	٩.			
Tags		Q Filter by tags an	nd attributes or search b	y keyword
Reports				
Limits		Name	✓ Volume ID ✓	Size •
INSTANCES			vol-33ac5ecc	100 GiB
Instances			vol-e718e22e	100 GiB
Spot Requests			vol-faa14805	100 GiB
. Reserved Instances			vol-fbdd2b32	100 GiB
IMAGES			vol-be03ec41	100 GiB
AMIs			vol-c60ae939	100 GiB
Bundle Tasks			vol-b6d73449	100 GiB
ELASTIC BLOCK STORE			vol-49e6ebb5	10 GiB
Volumes				
Snapshots				

2. Enter the required disk type, size and availability zone.

FIGURE 121 Create Volume

Туре		General Purpose (SS	SD) -	
Size (GiB)	()	100	(Min: 1 GiB, Max: 16384 G	SiB)
IOPS	(i)	300 / 3000	(Baseline of 3 IOPS per G	iB)
Availability Zone	i	ap-northeast-1a 💌		
Snapshot ID	(i)	Search (case-insensit	ive)]
Encryption		Encrypt this volu	me	

- 3. Click Create.
- 4. Right click on the newly created disk and select **Attach Volume**. Enter the instance identifier and the desired device name.

Attach Volu	me		×
Volume Instance Device	() () ()	vol-c9ca0736 in ap-northeast-1a Search instance ID or Name tag	in ap-northeast-1a
			Cancel Attach

FIGURE 122 Attach Volume

5. Click Attach.

Allocate a Public IP Address

Follow these steps to allocate a public IP address.

1. Navigate to **EC2 Dashboard > Network & Security > Elastic IPs.** Click **Allocate New Address** as shown.

FIGURE 123 Allocate New IP Address

EC2 Dashboard		Allocate New Address	Actions V
Events	•		
Tags		Q Filter by attributes or se	arch by keyword
Reports			
Limits			
INSTANCES			
Instances			
Spot Requests			
Reserved Instances			
IMAGES			
AMIs			
Bundle Tasks			
ELASTIC BLOCK STORE			
Volumes			
Snapshots			
NETWORK & SECURITY			
Security Groups			
Elastic IPs			

2. Click Create.

3. Right click on the newly created IP address and select **Associate Address**. Enter the instance identifier or network interface and the desired device name.

FIGURE 124 Associate Address

Associat	te Address			×
Select the ins	stance OR network interface to whic	h you wish to associate this IP address (54.178.1	178.186)	
	Instance	Search instance ID or Name tag		
		Or		
	Network Interface	Search network interface ID or Name tag		
	Private IP Address	Select instance or interface.	0	
		Reassociation	0	
War If yo IP at	rning ou associate an Elastic IP address w ddresses.	ith your instance, your current public IP address	is released. Learn more about public	
			Cancel Associate	

4. Click Associate.

Change Security Group

Follow these steps to change the security group.

- 1. Navigate to Instances and right click the target instance.
- 2. Select Network > Change Security Group.

3. Select the security groups.

FIGURE 125 Allocate New IP Address

Cha	nge Security Gro	oups		×
Insta	ance ID: i-6ef65ccb			
Sele	ct Security Group(s) to a	ssociate with your instance		
	Security Group ID	Name	Description	
R	sg-13064196	all-allowed	All allowed	
	sg-997739fc	default	default VPC security group	
	sg-17703e92	launch-wizard-1	launch-wizard-1 created 2015-09-10T17:54:06.009+08:0	0
	sg-e8a7fb8d	Private network	Private network	
			Cancel Assign Security Grou	ps

4. Click Assign Security Groups.

Deleting a vSZ Instance

Follow these steps to delete a vSZ instance on AWS.

1. Navigate to Instances and right click to select the vSZ instance that you want to delete.

2. Select Instance State > Terminate.

FIGURE 126 Select terminate

Connect		
Get Windows Password		
Launch More Like This		
Instance State	×	Start
Instance Settings		Stop
Image		Reboot
Networking		Terminate
CloudWatch Monitoring	•	

3. Confirm deletion of the vSZ instance by clicking on **Yes, Terminate**. The vSZ instance is deleted from AWS.

FIGURE 127 Confirm termination of vSZ instance

Terminate Instances × Warning A On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost. Are you sure you want to terminate these instances? i-0f9b6bab (vsz-3.4-310) Yes, Terminate Cancel

Configuring the Virtual Machine Interfaces

•	Configuring the Virtual Machine Interfaces	141
•	Setting Up the vSZ with One Interface	.141
•	Setting Up the vSZ with Three Interfaces	.153
•	Important Notes About Selecting the System Default Gateway	.156

Configuring the Virtual Machine Interfaces

The vSZ comes with the option to operate with either one (1) network interface or three (3) network interfaces. Therefore the procedure for setting up the vSZ interface depends on the number of interfaces that it has.

Follow the procedure below that corresponds to the number of interfaces that the vSZ you are installing has:

- Setting Up the vSZ with One Interface on page 141
- Setting Up the vSZ with Three Interfaces on page 153

NOTE

By default, the VMWare ESXi package comes with three network interfaces. If you want to deploy the vSZ with only one interface, you can edit the virtual machine settings to remove the extra interfaces. The KVM package, on the other hand, comes with a single interface. If you want to deploy the vSZ with three interfaces, edit the virtual machine settings to create two additional interfaces.

Setting Up the vSZ with One Interface

Follow these steps to set up the vSZ with a single network interface

- 1. Log on to the console using; User name: admin Password: admin
- 2. At the **vSZ**> prompt, enter **en** to enable privileged mode.

3. At the **Password** prompt, enter **admin**. The **vSZ#** prompt appears.

FIGURE 128 At the vSZ> prompt, enter setup

######################################	######################################	**** * ****				
Welcome to the Version: 5.0.0	Ruckus Virtual .0.661	l SmartZone	Command	Line	Interface	
vSZ> en Password: ****	×					
vsz# _						

- 4. Enter **setup**. The console displays the current network settings (if any), and then displays the following prompt: **Do you** want to setup network? [YES/no]
- 5. Enter **YES**. The next screen prompts you to select the profile configuration that you want to use for this instance of vSZ. The options include: **(1) High-Scale (2) Essentials**

6. Enter the number that corresponds to the profile configuration that you want to deploy.

If you selected Essentials and the virtual machine has insufficient memory resources available (for example, the VM has only 8GB of RAM when the minimum RAM requirement is 12GB), you will be unable to continue with the setup process.

FIGURE 129 Enter the number that corresponds to the profile that you want to deploy

```
Password:
Please wait. CLI initializing...
Velcome to the Ruckus Virtual SmartZone Command Line Interface
Jersion: 5.0.0.0.661
vSZ≻ en
Password: *****
vSZ# setup
Start vSZ setup process:
******
vSZ Profile
1. Essentials
2. High Scale
Enter "i" for more information.
Select vSZ Profile (1/2): 2
WARNING! You cannot change the vSZ profile once you complete setup. Are you sure
you want to install the "High Scale" profile? (y/n)[Y]
```

7. Enter **Y** for confirmation. At the **IP Version Support** prompt, enter one of the following options: **1: IPv4 Only 2: IPv4** and **IPv6**.

FIGURE 130 Configure the IP address settings of the single interface

```
∨SZ# setup
Start vSZ setup process:
vSZ Profile
1. Essentials
2. High Scale
Enter "i" for more information.
*******
Select vSZ Profile (1/2): 2
<code>WARNING!</code> You cannot change the vSZ profile once you complete setup. Are you sure
you want to install the "High Scale" profile? (y/n)[Y] y
Network is not setup.
IP Version Support
1. IPv4 only
2. IPv4 and IPv6
*****
Select address type: (1/2)
```
8. The **IPv4 address setup for Control, Cluster, Management** option appears. At the **Select IP configuration** prompt, enter **1** for Manual and **2** for DHCP.

FIGURE 131 Configure the IP version setup

```
1. Essentials
2. High Scale
Enter "i" for more information.
**********
Select vSZ Profile (1/2): 2
<code>WARNING! You</code> cannot change the vSZ profile once you complete setup. Are you sure
you want to install the "High Scale" profile? (y/n)[Y] y
Network is not setup.
IP Version Support
1. IPv4 only
2. IPv4 and IPv6
Select address type: (1/2) 1
IPv4 address setup for Control,Cluster,Management
1. Manual
2. DHCP
Select IP configuration: (1/2)
```

- 9. At the **Primary DNS Server** prompt, enter the primary DNS server on the network.
- 10. At the **Secondary DNS Server** prompt, enter the secondary DNS server (if any) on the network.

11. Enter **y** to apply settings.

FIGURE 132 Apply Settings

IP Version Support Settings: IP Version Support : IPv4 only Interface IPv4 settings: Control,Cluster,Management: IP Type : DHCP : 192.168.30.136 IP Address Netmask : 255.255.255.0 : 192.168.30.1 Gateway DNS Server Settings: Primary DNS Server : 8.8.8.8 Secondary DNS Server : 8.8.4.4 Enter 'y' to apply, 'n' to modify Do you want to apply the settings? (y/n) y Please wait while sytem configures the network. It may take a few minutes...

12. To accept settings enter **y**. Else, enter **n**

FIGURE 133 Accept Settings

```
Current Network Settings (After Applying)
IP Version Support Settings:
IP Version Support : IPv4 only
Interface IPv4 settings:
Control,Cluster,Management:
IP Type
          : DHCP
         : 192.168.30.136
: 255.255.255.0
IP Address
Netmask
          : 192.168.30.1
Gateway
******
DNS Server Settings:
Primary DNS Server : 8.8.8.8
Secondary DNS Server : 8.8.4.4
Enter 'y' to accept, 'n' to modify
Accept these settings and continue? (y/n) y_
```

13. To setup a network, enter **y**. Else, enter **n**.

FIGURE 134 Network Setup

**********************	***********************
Start vSZ setup process	s :

Current Network Setting	ls
******	*****************
IP Version Support Set	tings:
******	****
IP Version Support :	IPv4 only
Interface IPv4 settings	s :
*******************	******************
Control,Cluster,Manager	nent:
*******************	******************
IP Type :	DHCP
IP Address :	192.168.30.136
Netmask :	255.255.255.0
Gateway :	192.168.30.1
*******************	*******************
DNS Server Settings:	
*******************	*******************
Primary DNS Server :	8.8.8.8
Secondary DNS Server :	8.8.4.4
******************	*******************
Do you want to setup ne	etwork? (y/n) n

14. Choose the option for cluster setup. Enter **c** to create a new cluster or **j** to join an existing cluster.

FIGURE 135 Cluster Setup

IP Туре	: DHCP
IP Address	: 192.168.30.136
Netmask	: 255.255.255.0
Gateway	: 192.168.30.1
******	********************
DNS Server Settin	ngs:
*************	************************
Primary DNS Serve	er : 8.8.8.8
Secondary DNS Sei	rver : 8.8.4.4
********	*********************
Do you want to se	etup network? (y∕n) n
(C)reate a new c	luster or (J)oin an exist cluster (c∕j): c
Cluster Name (clu	uster name can contain letters (a-z, A-Z), numbers (0-9), and da
shes (-)): Ruckus	s-cluster-1
Controller Descr	iption: vSZ-H-1
*****	********************
Create/Join	: create
DISCOVERY PROTOCO	DL: tcp
Cluster Name	: Ruckus-cluster-1
Blade ID	: 8df2de6d-836d-4654-a496-7cd1ac6dd979
DESCRIPTION	: vSZ-H-1
******	**********************
Are these correct	t (y/n):

- 15. Enter the following information:
 - Cluster Name
 - Controller Description
 - Create/Join cluster
 - DISCOVERY PROTOCOL
 - Cluster Name
 - Blade ID
 - DESCRIPTION

16. When the prompt **Are these correct? (y/n)** appears, enter **y** to confirm the cluster setup. Enter the controller name of the blade and enter **y** to specify if the controller is behind NAT. Else, enter **n**.

FIGURE 136 Configure Cluster Setup

```
Primary DNS Server
                 : 8.8.8.8
Secondary DNS Server : 8.8.4.4
Do you want to setup network? (y/n) n
(C)reate a new cluster or (J)oin an exist cluster (c/j): c
Cluster Name (cluster name can contain letters (a-z, A-Z), numbers (0-9), and da
shes (-)): Ruckus-cluster-1
Controller Description: vSZ-H-1
***********
Create/Join
              : create
DISCOVERY PROTOCOL: tcp
Cluster Name : Ruckus-cluster-1
Blade ID
              : 8df2de6d-836d-4654-a496-7cd1ac6dd979
               : vSZ-H-1
DESCRIPTION
*****
Are these correct (y∕n): y
Enter the controller name of the blade ([a-zA-Z0-9-]): vSZ-H-1
Is this controller behind NAT? (y/n) n
System UTC Time: 2018-05-30 01:59:10 UTC
NTP Server ([a-zA-Z0-9.-]): [ntp.ruckuswireless.com]
Check if NTP server [ntp.ruckuswireless.com] is reachable...
System time after synchronization: 2018-05-30 01:59:16 UTC
```

17. To Convert ZoneDirector APs in factory settings to vSZ APs to vSZ APs automatically, enter **y**, else enter **n**.

FIGURE 137 Converting Factory Settings to vSZ Settingsl

```
shes (-)): Ruckus-cluster-1
Controller Description: vSZ-H-1
Create/Join
                 : create
Create/Join
DISCOVERY PROTOCOL: tcp
Cluster Name : Ruckus-cluster-1
Cluster Name : Ruckus-cluster-1
Blade ID
                 : 8df2de6d-836d-4654-a496-7cd1ac6dd979
DESCRIPTION
                 : vSZ-H-1
*******
Are these correct (y/n): y
Enter the controller name of the blade ([a-zA-Z0-9-]): vSZ-H-1
Is this controller behind NAT? (y/n) n
System UTC Time: 2018-05-30 01:59:10 UTC
NTP Server ([a-zA-Z0-9.-]): [ntp.ruckuswireless.com]
Check if NTP server [ntp.ruckuswireless.com] is reachable...
System time after synchronization: 2018-05-30 01:59:16 UTC
Convert ZoneDirector APs in factory settings to vSZ APs automatically (y/n) [N]
Convert ZoneDirector APs in factory settings to vSZ APs automatically (y/n) [N]
Reset admin's password!
Enter admin password:
Enter admin password again:
Enter the CLI enable command password:
Enter the CLI enable command password again:
```

18. In Reset admin's password, press <Enter>.

- 19. Enter the following information:
 - Enter the admin password
 - Enter the admin password again
 - Enter the CLI enable command password
 - Enter the CLI enable command password again

The password reset confirmation appears and starts setup process.

FIGURE 138 Admin Password Reset

```
Create/Join
                : create
DISCOVERY PROTOCOL: tcp
Cluster Name
              : Ruckus-cluster-1
                : 8df2de6d-836d-4654-a496-7cd1ac6dd979
Blade ID
DESCRIPTION
                : vSZ-H-1
Are these correct (y/n): y
Enter the controller name of the blade ([a-zA-Z0-9-]): vSZ-H-1
Is this controller behind NAT? (y/n) n
System UTC Time: 2018-05-30 01:59:10 UTC
NTP Server ([a-zA-Z0-9.-]): [ntp.ruckuswireless.com]
Check if NTP server [ntp.ruckuswireless.com] is reachable...
System time after synchronization: 2018-05-30 01:59:16 UTC
Convert ZoneDirector APs in factory settings to vSZ APs automatically (y/n) [N]
Convert ZoneDirector APs in factory settings to vSZ APs automatically (y/n) [N]
Reset admin's password!
Enter admin password:
Enter admin password again:
Enter the CLI enable command password:
Enter the CLI enable command password again:
Reset admin's password done!
Setup configurations done. Starting setup process after 5 seconds...
```

20. The setup process begins.

FIGURE 139 Setup Process Begins

```
System time after synchronization: 2018–05–30 01:59:16 UTC
Convert ZoneDirector APs in factory settings to vSZ APs automatically (y/n) [N]
Convert ZoneDirector APs in factory settings to vSZ APs automatically (y/n) [N]
Reset admin's password!
Enter admin password:
Enter admin password again:
Enter the CLI enable command password:
Enter the CLI enable command password again:
Reset admin's password done!
Setup configurations done. Starting setup process after 5 seconds...
/etc/init.d/snmpd restart
New hostname: vSZ-H-1
Change admin password done!
Check installation status
Wait for cluster config operation start!
Bootstrapping, Wed May 30 02:00:33 UTC 2018
Blade Channel Opened, Wed May 30 02:00:36 UTC 2018
```

You have completed configuring the vSZ interfaces. You are now ready to run the vSZ Setup Wizard. See Using the Setup Wizard to Install vSZ.

Setting Up the vSZ with Three Interfaces

- 1. Log on to the console using the following credentials: **User name: admin Password: admin**
- 2. At the **vSZ**> prompt, enter **en** to enable privileged mode.
- 3. At the **Password** prompt, enter **admin**. The **vSZ#** prompt appears.

4. Enter **setup**. The console displays the current network settings (if any), and then displays the prompt: **Do you want to setup network? [YES/no]**

FIGURE 140 At the vSZ> prompt, enter setup



- 5. At the **Select IP configuration** prompt, enter **1** to set up the *control interface* manually.
 - a) Configure the IP address, netmask, and gateway of the control interface, and the press **<Enter>**. The IP address configuration that you entered appears.
 - a) When the message Are these correct? appears, enter y to confirm the IP address configuration.

FIGURE 141 Configure the IP address settings of the control interface



- 6. At the **Select IP configuration** prompt, enter **1** to set up the cluster interface manually.
 - a) Configure the IP address, netmask, and gateway of the *cluster interface*, and then press **<Enter>**. The IP address configuration that you entered appears.
 - b) When the message **Are these correct?** appears, enter **y** to confirm the IP address configuration.
- 7. At the Select IP configuration prompt, enter 1 to set up the management interface manually.
 - a) Configure the IP address, netmask, and gateway of the management interface, and the press **<Enter>**. The IP address configuration that you entered appears.

Take note of the IP address that you assign to the management interface – you will use this IP address to log on to the vSZ web interface.

b) When the message **Are these correct?** appears, enter **y** to confirm the IP address configuration.

 When the message Select system default gateway (Control, Cluster, Management)?, enter Control or Management, depending on your network topology (see Important Notes About Selecting the System Default Gateway on page 156).

This entry is case-sensitive. Make sure you enter the system default gateway exactly as shown at the prompt.

FIGURE 142 When prompted for the system default gateway, enter either Management or Control (depending on your network design)



- 9. When prompted, enter the primary and secondary DNS server IP addresses.
- 10. Enter restart network.

You have completed configuring the vSZ interfaces. You are now ready to run the vSZ Setup Wizard. See Using the Setup Wizard to Install vSZ on page 157.

Important Notes About Selecting the System Default Gateway

Depending on your network topology, you may select either the Management or Control interface as the system default gateway.

- If all of the managed APs are located in different locations on the Internet, the vSZ may not know all of the IP subnets of these APs. In this case, the control interface should be set as the default gateway for the vSZ and you will need to add a static route to reach the management network.
- If all of the managed APs belong to a single subnet or to multiple subnets on which you can set the route statically, then you can set the management interface as the default gateway users can set default gateway for the vSZ and set static routes for the vSZ to reach all of its managed APs.

Using the Setup Wizard to Install vSZ

	150
Step 1: Start the Setup Wizard and Set the Language	158
• Step 2: Select the Profile Configuration That Corresponds to Your vSZ License	158
Step 3: Configure the Management IP Address Settings	160
Step 4: Configure Dual Mode IP Address Settings Using CLI	
Step 5: Configure the Cluster Settings	
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• Step 7: Verify the Settings	174
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Before You Begin

The Setup Wizard helps you perform the initial configuration of the vSZ by presenting the vSZ configuration options in a set of easy-to-complete screens.

The Setup Wizard will prompt you to select one of the two available profile configurations (High-Scale profile and Essentials profile). You must select the profile configuration that corresponds to the vSZ license that you purchased. Before you start the Setup Wizard, make sure you know the profile configuration that you need to select. If you are unsure which profile configuration you need to select, contact Ruckus Networks Support.

Follow these steps to run and complete the vSZ Setup Wizard:

- Start the Setup Wizard and Set the Language
- Select the Profile Configuration That Corresponds to Your vSZ License
- Configure the Management IP Address Settings
- Configure Dual Mode IP Address Settings Using CLI
- Configure the Cluster Settings
- Set the Administrator Password
- Verify the Settings

NOTE

This guide describes the Setup Wizard screens that appear when you select the High-Scale profile configuration. If you select the Essentials profile configuration, the screens that appear may be slightly different.

Step 1: Start the Setup Wizard and Set the Language

1. Start your web browser, and then enter the following in the address bar: https://{management-IP-address}:8443, where management-IP-address is the address you assigned to the management interface. The vSZ Setup Wizard appears, displaying the Language page.

FIGURE 143 The Language page

Ruckus™ Virtual SmartZone	Setup Wizard - Virtual SmartZone version: 5.0.0.0.661
Language	Language
Profile	Welcome to the Ruckus Virtual SmartZone Setup Wizard. Use this wizard to prepare wireless controller to run your wireless network. To start, select the display language that you want to use on the Web interface.
Management IP Address	Language English •
Cluster Information	
Administrator	Next
Confirmation	
Configuration	

- 2. Select your preferred language for the vSZ web interface. Available options include:
 - English
 - Traditional Chinese
 - Simplified Chinese
- 3. Click Next. The Profile page appears.

Step 2: Select the Profile Configuration That Corresponds to Your vSZ License

- 1. Select the profile configuration that corresponds to the vSZ license that you purchased. Available profile configurations include:
 - High Scale
 - Essentials

2. Click **Next**. The Confirmation message appears. Once you accept the confirmation, the **Management IP** page appears.

FIGURE 144 Select a profile configuration that matches your vSZ license

Ruckus™ Virtual SmartZone	Setup Wizard - Virtual SmartZone
Language	Profile
Profile	Please select profile configuration.
	Profile [High Scale •
Management IP Address	High-Scale
Cluster Information	The right state updetaing proteins beginged to very usergeneration environs. In our each conclusion more react supports of provide and motivation target and target and the state and an appropriation of the state and appropriation of the s
Administrator	Essentials
Confirmation	The Costination Operating ground is obsequently former to response the cost of
Configuration	determine the recommended system resources to run in Essentials mode.

Back Next

Step 3: Configure the Management IP Address Settings

The vSZ comes in either a single network interface or three network interfaces (one interface each for Control (AP), Cluster, and Management (Web) traffic). The following procedure assumes that the vSZ you are installing uses a single network interface.

If the vSZ that you are installing comes with three network interfaces, you must configure each of the three interfaces to be on three different subnets. Failure to do so may result in loss of access to the web interface or failure of system functions and services.

1. In *IP Version* Support, select one of the following options:

IPv4 Only: Click this option if you want the controller to obtain an IPv4 address from a DHCP server on the network.

IPv4 and IPv6: Click this option if you want the controller to obtain both IPv4 and IPv6 addresses from DHCP and DHCPv6 servers on the network. Refer to Step 4: Configure Dual Mode IP Address Settings Using CLI for configuring dual setup using CLI. This is an alternative method for configuring IPv4 and IPv6 manually if the DHCP server is not available on the network.

FIGURE 145 Select the IP version support

Ruckus™ Virtual smartZone	Setup Wizard - Virtual SmartZone
Language	Management IP
Profile	Select how you want the Virtual SmartZone to obtain its IPv4 (and IPv6, if supported on your network) IP address settings. To obtain an IP address automatically using DHCP, click "DHCP" for IPv4 or "Auto Configuration" for IPv6. To specify an IP address, click "Static" and then type the IP address settings in "IP Address," "Netmask," and "Gateway." An asterisk (*) indicates required information.
Management IP Address	IP Version Support PV4 and IPv6
Cluster Information	Control(AP)/Cluster/Management(Web)
Administrator	■ Static © DHCP
Confirmation	IP Address * 192.168.30.188 Netmask * 255.255.255.0
Configuration	Gateway* 192.168.30.1
	Default Gateway* Control(AP)/Cluster/M * Primary DNS Server 8.8.8.8 Secondary DNS Server 8.8.4.4

Next

- 2. Configure the IP address settings of the Control (AP/DataPlane) interface.
 - a) Under the **IPv4** section, click **Static**, and then enter the network settings that you want to assign to the AP/ DataPlane interface, through which client traffic and configuration data are sent and received.

Although it is possible to use DHCP to assign IP address settings to the Control interface automatically, Ruckus Networks strongly recommends assigning a static IP address to this interface. The following network settings are required (others are optional):

- IP address
- Netmask
- Gateway
- a) If you clicked IPv4 and IPv6 at the beginning of this procedure, under the IPv6 section, click Auto Configuration if you want the controller to obtain its IP address from Router Advertisements (RAs) or from a DHCPv6 server on the network. If you want to manually assign the IPv6 network address, click Static, and then set the values for the following: IP address (IPv6): Enter an IPv6 address (global only) with a prefix length (for example, 1234::5678:0:C12/123). Link-local addresses are unsupported.Gateway: Enter an IPv6 address (global or link-local) without a prefix length. Here are examples:

Global address without a prefix length: 1234::5678:0:C12

Link-local address without a prefix length: fe80::5678:0:C12

- At the bottom of the screen, select the interface that you want to set as the default system gateways for IPv4 and IPv6 (if enabled), and then type the **Default Gateway**, **Primary DNS Server** address and **Secondary DNS Server** Address.
 The appropriate interface to use as the default system gateway depends on the topology of your network. See Important Notes About Selecting the System Default Gateway on page 156 for more information.
- 4. Check the network settings that you have configured.
- 5. Click the **Next** to continue. The controller validates and applies the network settings that you have configured. Continue to Step 5: Configure the Cluster Settings on page 171

Important Notes About Selecting the System Default Gateway

Depending on your network topology, you may select either the Management or Control interface as the system default gateway.

- If all of the managed APs are located in different locations on the Internet, the vSZ may not know all of the IP subnets of these APs. In this case, the control interface should be set as the default gateway for the vSZ and you will need to add a static route to reach the management network.
- If all of the managed APs belong to a single subnet or to multiple subnets on which you can set the route statically, then you can set the management interface as the default gateway users can set default gateway for the vSZ and set static routes for the vSZ to reach all of its managed APs.

Step 4: Configure Dual Mode IP Address Settings Using CLI

The following are the steps to configure the dual setup using CLI. This is an alternative method of configuring IPv4 and IPv6 manually if the DHCP server is not available on the network.

- 1. Using CLI execute the setup command: vSZ# setup
- 2. In vSZ Profile, choose either 1. Essentials or 2. High Scale.

3. In IP Version Support, choose 2. IPv4 and IPv6.

FIGURE 146 Choose 2. IPv4 and IPv6 to use dual mode IP addresses

vSZ# setup

Start vSZ setup process:

vSZ Profile

1. Essentials
2. High Scale

Select vSZ Profile (1/2): 1
Current network settings:
Network not setup!

IP Version Support

1. IPv4 only
2. IPv4 and IPv6

Select address type: (1/2) _

- 4. Configure the IPv4 address settings that you want to assign to the AP/DataPlane interface, through which client traffic and configuration data are sent and received.
 - a) Enter the setup for **Control** as either:
 - 1. Manual
 - 2. DHCP
 - b) Enter the IP configuration as 2 (DHCP).
 - c) Enter following network settings as required:
 - IP address
 - Netmask
 - Default gateway
 - d) Save the networking configuration of **Control** settings.



- e) Enter the setup for Cluster as either: 1. Manual 2. DHCP
- f) Enter the IP configuration as 1 (Manual)
- g) Enter following network settings as required: IP address, Netmask, and Default gateway
- h) Save the networking configuration of **Cluster** settings.

FIGURE 148 IPv4 Cluster Settings



- i) Enter the setup for Management as either: 1. Manual 2. DHCP
- j) Enter the IP configuration as **2** (DHCP)
- k) Enter following network settings as required:
 - IP Address
 - Netmask
 - Gateway

I) Save the networking configuration of **Management** settings

FIGURE 149 IPv4 Management Settings IPv4 address setup for Management ****************** 1. MANUAL 2. DHCP Select IP configuration (1/2): 2 Management: IP Address : 172.19.10.2 Netmask : 255.255.0.0 Gateway : 172.19.10.254 Are these correct (y/n): y Execute networking configuration of Management! Save networking configuration of Management!

The available gateway for Control, Cluster and Management will be displayed. You can select the system default gateway.

FIGURE 150 Default Gateway Settings

******	****************
Available Gateway:	*****
Control Cluster Management	: 182.21.160.65You : 182.21.160.85 : 172.19.10.254
Select system default Primary DNS: 4.2.2.2 Secondary DNS: Control NAT IP:	gateway (Control, Cluster, Management)? Control

5. If the controller is behind a NAT server, add the control NAT server IP address, and then hit Enter.

FIGURE 151 NAT server IP address

Control NAT IP:						
Network would be restar	ted. You	could com	nect to vSZ	back by	using Management	po
rt (10.20.110.8)!!						
Enter "restart network"	or press	Enter to	continue	. restarr	t network	

6. Configure the IPv6 address settings that you want to assign to the AP/Data Plane interface, through which client traffic and configuration data are sent and received.

NOTE

The cluster interface setting does not support IPv6 addresses.

- a) Enter the setup for Control as either: 1. Manual 2. Auto Configuration
- b) Enter the IP configuration as **1** (Manual).
- c) Enter following network settings as required:
 - IPv6 Address
 - Gateway
- d) Save the networking configuration of **Control** settings.

FIGURE 152 IPv6 Control Settings

IPv6 address setup for Control 1. MANUAL 2. AUTO CONFIGURATION Select IP configuration: (1/2) 1 IPv6 Address: 3000:2:1:1::1/64 Gateway: 3000:2:1:1::254 ******* Control: : 3000:2:1:1::1/64 IP Address Gateway : 3000:2:1:1::254 ************* Are these correct (y/n): y Execute networking configuration of Control! Save networking configuration of Control!

- e) Enter the setup for Management as either: 1. Manual2. Auto Configuration
- f) Enter the IP configuration as **1** (Manual)
- g) Enter following network settings as required: IP addressDefault gateway
- h) Save the networking configuration of **Management** settings.

FIGURE 153 IPv6 Management Settings

IPv6 address setup for Management

1. MANUAL 2. AUTO CONFIGURATION

Select IP configuration: (1/2) 1 IPv6 Address: 3000:2:1:1::2/64 Gateway: 3000:2:1:1::254

Management:

IP Address	: 3000:2:1:1::2/64
Gateway	: 3000:2:1:1::254
**********	******

Are these correct (y/n): y Execute networking configuration of Management! Save networking configuration of Management!

The available gateway for Control and Management will be displayed. You can select the system default gateway.

FIGURE 154 Default Gateway Settings

Available Gateway:	
Control : 3000:2:1:1::254 Management : 3000:2:1:1::254	
Select system default gateway (Control, Management)? Control Primary DNS: 3000:2:1:1::254 Secondary DNS: Network would be restarted. You could connect to SCG back by using Management port (172.19.10.2 or 3000:2:1:1::2)!! Enter "restart network" or press Enter to continue restart network	

7. Enter "restart network".

X

8. Go back to the controller's web interface, and then go to **System** > **Cluster** > **Control Planes**. Then, expand the node, select the Cluster plane, and click **Configure**.

The Edit Control Plane Network Settings page appears.

FIGURE 155 Control Plane Network Settings

Edit Control Plane Network Settings

his page lists the networ	configuration settings of the selected control plane. You can modify the interface settings, northbound control interface settings, or manually configure the st	atic routes.
Physical Interfaces	Static Routes	
- Control/Cluster/M	nagement Interface	
* IP Mod	: O Static DHCP	
* IP Addre		
* Subnet Ma		
Gatewa		
Control NAT		
Default Catavay I		
- IPv4 Default Gateway a	uns	
* Default (iteway: Control/Cluster/Manag	
Primary DN	Server: 8.8.8.8	
Secondary DN	Server: 8.8.4.4	
	(or) and the second sec	Cancel

- 9. Verify that the Control Plane network settings display the IPv4 and IPv6 addresses that you configured.
- 10. Continue to Step 5: Configure the Cluster Settings on page 171

Step 5: Configure the Cluster Settings

The next step is to configure the vSZ cluster settings. The actions that you need to perform in this step depend on whether you are creating a new cluster (with this vSZ as the first node) or you are setting up this vSZ to join an existing cluster.

- If This vSZ Is Forming a New Cluster on page 172
- If This vSZ Is Joining an Existing Cluster on page 172

FIGURE 156 The Cluster Information page, showing the New Cluster option

Ruckus™ Virtual smartZone	Setup Wizard - Virtual SmartZone
Language	Cluster Information
Profile	vSZ Cluster Setting: New Cluster Cluster Name: Ruckus-vSZ-H-Cluster
Management IP Address	Controller Name: VSZ-H-1
Cluster Information	Controller Description: VSZ-H-VSZ-H-1
Administrator	Default Country Code: United States NTP Server: ntp.ruckuswireless.com
Confirmation	AP Conversion 📄 Convert ZoneDirector APs in factory settings to Virtual SmartZone APs automatically
Configuration	Is this controller behind NAT?

If This vSZ Is Forming a New Cluster

Follow these steps if you want to use this vSZ to create a new cluster.

On the **Cluster Information** page, configure the following settings:

- 1. In vSZ Cluster Setting, select New Cluster.
- 2. In **Cluster Name**, type a name for the new cluster that you are creating.

NOTE

The **Cluster Name** and **Controller Name** boxes only accept alphanumeric characters, hyphens (-), and underscores (_). They do not accept the space character or other special characters (for example, \$, *, #, !).

Next

Back

- 3. In **Controller Name**, type a name for the vSZ controller in this new cluster.
- 4. In **Controller Description**, type a brief description for the vSZ controller.
- 5. In **Default Country Code**, select the country.
- 6. In **NTP Server**, type the address of the NTP server from which members of the cluster will obtain and synchronize time. The default NTP server is**ntp.ruckuswireless.com**
- 7. If you want ZoneDirector APs that are in factory default settings to be converted to SmartZone APs automatically, select the **AP Conversion** check box.
- 8. If the controller is behind NAT, select the check box and enter the Controller NAT IP.
- 9. Click **Next** to continue to the **Administrator** page.

If This vSZ Is Joining an Existing Cluster

If this is not the first vSZ cluster on the network, you can set up this vSZ virtual appliance to join an existing cluster.

A vSZ cluster supports a maximum of four nodes. If you are building a vSZ-E cluster with more than two nodes, two (2) additional cores must be added to each node to support the added search and replication capabilities.

NOTE

To add this vSZ to an existing cluster, the entire target cluster must be in a healthy state (no node must be in "out of service" state). If any member node is out of service, the join request will fail. You will need to remove any out-of-service node from the cluster before you can add a new node successfully.

Follow these steps to configure this to join an existing cluster.

- 1. In vSZ Cluster Setting, select Join Existing Cluster.
- 2. In **Cluster Name**, type the name of the cluster that this vSZ is joining.

The **Cluster Name** and **Controller Name** boxes only accept alphanumeric characters, hyphens (-), and underscores (_). They do not accept the space character or other special characters (for example, \$, *, #, !).

- 3. In **Controller Name (optional)**, type a name that you want to assign to this new controller.
- 4. In **Controller Description**, type a description for this new controller.
- 5. In Join Exist vSZ Cluster IP, type the IP address of the leader in the existing cluster.
- 6. In Admin Password, type the administrator password to the web interface of the leader node.
- 7. Click Next to continue to the Administrator page. See Step 6: Set the Administrator Password on page 173.

FIGURE 157 The Cluster Information page, showing the Join Existing Cluster option

∏ Ruckus™ Virtual SmertZone		Setup Wizard - Virtual SmartZone		
Language	Cluster Information			
Profile	vSZ Cluster Setting: Join Existing Cluster Cluster Name:			
Management IP Address	Controller Name:			
Cluster Information	Controller Description:			
Administrator	Join Exist vSZ Cluster IP: Admin Password:*			
Confirmation				
Configuration				
			Next Back	

If the firmware version on this vSZ (shown in the bottom-left area of the **Cluster Information** page) does not match the firmware version of the cluster, a message appears and prompts you to upgrade the vSZ firmware. Click **Upgrade**, and then follow the prompts to perform the upgrade.

Step 6: Set the Administrator Password

Set the administrator passwords for the web interface and command line interface (CLI).

Follow these steps to set the web interface and CLI passwords.

NOTE

The web interface and CLI passwords must be at least eight (8) characters in length and must include one number, one letter, and one special character (for example, \$, *, #, !).

- 1. In Admin Pasword, type a password that you want to use to access the web interface.
- 2. In **Confirm Password**, retype the password above to confirm.
- 3. In **Enable Password**, type a password that you want to use to enable CLI access to the vSZ.
- 4. In **Confirm Password**, retype the password above to confirm.
- 5. Click **Next** to continue. The **Confirmation** page appears and displays all the controller settings that you have configured using the Setup Wizard.

FIGURE 158 Set the web interface and CLI passwords

Ruckus™ Virtual SmartZone	Setup Wizard - Virtual SmartZone
Language	Administrator
Profile	Enter Admin's password and password that permits administrative access to the Web interface. (Use this information to log into the Web interface after this setup is complete, to further configure your new vriteless network.)
Management IP Address	Admin Password * Confirm Password *
Cluster Information	Enter CLI enable password and password that provides advance command Enable Password *
Administrator	Confirm Password *
Confirmation	
Configuration	Next Back

Step 7: Verify the Settings

After you complete setting the web interface and CLI passwords, check the **Confirmation** page and review all of the controller settings that you have configured using the Setup Wizard.

Follow these steps to verify the controller settings that you have configured.

1. Verify that all the settings displayed on the **Confirmation** page are correct.

2. If they are all correct, click **Finish** to apply the settings and activate the controller on the network.

FIGURE 159 The Confirmation page

Ruckus™ Virtual SmartZone	Setup Wizard - Virtual SmartZone	sion: 5.0.0.0.661
Language	Confirmation	
Profile	Please review the following settings. If changes need to be made, click Back to edit your settings. If the settings are ready for use, click Finish. Profile Type High Scale	
Management IP Address	Cluster Name Ruckus-v52-H-Cluster Protocol Type TCP Menamment III. Constant (2017) Cluster (Neuropeanet Middle): House 192, 198, 20, 188	
Cluster Information	Default Country Control (exp / classer / management (1+e), - manag	
Administrator	System Time Your current system time is (2018-05-31 09:17:27 Epoch : 1527729447) * After completing the setup wizard, please check the Ruckus Wireless Support Web site for the latest software updates.	
	Restore from Config Backup: Choose File No file chosen	
Configuration		

NOTE

If you find an incorrect setting, click the **Back** button until you reach the related page, and then edit the settings. When you finish editing the settings, click the **Next** button until you reach the **Confirmation** page again.

Finish

Back

A progress bar appears and displays the progress of applying the settings, starting the vSZ services, and activating the vSZ on the network.

When the process is complete, the progress bar shows the message 100% Done. The page also shows the IP address through which you can access the vSZ web interface to manage the controller.

FIGURE 160 Setup is complete when the progress bar shows "100% Done"

rickus™ Virtual SmartZone	Setup Wizard - Virtual SmartZone version: 5.0.0.6	561
Language	Configuration	
Profile	The SmartZone is being configured. It may take up to 20 minutes to complete the setup process. Stretch your legs, grab some coffee, and if you changed the IP address during setup, don't forget to update the browser's URL.	
Management IP Address	20% Blade Channel Opened 3	
Cluster Information	WARNING Please do not power off, reboot, disconnect, start another installation from a cluster member or change the IP address of any of the cluster members during the setup process. This will cause the initial setup to fail and you will have to start the setup process from the beginning.	
Administrator		
Confirmation		
Configuration		

Congratulations! You have completed the Setup Wizard. You are now ready to log on to the web interface. Go to **https:// {management-IP-adddress}:8443**, and then log on with the user name and password that you assigned to the web interface.

Logging On to the Web Interface

You can access the web interface from any computer that is on the same subnet as the management (web) interface. Follow these steps to log on to the vSZ web interface.

- 1. On a computer that is on the same subnet as the Management (Web) interface, start a web browser.
- 2. In the address bar, enter the IP address that you assigned to the Management (Web) interface and append a colon and 8443 (vSZ management port number) at the end of the address. The vSZ web interface logon page appears.

If the IP address that you assigned to the Management (Web) interface is 10.10.101.1, then you should enter:

https://10.10.101.1:8443

The vSZ logon page appears.

FIGURE 161 The vSZ logon page

Ruckus Wireless		
	Virtual SmartZone - High Scale	
	username	
	password	

- 3. In User Name, type admin.
- 4. In **Password**, type the administrator password that you assigned to the web interface earlier.
- 5. Click **Log On**. The web interface refreshes, and then displays the vSZ dashboard page, which indicates that you have logged on successfully.

You are now ready to configure the controller. For information on how to configure the controller, refer to the **Administrator Guide** for the controller platform that you have installed.

Deployment of vSZ

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Deploy vSZ on ESXi Server

Hardware Requirement and Prerequisite for ESXi Server

The following are the hardware and prerequisite for deploying vSZ on ESXi 5.0

Hardware Requirement

- 1. DELL Inc. PowerEdge R530
- 2. ESXi Server License 6.5
- 3. Broadcom NetXtreme BCM5720 Gigabit Ethernet 4 Ports
- 4. Intel Ethernet 10G 2P X520
- 5. CPU minimum 8 cores
- 6. vSphere ESXi Server 6.7 or later
- 7. 1 or 3 vNICs
- 8. 16 GB memory
- 9. 256 GB Hard disk

Prerequisite

- A hypervisor on ESXi to install vSZ. Recommended version is ESXi 6.7 and later.
- Download the vSZ package (.OVA file) from Ruckus support .
- The IP addresses, netmask, gateway, DNS, DHCP and NAT support for vSZ.
- Ensure that the vSZ license that you have, is a high-capacity mode or an essential mode.
- Ensure the number of physical network interfaces. Choose the interface group, 3 or 1, that would be used implement for vSZ. vSZ-E mode supports only 1 interface group. vSZ-H mode supports both 3 and 1 interface groups.
- Before you power on vSZ, ensure that the networking is configured on ESXi.
- Recommended to use static network addresses that are assigned to vSZ during setup.

NOTE

Due to different servers and NIC, the deployment procedure mentioned in this section is for reference.

Topology for vSZ Deployment on ESXi 5.0 Server

The network topologies for vSZ deployment on ESXi 5.0 server.

The following are basic topologies for setting up vSZ. Based on your requirement you can choose any of the alternatives for deployment.

• High-Scale mode with three group interfaces.

FIGURE 162 vSZ-H with Three Group Interfaces



• Essentials mode with one group interface.



FIGURE 163 Example 1: vSZ-E with one Group Interface

FIGURE 164 Example 2: vSZ-E with one Group Interface



Deployment Procedure on the ESXi Server

The following are basic instructions for setting up vSZ on the ESXi server.
VMware ESXi 6.7 is installed and working.

1. Login to the server through vSphere client tool as seen below.

FIGURE 165 Login to vSphere

💋 VMware vSphere Client	
vmware VMware vSphere Client	
All vSphere features int only through the vSph continue to operate, su	roduced in vSphere 5.5 and beyond are available ere Web Client. The traditional vSphere Client will ipporting the same feature set as vSphere 5.0.
To directly manage a single h name. To manage multiple hosts, en vCenter Server.	ost, enter the IP address or host ter the IP address or name of a
IP address / Name:	172.17.65.43
User name:	root
Password:	******
	Use Windows session credentials Login Close

The vSphere Client management page appears as shown in the following figure.

FIGURE 166 vSphere Client management page



2. Navigate to **Configuration** > **Network Adapters**. Ensure the physical ports are linked to the correct port speed as seen below.

FIGURE 167 Define network adapters

Network Adap	ters						
Device		Speed	Configured	Switch	MAC Address	Observed IP ranges	Wake on LAN Sup
Broadcom Cor	poration NetXt	reme BC	M5720 Gigabi	t Ethernet			
🖶 vmnic3 (Cluster	1000	1000 Full	vSwitch3	18:66:da:7c:c	None	No
vmnic2	1	Down	Negotiate	None	18:66:da:7c:c	None	No
👦 vmnic1 (Control	1000	1000 Full	vSwitch1	18:66:da:7c:c	10.10.0.1-10.10.2552	No
🖬 vmnic0 👔	Management	1000	1000 Full	vSwitch0	18:66:da:7c:c	172.17.65.98-172.17	No
Intel(R) Ether	net 10G 2P X52	20 Adapt	er				
vmnic5	1	Down	Negotiate	None	a0:36:9f:98:4_	None	No
🛤 vmnio4 🕻	Data	10000	Negotiate	vSwitch2	a0:36:9f:98:4	10.10.0.1-10.10.255.2	No

 Create each vSphere standard switch (vSwitch) using the physical network adapters since vSZ requires three interfaces for management, cluster, and control. Navigate to **Configuration** > **Networking** > **Add Networking**. Select the option **Virtual Machine** to choose the connection type.

FIGURE 168 Define connection type

Connection Type Network Access Connection Settings Summery	Connection Types
	Vetual Hachine Add a labeled network to handle vitual machine network traffic. Veturenet The VMermet TCN/IP stack handles traffic for the following ESN services: vSphere vMotion, IBCSI, NFS, and host management.

- 4. Click Next.
- 5. Select the Network Adapter from the list and click **Next**.

6. Enter the **Network Label** and click **Next** as shown in the following figure.

FIGURE 169 Define the Network Adapter

Add Network Wizard				
Virtual Machines - Co Use network labe	onnection Settings is to identify migration com	patible connections common to	two or more hosts.	
Connection Type Instructs, Account Connection Settings Summary	Port Group Properties Network Label: VLAN ID (Optional):	TEST None (1)	•	
	Preview: Vinual Hactine Port Gr TEST	200 £ Physical Laborary 2		
				< Back Next > Cancel

- 7. Click Finish.
- 8. View the created vSwitch as seen below.

FIGURE 170 View created vSwtich

Standard Switch: vSwitch4	Remove Properti	es
Virtual Machine Port Group	Physical Adapters	
🖵 TEST 🛛 👤 🕂	🔸 🗶 💷 vmnic2	₽.

Example

9. Repeat step 3 to step 6 to create three vSwitch for vSZ. View the created vSwitch as seen below.

NOTE

Manual Colores Chandred Cuitch

vSZ management interface is associated to the Control-IP-Domain.

FIGURE 171 View vSwitch for management and data interfaces

witch: vSwitch0	Remove Properties
Machine Port Group	- Physical Adapters
ement-Interface	👱 🕂 🔹 💷 vmnic0 1000 Full 🖓
al machine(s) VLAN	ID: All (4095)
O-vsz-5.0.0.0.356	@+
iel Port	
ement Network	<u>9</u> +
: 172.17.65.43	
1111:2222:3333::994	kc 🔰
1a66:daff:fe7c:c0b7	
O-vdp-5.0.0.0.356 O-vsz-5.0.0.0.356	00+ 00+
witch: vSwitch2	Remove Properties
Witch: vSwitch2 Machine Port Group	Remove Properties
witch: vSwitch2 Machine Port Group nterface	Remove Properties Physical Adapters Physical Adapters Physical Adapters Physical Adapters
witch: vSwitch2 Machine Port Group nterface al machine(s) VLAN	Remove Properties Physical Adapters ID: All (4095)
	Machine Port Group ement-Interface al machine(s) VLAN IO-vsz-5.0.0.0.356 nel Port ement Network : 172.17.65.43 1111:2222:3333::994 1a66:daff:fe7c:c0b7 Switch: vSwitch1 Machine Port Group J-Interface al machine(s) VLAN IO-vdp-5.0.0.0.356 IO-vsz-5.0.0.356

- 10. Download the vSZ (.ova file) from the Ruckus Website.
- 11. Click File > Deploy OVF Template.

The Deploy OVF Template form appears.

12. Click **Browse** to select the source location to install the OVF package as shown in the following figure.

FIGURE 172 Deploy the file

Deploy OVF Template	
Source Select the source loc	160n.
Source OVF Templete Details Name and Locaton Dek Format Ready to Complete	Deploy from a fle or URI. Cytocode Report/vS2/vscp-5.0.0.3/9.org Tetra a URL to downibad and install the OVF package from the Internet, or specify a location accessible from your computer, such as a local hand drive, a network share, or a CD/DVD drive.
	< Back Next > Cancel

13. Click Next.

14. Enter the vSZ datastore name and choose the disk format as seen below.

FIGURE 173 Choose the disk f	format
------------------------------	--------

🖉 Deploy OVF Templat	e					X
Disk Format In which format de	o you want to store the vi	itual disks?				
Source OAT Template Details End User Loome Agree Name and Location Debu K Format Network Hagphig Ready to Complete	Datastore: Available space (GB): ⁽⁴⁾ Thick Provision Lazy ⁽²⁾ Thick Provision ⁽²⁾ Thin Provision	datastore1 1663.8 r Zeroed rr Zeroed				
x >						
			< Back	Next >	Cance	

15. Click **Next** and wait for deploying.

16. From the vSphere client, select **Edit Settings** to change network interface settings for vSZ-H and vSZ-E as shown in the following figure.

FIGURE 174 Edit Settings



17. By default, vSZ supports three network interfaces as shown in the figure.

FIGURE 175 vSZ-H Mode Running Three Interfaces

Edit settings - vSZ_1 (ESXi 5.0 virtual machine)						
Virtual Hardware VM Options						
🔜 Add hard disk 🛛 🎫 Add network adapter 🛛 🚍 Add other device						
CPU	8 🔻 🚺					
Memory	24576 MB v					
► → Hard disk 1	300 GB •		8			
SCSI Controller 0	LSI Logic SAS	T	8			
Network Adapter 1	Control	▼ Connect	8			
Network Adapter 2	VM Network	▼ Connect	۲			
Network Adapter 3	VM Network	 Connect 	Sh			
▶ ↓ Video Card	Specify custom settings	¥				

Save Cancel

NOTE

If your vSZ is running as Essential mode, select two interfaces and click the 🕸 **Remove** button.

Connect to vSZ Using CLI on ESXi Server

Follow the below procedures to connect to vSZ.

Open a CLI console window to run the deployed vSZ.

FIGURE 176 Run vSZ on the console



1. At the login prompt, login using **administrator** credentials of username and password. Run the **setup** command to initialize vSZ as shown in the figure below.

FIGURE 177 Login and Privileged mode



- 2. Enter **2** for High-Scale mode and press **Y** to continue.
- 3. Enter static IP address for control interface as shown in the figure below.

FIGURE 178 Static IP Address for Control Interface

4. Enter static IP address for cluster interface as shown in the figure below.

FIGURE 179 Static IP Address for Cluster Interface



5. Enter static IP address for management interface as shown in the figure below.

FIGURE 180 Static IP Address for Management Interface



6. Select the default gateway interface. Enter **1** for control interface, **2** for cluster interface, and **3** for management interface as shown in the figure below.

FIGURE 181 Default Gateway Interface



7. Enter the DNS server setting and press **Y** to apply all setting.

FIGURE 182 DNS Server Settings

8. Access the web link http://172.17.65.234:8443 to continue other setting as shown in the figure below.

FIGURE 183 vSZ Web UI

n Ruckus"	Setup Wizard - Virtual SmartZone
Language Profile Management IP Address	Cluster Information v52 Cluster Setting: New Cluster Cluster Name: Controller Name:
Cluster Information	Centreller Description: Default Country Code: United States MTP Server: stp.ruckusv-troless.com
Confirmation Configuration	AP Conversion Convert ZoneOlivector APs in fact Codering network internation, it and size a tea minutes.
	Next Back

9. Enter your **Cluster Information** and click **Next** as shown in the following figure.

FIGURE 184 Cluster	Information
--------------------	-------------

Cluster Information	n
vSZ Cluster Setting:	New Cluster *
Cluster Name:	Example
Controller Name:	vSZ-EXample
Controller Description:	vS2-EXample
Default Country Code:	Taiwan •
NTP Server:	ntp.ruckusv/reless.com
AP Conversion	
	Is this controller behind NAT?
	Next Back

10. Enter your vSZ Administrator password requirements and click **Next** as shown in the following figure.

Administrator
Enter Admin's password and password that permits administrative access to the Web Interface. (Use this Information to log into the Web Interface after this setup is complete, to further configure your new vineless network.)
Admin Password *
Enter CLI enable password and password that provides advance command Enable Password * Confirm Password *

11. Click **Finish** and wait until vSZ is configured.

FIGURE 186 vSZ Configuration

FIGURE 185 vSZ Administrator Password

12. After vSZ is configured, reconnect to vSZ web as shown in the following figure.

Configuration	
The SmartZone is being configured. It may take up to 20 minutes to complete the browser's URL.	setup process. Stretch your legs, grab some coffee, and if you changed the IP address during setup, don't forget to update the
100%	
Done Reconnect to the SmartZone's web interface https://172.17.65.234(8443/vsg/	

Back

Next

13. Enter **Username** and **Password** to access vSZ as shown in the following figure.

FIGURE 187 vSZ Homepage



Deploy vSZ on Linux Server

Hardware Requirement and Prerequisite for LINUX CentOS 7

The following are the hardware and prerequisite for deploying vSZ on LINUX CentOS 7.

Hardware Requirement

- 1. DELL Inc. PowerEdge R320
- 2. Linux CentOS 7
- 3. Broadcom NetXtreme BCM5720 Gigabit Ethernet 2 Ports
- 4. Intel Ethernet 10G 2P X520

Prerequisite

- A Linux host enabled KVM which to install vSZ VM. Prefer CentOS 7 and later.
- Download the vSZ package (.qcow2 file) from Ruckus support .
- The IP addresses, netmask, gateway, DNS, DHCP and NAT support for vSZ.
- Ensure if the vSZ license that you have, is a high-capacity mode or an essential mode.
- 1Ensure the number of physical network interfaces. Choose the interface group, 3 or 1, that would be used implement for vSZ. vSZ-E mode supports only 1 interface group. vSZ-H mode supports both 3 and 1 interface groups.
- Before you power on vSZ, ensure that the networking is configured on LINUX.
- Recommended to use static network addresses that are assigned to vSZ during setup.
- Using CentOS 7, install KVM package with the **yum** command.

root@localhost ruckusvnc]# yum -y install qemu-kvm qemu-img virt-manager virt-viewer virt-install
libvirt libvirt-phthon libvirt-client

• Ensure KVM is active and running the following command.

[root@localhost ruckusvnc]# systemctl status libvirtd

• Edit the following commands and file.

```
sudo yum install grub2-common
gedit /etc/default/grub
GRUB_TIMEOUT=5
GRUB_DISTRIBUTOR="$(sed 's, release .*$,,g' /etc/system-release)"
GRUB_DEFAULT=saved
GRUB_DISABLE_SUBMENU=true
GRUB_TERMINAL_OUTPUT="console"
GRUB_CMDLINE_LINUX="crashkernel=auto rd.lvm.lv=centos/root rd.lvm.lv=centos/swap rhgb quiet
intel_iommu=on"
GRUB_DISABLE_RECOVERY="true"
```

sudo grub2-mkconfig -o /boot/grub2/grub.cfg

• Reboot Linux host.

NOTE

Due to different servers and NIC, the deployment procedure mentioned in this section is for reference.

Topology for vSZ Deployment on LINUX CentOS7

The network topologies for vSZ deployment on LINUX CentOS 7.

The following are basic topologies for setting up vSZ. Based on your requirement you can choose any of the alternatives for deployment.

• High-Scale mode with three group interfaces.



FIGURE 188 vSZ-H with Three Group Interfaces

• Essentials mode with one group interface.



FIGURE 189 Example 1: vSZ-E with one Group Interface

FIGURE 190 Example 2: vSZ-E with one Group Interface



Deployment Procedure on the LINUX Server

The following are basic instructions for setting up vSZ on LINUX KVM.

LINUX CentOS 7 KVM Package is installed and working.

- 1. Download vSZ package (.qcow2 file) from Ruckus website.
- 2. From VNC Viewer, click **System Tools** and open the **Virtual Machine Manager** tool. The vSZ status must appear Running as shown in the following figure.

FIGURE 191 Virtual Machine Manager

Applications Places Vientual Machine Manager Favorites Application Installer	Thu 16:01 🗖 📢 🕻
Favorites Application Installer	
	Virtual Machine Manager – D. X.
Accessories Boxes	File Edit View Help
Documentation Settings	🔛 🚍 Open ⊳ 💷 💿 👻
Internet 🚑 Software	Name CPU usage CPU usage
Office Software Update	Running
Sound & Video Sundry Electrons Startup Applications	
System Tools D System Log	
Utilities System Monitor	
Virtual Machine Manager	
Activities Overview	

Deployment of vSZ Deploy vSZ on Linux Server

- 3. Create a new VM.
 - a) Click File and select New Virtual Machine as shown in the following figure.

FIGURE 192 Creating a Virtual Machine

	Virtual Machin	e Manag	jer	- 1	×
File Edit View H	Help				
Add Connection		-			
New Virtual Mach	ine			CBU	
Close	Ctrl+W		*	CPO usage	
Quit	Ctrl+Q				~~
Running					J

b) In the New VM dialog box, choose the disk format option as shown in the following figure.

FIGURE 193 Disk Format

New VM
Create a new virtual machine Step 1 of 4
Connection: QEMU/KVM
Choose how you would like to install the operating system
 Local install media (ISO image or CDROM)
 Network Install (HTTP, FTP, or NFS)
Network Boot (PXE)
• Import existing disk image
Cancel Back Forward

c) Click Forward.

d) Choose destination storage path and storage volume. Click **Browse Local** as show in the following figure.

FIGURE 194 Storage Volume

			Choose Storage	Volun	ne			×
22% 0%	default Filesystem Directory Downloads Filesystem Directory	Size: Location: Volumes	38.50 GiB Free / 11 /var/lib/libvirt/imag	48 G es	iB In Use		5	
		Volumes		~	Size	Format	Used By	
		ubuntu16	5.04.qcow2		15.00 GiB	qcow2	ubuntu16.04	
÷					Browse L	ocal Car	Choose Volu	me

e) Select the vSZ file and click **Open** as shown in the following figure.

FIGURE 195 vSZ File

172.17.65.44:590	1 (ocahost.localdomain:1 (ruckusmc)) - VNC Viewer		- 0	ı x	_
Applications PL	aces Virtual Machine Manager	Mon 3	16-28• A	40 C	*
Cancel	Name Story 5:0000 372 gcow2	۹	Open		
			€2		
Documents	Name	Size	Modified		
↓ Downloads	🖹 ubuntu: 16.04-desktop-amd64.iso	1.5 GB 950.0 MB	15 Jan 15:41		
d Music	📔 vscg-5.0.0.376 qcew2	2.7 GB	15:41		
Pictures					
H Videos					
+ Other Locations					

f) To select the storage path, click **Browse** as shown in the following figure.

FIGURE 196 Storage Path

	New VM	×
Cree Step	ate a new virtual machine	
Provide the	existing storage path:	
/home/n	uckusvnc/Downloads/vscg-5.0.0.0 Browse	
Choose an o	perating system type and version	
OS type:	Generic 🔹	
Version:	Generic 👻	
	Cancel Back Forward	1

- g) Click Forward.
- h) Enter the **Memory (RAM)** and **CPUs** setting as shown in the following figure.

NOTE

Memory (RAM) must be 15GB and CPUs must be 4 cores.

FIGURE 197 Memory and CPU Settings

New VM	×
Create a new virtual machine Step 3 of 4	
Choose Memory and CPU settings	
Memory (RAM): 15360 - + MiB	
Up to 16338 MiB available on the host	
CPUs: 4 – +	
Up to 12 available	
Cancel Back Forwar	ď

i) Click Forward.

j) To confirm the installation process, click **Finish** as shown in the following figure.

NOTE

The sequence for Network interfaces must first be Management and the Data.

FIGURE 198 Installation Confirmation

		New VM	×			
D	Crea Step	ate a new virtual machine 4 of 4				
Rea	ady to be	gin the installation				
	Name:	vSZ-example				
	OS:	Generic				
	Install:	Import existing OS image				
Ν	lemory:	15360 MiB				
	CPUs:	4				
5	Storage:	c/Downloads/vscg-5.0.0.0.376.qcow2				
		Customize configuration before install				
Network selection						
		Cancel Back Finish				

4. From the VNC Viewer, click **Add Hardware**, select the NIC and choose the **Device model** to update the Control, Cluster and Management interface associate as shown in the following figures.

NOTE

vSZ needs three interfaces; Control, Cluster, and Management.

NOTE

For Essential mode, you need not add two NICs.

FIGURE 199 Control Interface

		vSZ-example on QEMU/KVM	-		×
File	Virtual Machine View	Send Key			
=	8 0	o • 10			¢
	Overview	Virtual Network Interface Control IP Domain			
44	Performance	Network source: Host device p2p1: macvtap 👻			
	CPUs				
-	Memory	Source mode: Bridge			
30	Boot Options	In most configurations, macvtap does not work for host to guest astwork communication			
	VirtIO Disk 1	Tor most to guest network communication.			
9	NIC :33:40:75	Device model: e1000			
2	NIC :2f:fe:00	MAC address: 52:54:00:33:40:75			
2	NIC :bc:35:e0	Virtual port			
ð	Mouse				
÷	Keyboard				
-	Display VNC				
	Sound: ich6				
2	Serial 1				
2	Channel spice				
-	Video VGA				
	Controller USB				
	Controller PCI				
	Controller VirtIO Serial				
1	LICO De dissettes 1				
	Add Hardware	Remove Cancel	1	hpply	

FIGURE 200 Cluster Interface

		vSZ-example on QEMU/KVM	-	۰	×
File	Virtual Machine Vie	ew Send Key			
۲	8 0	o - 🖏			¢
	Overview	Virtual Network Interface Cluster IP Domain			
44	Performance	Network source: Host device em2: macvtap 💌			
	CPUs				
-	Memory	Source mode: Bridge			
35	Boot Options	In most configurations, macvtap does not work			
	VirtIO Disk 1	for most to great network communication.			
1	NIC :33:40:75	Device model: e1000			
9	NIC :2f:fe:00	MAC address: 52:54:00:2f:fe:00			
	NIC :bc:35:e0	Virtual port			
2	Mouse				
÷	Keyboard				
	Display VNC				
	Sound: ich6				
2	Serial 1				
	Channel spice				
2	Video VGA				
	Controller USB				
	Controller PCI				
	Controller VirtIO Seri	fial			
Ab.	HIPP Dedicester 1				
	Add Hardware	Remove Cancel	A	pply	

FIGURE 201 Management Interface

		vSZ-example on QEMU/KVM	-		×
File	Virtual Machine View	Send Key			
۲	8 0	c • 🖫			¢
	Overview	Virtual Network Interface Management IP Domain			
44	Performance	Network source: Host device eml: macvtap 👻			
	CPUs				
-	Memory	Source mode: Bridge			
39	Boot Options	In most configurations, macvtap does not work for boat to quest patwork communication			
	VirtIO Disk 1				
	NIC :33:40:75	Device model: e1000			
	NIC :2f:fe:00	MAC address: 52:54:00:bc:35:e0			
9	NIC :bc:35:e0	➤ Virtual port			
Ò	Mouse	,			
÷	Keyboard				
	Display VNC				
	Sound: ich6				
	Serial 1				
	Channel spice				
	Video VGA				
	Controller USB				
	Controller PCI				
	Controller VirtIO Serial				
	LIPP De directer 1				
	Add Hardware	Remove Cancel		pply	

5. Define the CPU Configuration. Select the **Copy host CPU configuration** check box as shown in the following figure.

FIGURE 202 CPU Configuration

		vSZ-6	ixampl	le on G	EMU	/KVM		×
1	Begin Installation	🐰 Cancel Installation						
	Overview	CPUs						
	CPUs	Logical host CPUs:	12					
-	Memory	Current allocation:	4	-	+			
39	Boot Options							
	IDE Disk 1	Maximum allocation:	4		+			
	NIC :33:40:75	Configuration						
2	NIC :2f:fe:00	Copy host CPU cor	nfigura	tion				
	NIC :bc:35:e0	▶ Topology						
Ò	Mouse	, i opology						
-	Display Spice							
	Sound: ich6							
	Console							
	Channel spice							
2	Video QXL							
	Controller USB							
1	USB Redirector 1							
1	USB Redirector 2							
	Add Hardware						Cancel	Apply

6. Define the IDE Disk Configuration. Choose the **Disk bus** option as shown in the following figure.

FIGURE 203 IDE Disk Configuration

	vSZ-example on QEMU/KVM	×
🥑 Begin Installation	X Cancel Installation	
Overview CPUs Memory Boot Options IDE Disk 1 INIC : 33:40:75 NIC : 27:fe:00 NIC : 27:fe:00 NIC : 25:35:e0 Mouse Display Spice Sound: ich6 Console Video QXL Controller USB USB Redirector 1 USB Redirector 2	Virtual Disk Source path: /home/ruckusvnc/Downloads/vscg-5.0.0.0.376.qcow? Device type: IDE Disk 1 Storage size: 100.00 GiB Readonly: Shareable: Disk bus: VirtIO Serial number: Storage format: qcow2 Performance options	
Add Hardware	Remove Cancel	Apply

7. Select **Begin Installation** as shown in the following figure.

		,	vSZ-example on QEMU/K	VM			×
L	Begin Installation	🤾 Cancel Installat	ion				
	Overview CPUs Memory Boot Options VirtIO Disk 1 NIC :33:40:75 NIC :2f:fe:00 NIC :bc:35:e0 Mouse Display Spice Sound: ich6 Console Channel spice Video QXL Controller USB USB Redirector 1 USB Redirector 2	Virtual Disk Source path: /hu Device type: Vii Storage size: 10 Readonly: Shareable: VAdvanced opti Disk bus: Storage format: Performance o	ome/ruckusvnc/Download tiO Disk 1 0.00 GiB) ons VirtIO qcow2 ptions	¢.	j-5.0.0.0.376.qc	:ow2	
	Add Hardware				Remove	Cancel	Apply

FIGURE 204 Begin Installation

Connect to vSZ Using CLI on LINUX Server

Follow the below procedures to connect to vSZ.

Open a CLI console window to run the deployed vSZ.

FIGURE 205 Run vSZ on the console

<pre>Ne Virual Machine View Send Key Ne Virual Machine View Send View View Send View View Send View View Send View View View Send View View View View View View View View</pre>		vSZ-example on QEMU/KVM –		×
<pre>Starting syslog-ng: [0K] Calling the system activity data collector (sadc) Starting monitoring for VG vg08: 1 logical volume(s) in volume group "vg00" monitoring intervention monitoring for VG vg08: 1 logical volume(s) in volume group "vg00" monitoring intervention [0K] Stalles: Applying firewall rules: [0K] iptables: Applying firewall rules: [0K]</pre>	File	Virtual Machine View Send Key		
<pre>Starting syslog-ng: [OK] Calling the system activity data collector (sadc) Start system Starting monitoring for VG vg00: 1 logical volume(s) in volume group "vg00" mo nitored [OK] expr: syntax error expr: syntax error expr: syntax error 0 iptables: Applying firewall rules: [OK] iptables: Applying firewall rules: [OK] Bringing up loopback interface: [OK] Bringing up loopback interface: [OK] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory grep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. [Main initialization. [Mai</pre>		8 🖻 🗉 🗶 🖷		φ.
<pre>Starting syslog-ng: [OK] Calling the system activity data collector (sadc) Start system Starting monitoring for VG vg80: 1 logical volume(s) in volume group "vg80" mo nitored [OK] expr: syntax error expr: syntax error 0 iptables: Applying firewall rules: [OK] iptables: Applying firewall rules: [OK] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory igrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory igring up interface ifcfg-eth*: Device eth* does not seem to be present, delay ing initialization. [MilLED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr.</pre>				
<pre>Starting syslog-ng: [0K] Galling the system activity data collector (sadc) Start system Starting monitoring for VG vg00: 1 logical volume(s) in volume group "vg00" mo nitored [0K] expr: syntax error expr: syntax error 0 ip6tables: Applying firewall rules: [0K] iptables: Applying firewall rules: [0K] Bringing up loopback interface: [0K] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [0K] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delay grep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delay Bringing up interface ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delay ing intialization. [Mathematication directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delay ing initialization. [Mathematication directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delay ing initialization. [Mathematication directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delay ing initialization. [Mathematication directory Bringing up interface br: Determining IP information for br"up" is invalid lladdr.</pre>				
<pre>Starting the system activity data collector (sade) Starting monitoring for VG vg88: 1 logical volume(s) in volume group "vg88" mo nitored [OK] expr: syntax error expr: syntax error 8 iptables: Applying firewall rules: [OK] iptables: Applying firewall rules: [OK] Bringing up loopback interface: [OK] Bringing up loopback interface: [OK] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delay igning initialization. [A</pre>		Starting syslog-ng: [OK]		
Starting monitoring for UG vg80: 1 logical volume(s) in volume group "vg80" mo nitored [OK] expr: syntax error expr: syntax error 8 iptables: Applying firewall rules: [OK] iptables: Applying firewall rules: [OK] Bringing up loopback interface: [OK] Bringing up loopback interface: [OK] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory grep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. [FAILED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr.		Calling the system activity data collector (sadc) Start sustem		
<pre>nitored [OK] expr: syntax error expr: syntax error 8 ip6tables: Applying firewall rules: [OK] iptables: Applying firewall rules: [OK] Bringing up loopback interface: [OK] Bringing up loopback interface: [OK] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. [FAILED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr.</pre>		Starting monitoring for VG vg88: 1 logical volume(s) in volume group "vg88"	mo	
<pre>[0K] expr: syntax error expr: syntax error 0 iptables: Applying firewall rules: [0K] iptables: Applying firewall rules: [0K] Bringing up loopback interface: [0K] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [0K] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. [FAILED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr.</pre>		nitored		
<pre>expr: syntax error expr: syntax error g ip6tables: Applying firewall rules: [OK] iptables: Applying firewall rules: [OK] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. [FAILED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr.</pre>		[OK]		
<pre>9 ip6tables: Applying firewall rules: [OK] ip6tables: Applying firewall rules: [OK] Bringing up loopback interface: [OK] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delay Wing initialization. [FollED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr.</pre>		expr: syntax error		
<pre>ip6tables: Applying firewall rules: [OK] iptables: Applying firewall rules: [OK] Bringing up loopback interface: [OK] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory grep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delaying i up interface ifcfg-eth*: No such file or directory grep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. [FALLED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr.</pre>		8		
<pre>iptables: Applying firewall rules: 1 UK 1 Bringing up loopback interface: [OK] Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory ggrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, delaying i (FALLED) Bringing up interface br: Determining IP information for br"up" is invalid lladdr.</pre>		ip6tables: Applying firewall rules: [OK]		
Bringing up interface bond: Device eth* does not seem to be present, delaying i nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. [FAILED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr.		iptables: Applying firewall rules: L UK J Bringing up loopback interface: [OK]		
nitialization. [OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory grep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. [FAILED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr.		Bringing up interface bond: Device eth* does not seem to be present, delauing		
<pre>[OK] fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory fgrep: ifcfg-ifcfg-eth*: No such file or directory egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. (FAILED) Bringing up interface br: Determining IP information for br"up" is invalid lladdr</pre>		nitialization.		
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Figrep: lifefg-ifefg-eth*: No such file or directory egrep: ifefg-ifefg-eth*: No such file or directory Bringing up interface ifefg-eth*: Device eth* does not seem to be present, dela ying initialization. [FAILED] Bringing up interface br: Determining IP information for br"up" is invalid lladdr. —		fgrep: ifcfg-ifcfg-eth*: No such file or directory		
egrep: ifcfg-ifcfg-eth*: No such file or directory Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. (FALLED) Bringing up interface br: Determining IP information for br"up" is invalid lladdr. -		fgrep: ifcfg-ifcfg-eth*: No such file or directory		
Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, dela ying initialization. (FAILED) Bringing up interface br: Determining IP information for br"up" is invalid lladdr. —		egrep: ifcfg-ifcfg-eth*: No such file or directory		
ying initialization. (FAILED) Bringing up interface br: Determining IP information for br"up" is invalid lladdr. —		Bringing up interface ifcfg-eth*: Device eth* does not seem to be present, de	la	
Bringing up interface br: Determining IP information for br"up" is invalid lladdr. —		ying initialization. (Paliph)		
Determining IP information for br"up" is invalid lladdr. -		Bringing up interface br:		
		Determining IP information for br"up" is invalid lladdr.		
		-		

1. At the login prompt, login using **administrator** credentials of username and password. Run the **setup** command to initialize vSZ as shown in the figure below.

FIGURE 206 Login and Privileged mode



- 2. Enter **2** for High-Scale mode and press **Y** to continue.
- 3. Choose IP version IPv4 only or IPv4 and IPv6. For example, press 1 for IPv4.
- 4. Enter static IP address for control interface as shown in the figure below.

FIGURE 207 Static IP Address for Control Interface

5. Enter static IP address for cluster interface as shown in the figure below.

FIGURE 208 Static IP Address for Cluster Interface



6. Enter static IP address for management interface as shown in the figure below.

FIGURE 209 Static IP Address for Management Interface



7. Select the default gateway interface. Enter **1** for control interface, **2** for cluster interface, and **3** for management interface as shown in the figure below.

FIGURE 210 Default Gateway Interface



8. Enter the DNS server setting and press **Y** to apply all setting.

FIGURE 211 DNS Server Settings

9. Access the web link http://172.17.65.234:8443 to continue other setting as shown in the figure below.

FIGURE 212 vSZ Web UI

Ruckus"	Setup Wizard - Virtual SmartZone
Language Profile	Cluster Information v52 Cluster Setting: New Cluster Cluster Name:
Management IP Address Cluster Information	Controller Name: Controller Description:
Administrator	Default Country Code: United States NTP Servers: ntp.nuckusr/reless.com AP Conversion: Convert ZoneDirector APs in fact
Configuration	is this controller behind NAT?
	Next Back

10. Enter your **Cluster Information** and click **Next** as shown in the following figure.

			*
		Example	Cluster Name:
		vSZ-EXample	Controller Name:
		vSZ-EXample	Controller Description:
]	Taiwan	Default Country Code:
		ntp.ruckusv/ireless.com	NTP Server:
ally	in factory settings to Virtual SmartZone APs automatically	Convert ZoneDirector AP	AP Conversion
ally	In factory settings to Virtual SmartZone APs automatically	ntp.ruckusvireless.com	NTP Server: AP Conversion

FIGURE 213 Cluster Information

11. Enter your vSZ Administrator password requirements and click **Next** as shown in the following figure.

Next

Back

Back

Administrator Enter Administrative access to the Web Interface. (Use this Information to log into the Web Interface after this setup is complete, to further configure your new steriless network.) Admin Password * Confirm Password * Confirm Password * Confirm Password *

Next

12. Click **Finish** and wait until vSZ is configured.

FIGURE 215 vSZ Configuration

FIGURE 214 vSZ Administrator Password

13. After vSZ is configured, reconnect to vSZ web as shown in the following figure.

Configuration	
The SmartZone is being configured. It may take up to 20 minutes to complete the setup process. Stretch your legs, grab some coffee, and if you changed the IP address during setup, don't forget to upda browser's URL.	ate the
100%	
Done Reconvect to the SmartZone's web Interface https://172.17.65.234(8443/vog/	

14. Enter **Username** and **Password** to access vSZ as shown in the following figure.

FIGURE 216 vSZ Homepage


Upgrading the Controller for Microsoft Azure, AWS, and GCE Platforms

•	Upgrading the Controller for Microsoft Azure, AWS, and GCE Platforms	217
•	Upgrading the Controller Software	.217
•	Verifying the Upgrade	. 220
•	Rolling Back to a Previous Software Version	.220

Upgrading the Controller for Microsoft Azure, AWS, and GCE Platforms

Ruckus Networks may periodically release controller software updates that contain new features, enhancements, and fixes for known issues.

These software updates may be made available on the Ruckus Networkssupport website or released through authorized channels.



CAUTION

Although the software upgrade process has been designed to preserve all controller settings, Ruckus Networks strongly recommends that you back up the controller cluster before performing an upgrade. Having a cluster backup will ensure that you can easily restore the controller system if the upgrade process fails for any reason.



CAUTION

Ruckus Networks strongly recommends that you ensure that all interface cables are intact during the upgrade procedure.



CAUTION

Ruckus Networks strongly recommends that you ensure that the power supply is not disrupted during the upgrade procedure.

NOTE

If you are managing a vSZ, you can also perform system configuration backup, restore, and upgrade from the controller command line interface.

Upgrading the Controller Software

This section outlines the procedure to upgrade the controller software for Microsoft Azure, Amazon Web Services, Google Computing Engine platforms.

Follow these steps to upgrade the controller software.



CAUTION

Ruckus Networks strongly recommends backing up the controller cluster before performing the upgrade. If the upgrade process fails for any reason, you can use the latest backup file to restore the controller cluster.

NOTE

Before starting this procedure, you should have already obtained a valid controller software upgrade file from Ruckus Networks Support or an authorized reseller.

vSZ supports APs starting version 3.4. You must first upgrade the vSZ. Only a new vSZ can handle an old vDP. During the vSZ upgrade, all tunnels will stay up except the main tunnel which moves to the vSZ.

Upgrade to 5.0 does not support data migration (statistics, events, administrator logs). Existing system and network configuration is preserved. For further clarification, Contact Ruckus support.

To Upgrade:

- 1. Copy the software upgrade file that you received from Ruckus Networks to the computer where you are accessing the controller web interface or to any location on the network that is accessible from the web interface.
- 2. Go to Administration > Upgrade.
- 3. In the **Upload** section, click the **Browse** button, and then browse to the location of the software upgrade file.

Typically, the file name of the software upgrade file is scg-installer_{version}.ximg.

Select the **Run Pre-Upgrade Validations** check box to verify if the data migration was successful. This option allows you to verify data migration errors before performing the upgrade. If data migration was unsuccessful, the following error is displayed: Exception occurred during the validation of data migration. Please apply the system configuration backup and contact system administrator.

FIGURE 217 Click Browse in the Upload section to upload the software upgrade file

Dashboard	Upgrade History DP Patch AP Patch	
System 🕨	Current System Information	T
Access Points	Controller Version 3.5.0.0.597	
Wireless LANs	Control Plane Software Version 3.5.0.0.424 AP Firmware Version 3.5.0.99.1063	
Clients ►	Upload	
Applications	C Run Pre-Upgrade Validations()It will take a few minutes to check if the system has sufficient resources to complete the upgrade)	
Services & Profiles 🛛 🕨	Upload the patch file (".simg) that you want to use to upgrade the controller. Browse	
Report ►	2. Upload	
Troubleshooting	Patch for Pending Upgrade	
Administration v		
Admins and Roles		
Backup & Restore		
Upgrade		

- 4. Select the software upgrade file, and then click **Open**.
- 5. Click **Upload** to upload the software upgrade file. The controller uploads the file to its database, and then performs file verification. After the file is verified, the **Upgrade Pending Patch Information** section is populated with information about the upgrade file.

- 6. Start the upgrade process by clicking one of the following buttons:
 - **Upgrade**: Click this button to start the upgrade process without backing up the current controller cluster or its system configuration.
 - **Backup & Upgrade**: Click this button to back up the controller cluster and system configuration before performing the upgrade.



Ruckus Networks strongly recommends using Backup & Upgrade when performing the upgrade. If the upgrade process fails for any reason, you can use the latest backup file to restore the controller cluster.

A confirmation message appears.

7. Click Yes.

The controller starts the process that you selected. The screens that appear next will depend on the process that you selected to upgrade immediately or to back up and then upgrade the controller.

FIGURE 218 The System Upgrade page displays the status of the upgrade process

L [RUCI	kus v	irtual Smart	tZone - High Scale
System is perfo	orming cluster of	peration, pleas	se wait
Current Cluster (Operation: B	ackupAndUpgra	ıde
D 64-4	26	W completed	
Progress status:	30	5% completed	
		111111	
Node	Progress		Message
Node VSCG34	Progress 36% comple	eted 1	Message Taking a snapshot of the system
Node VSCG34	Progress 36% comple	eted	Message Taking a snapshot of the system
Node VSCG34	Progress 36% comple	eted	Message Taking a snapshot of the system
Node VSCG34	Progress 36% comple	eted	Message Taking a snapshot of the system
Node VSCG34	Progress 36% comple	eted	Message Taking a snapshot of the system

When the upgrade (or backup-and-upgrade) process is complete, the controller logs you off the web interface automatically. Wait for a few minutes until the web interface log on page appears.

FIGURE 219 The controller web interface may display the following message as it completes the upgrade process

SCG server is down or the remote server is unreachable due to network problems. System is trying to reconnect SCG server.Please wait...

When the controller logon page appears again, you have completed upgrading the controller.

Continue to the Verifying the Upgrade task to check if the upgrade was completed successfully.

Verifying the Upgrade

Follow these steps to verify that the controller upgrade was completed successfully.

- 1. Log on to the controller web interface.
- 2. Go to Administration > Upgrade.
- 3. In the **Current System Information** section, check the value for Controller Version.

If the firmware version is newer than the firmware version that controller was using before you started the upgrade process, then the upgrade process was completed successfully.

NOTE

APs periodically send scheduled configuration requests to the controller, including the firmware version. Therefore, when an AP joins a zone for the first time, the firmware version is verified by the controller. If the firmware version is different from that which is configured for the zone, the controller responds with a request to upgrade it, after which the AP initiates a request to upgrade the firmware using HTTP.

FIGURE 220 Check the value for Controller Version

Dashboard	Upgrade History DP Patch AP Patch	
System 🕨	Current System Information	T
Access Points	Controller Version 3.5.0.0.597	
Wireless LANs	Control Plane Software Version 3.5.0.0.42.4 AP Ferminare Version 3.5.0.99.1063	
Clients 🕨	Upload	T
Applications	☑ Run Pie-Upgrade Validations(it will take a few minutes to check if the system has sufficient resources to complete the upgrade)	
Services & Profiles 🕨	Upload the patch me ("simp) that you want to use to upgrade the controller. Browse	
Report ►		
Troubleshooting	Patch for Pending Upgrade	
Administration v		
Admins and Roles		
Backup & Restore		
Upgrade		

Rolling Back to a Previous Software Version

There are two scenarios in which you may want to roll back the controller software to a previous version:

- 1. You encounter issues during the software upgrade process and the controller cannot be upgraded successfully. In this scenario, you can only perform the software rollback from the **CLI** using the restore local command. If you have a two-node controller cluster, run the restore local command on each of the nodes to restore them to the previous software before attempting to upgrade them again.
- 2. You prefer a previous software version to the newer version to which you have upgraded successfully. For example, you feel that the controller does not operate normally after you upgraded to the newer version and you want to restore the previous software version, which was more stable. In this scenario, you can perform the software rollback either from

the web interface or the **CLI**. If you have a two-node controller cluster, you must have cluster backup on both of the nodes.

To ensure that you will be able to roll back to a previous version, Ruckus Networks strongly recommends the following before attempting to upgrade the controller software:

- Always back up the controller before attempting a software upgrade. If you are managing a multi-node cluster, back up the entire cluster, and then verify that the backup process completes successfully. See Creating a Cluster Backup on page 221 for more information.
- If you have an FTP server, back up the entire cluster and upload the backup files from all the nodes in a cluster to a remote FTP server.

Backing Up and Restoring Clusters

Back up the controller cluster periodically to ensure that you can restore the control plane, data plane, and AP firmware versions as well as the system configuration in the cluster if is a system failure occurs.

This section covers the following topics:

NOTE

You can also perform these procedures from the vSZ command line interface. Note, however, that you will need to execute the commands on each node.

Creating a Cluster Backup

Follow these steps to back up an entire controller cluster.

1. Take note of the current system time.

To view the current system time, go to **System > General Settings > Time**.

- 2. Go to Administration > Backup & Restore.
- 3. Click Backup Entire Cluster.

The following confirmation message appears: Are you sure you want to back up the cluster?

4. Click Yes.

The following message appears: The cluster is in maintenance mode. Please wait a few minutes.

When the cluster backup process is complete, a new entry appears in the **Cluster Backups** section with a Created On value that is approximate to the time when you started the cluster backup process.

NOTE

If you have an FTP server, back up the entire cluster and upload the backup files from all the nodes in a cluster to a remote FTP server.

You have completed backing up the controller cluster.

FIGURE 221 A new entry appears in the Cluster Backups section

uster Configuration			
Cluster Backup and Re	estore		$\overline{\mathbf{v}}$
Back up the cluster regula versions (control planes ar Back Up Entire Clus	arly to ensure that it can be recovere nd AP firmware), configuration, and c ster	easily if a serious error occurs. Ruckus Wireless also recommends backing up the cluster before upgrading the controller's software. A cluster backup includes the controller's O uster database.	S, firmware
Cluster Backups Histo	ry		$\overline{\mathbf{v}}$
C Refresh 🕼 Rest	ore 📋 Delete		
Patch Version	Created On	File Size	¢
3.5.0.0.597	2017/03/22 08:54:21	1.168	
		1 total records	

Restoring a Cluster Backup

When restoring a cluster backup, remember that you must perform the restore procedure on the exact same node which you generated the cluster backup.

Follow these steps to restore a cluster backup

- 1. Go to Administration > Backup & Restore.
- 2. In the **Cluster Backups History** section, locate the cluster backup that you want to restore.
- 3. Select the backup file that you want to restore, and then click **Restore**.

FIGURE 222 Select the backup file, and then click Restore

Cluster	Configuration			
Cluste	r Backup and Restore			$\mathbf{\nabla}$
Back u version	p the cluster regularly to ens s (control planes and AP firm	ure that it can be recovered ware), configuration, and clu	easily if a serious error occurs. Ruckus Wireless also recommends backing up the cluster before upgrading the controller's software. A cluster backup includes the controller's OS, fi ster database.	irmware
63 8	ack Up Entire Cluster			
Cluste	r Backups History			W
2	Refresh 🕼 Restore 📋	Delete		
Patch	1 Version	Created On	File Size	٥
3.5.0	.0.597	2017/03/22 08:54:21	1.1GB	
			1 total records	1 >

4. The following confirmation message appears: Are you sure you want to restore the cluster?. Click Yes.

FIGURE 223 Confirm Restore

Confirma	ation 🗢
2	Are you sure you want to restore the cluster?
	Yes No

The page refreshes, and then the following message appears: System is restoring! Please wait...

NOTE

The cluster restore process may take several minutes to complete.

When the restore process is complete, the controller logs you off the web interface automatically. Do not refresh the controller web interface while the restore process is in progress. Wait for the restore process to complete successfully.

5. Log back on to the controller web interface.

NOTE

If the web interface displays the message Cluster is out of service. Please try again in a few minutes. appears after you log on to the controller web interface, wait for about three minutes. The dashboard will appear shortly. The message appears because the controller is still initializing its processes.

- 6. Go to **Administration** > **Upgrade**, and then check the **Current System Information** section and verify that all nodes in the cluster have been restored to the previous version and are all in service.
- 7. Go to **Diagnostics** > **Application Logs**.
- 8. Check the **Health Status** column and verify that all of the controller processes are online.

You have completed restoring the cluster backup. After the upgrade is complete, go to the **Application Logs** page and verify that all of the controller processes are online.

FIGURE 224 On the Application Logs page, verify that all controller processes are online

Application Lo	ogs		
* Select Control Plane: vSZH35N	AM-C		
Application Logs & Status			
🛛 Refresh 🛓 Download Logs	L Download	All Logs 🛓 Dow	rnload Snapshot Logs
Application Name	Health Status	Log Level	# of Logs
AP Diagnostic Information			0
CaptivePortal	Online	WARN	7
Cassandra	Online		7
CNR	Online	WARN	1
Configurer	Online	WARN	15
Core	Online	WARN	19
DBlade			0
Diagnostics			0
EAut	Online	WARN	3
ElasticSearch	Online		4
LogMgr	Online	WARN	2
MdProxy	Online	WARN	1
Memcached	Online		1
MemProxy	Online	WARN	1
Mosquitto	Online		4
MsgDist	Online	WARN	1
NC	Online	WARN	11
NginX	Online		3
Observer	Online	WARN	1

Restoring a Cluster Backup Using the CLI

Follow these steps to restore a cluster backup using the CLI.

- 1. Enter the vSZ CLI.
- 2. Enter the following command and enter the password to log into the CLI.

```
VSCG35> en
Password:
```

3. Enter the following command to restore a cluster backup:

VSCG35> restore

All the cluster backups are listed in an order of the cluster backup created date.

4. Specify the number mentioned against the cluster backup that you wish to restore.

You have restored the cluster backup.

FIGURE 225 Cluster Backup Restore Using CLI

Welcome Version:	to the Ruckus Virtual SmartZon 3.4.0.0.855	e - High Scale Command Line In	terface
VSCG34> Password	en d: ******		
VSCG34# config	restore local network		
VSCG34# No.	restore Created on	Patch Version	File Size
1 2 3	2016-04-25 12:37:27 GMT 2016-06-01 04:14:55 GMT 2016-06-06 04:09:34 GMT	3.4.0.0.677 3.4.0.0.704 3.4.0.0.838	1.76B 999MB 16B
Please c Please m This act	choose a backup to restore or 'I make sure the restore backup ve tion will reboot the system. Do	No' to cancel: 2 rsion available in all nodes in you want to restore whole clus	n the cluster, otherwise restore process will fail ster system (or input 'no' to cancel)? [yes/no] yes

Deleting a Cluster Backup

Follow these steps to delete a cluster backup.

- 1. Go to Administration > Backup & Restore.
- 2. In the **Cluster Backups History** section of the **Cluster** tab, locate the cluster backup that you want to delete, and then click it.

The cluster backup becomes highlighted, which indicates that you have selected it.

2				
3.	10	-		1
		m	Delete	
	·	-	Delece	
	Click			۶.

A confirmation message appears.

FIGURE 226 After you click the Delete button, a confirmation message appears

Back Up Entire Cluster					
uster Backups History			\sim	×	
🛛 Refresh 🔷 Restore	Delete		(?)		
		File Size	Are you sure you want to delete the selected		
		1.1GB	resource?		
					1 total records

4. Click Yes.

The page refreshes, and then the cluster backup that you deleted disappears from the **Cluster Backups History** section.

You have completed deleting a cluster backup.



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