

Deployment Guide

RUCKUS WAN Gateway – Virtual Machine Installation

June 2023

Rev. 1



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Changes in Revision 1

- Added note about setting VLAN ID 4095 for the RWG LAN port group.
- Added slide about where to get the RWG .ISO images.
- Added slide about the Resource Calculator.
- Added slides around using Asset Manager to generate licenses.
- Minor changes on the slides text.

Intended Audience

This document provides an overview of how to configure a RUCKUS product for Virtual Machine Installation on a Hypervisor virtualization platform. Step-by-step procedures for configuration are demonstrated. Some knowledge of the VMWare Hypervisor is recommended.

This document is written for and intended for use by technical engineers with background in Wi-Fi design and 802.11/wireless engineering principles.

For more information on how to configure RUCKUS products, please refer to the appropriate user guide available on the RUCKUS support site at <u>https://support.ruckuswireless.com/</u>



Overview

This document describes how to prepare, install, and initially configure the RUCKUS WAN Gateway as a Virtual Machine on a VMWare ESXi Hypervisor.

The document includes the following sections:

- Hypervisor Infrastructure
- Virtual Machine
- Install RWG from ISO
- Licensing

Hypervisor Infrastructure

Supported Platforms

The RUCKUS WAN Gateway can be installed on the VMware ESXi Hypervisor platform. This guide will illustrate the installation on ESXi version 6.7u3.

Key Considerations

- RWG is a router, and it is designed to be the default gateway for the end users.
- The physical hardware in the host must exceed the license requirements.
- An additional hardware resource margin is highly recommended.

Host Recommendations for Production

- Multiple physical ethernet network host adapters (NICs)
 - RWG requires at least two virtual interfaces.
 - Large scale dynamic VLAN assignments using RWG may require a dedicated physical LAN port.
- Two physical persistent storage devices
 - Boot drive: This is a small SSD. The hypervisor will be installed here and boot off this device.
 - Primary datastore: This is a large SSD, rated for high endurance (DWPD/DPD 10 is recommended)
- Hardware compatibility
 - o Installation may not complete if device drivers are missing.
- Required resources
 - \circ ~ Use the Resource Calculator Tool to calculate the required resources.



The required resources can be calculated using the **Resource Calculator Tool** available at <u>https://store.stage.rgnets.com/configure</u>

You need an user account and password to login.

Proposed Network Architecture Expand/collapse full diagram	Configuration
Recommended Specs 🔨	Calculate SUL based on:
8-core CPU 32 GB of RAM	O SUL Only ● SUL x Units
800 GB disk space	1000 Total SUL 0
1000 SUL	1000 Mbps V Throughput Potential 6
Standalone Your Equipment	High Availability 1
CP+DP	100 V Max Policies 3
	Subscription:
Control Plane Data Plane Orthophined CP+DP	🔾 3 Years 🛛 1 Year 🧯
	0 Customer Discount 3
Itemized Summary	Support Type: O Watchdoa O Bulldoa 0
Part Number Quantity List Price Extended Price	
3 Yrs RWG-SUB-03 1000 \$36.00 \$36,000.00 0	Other License Specifications
Total: \$36,000.00	Max Identities: 125000 Max Uplinks: 11 Max Dra Lifel Deschriftle 1000 Mess
Title this quote (required)	Max Per-Oplink Bandwidth: 1000 Mbps Max VLANs: 1500
	Max Local IPs: 3000Max States: 100000
Add a description (optional)	Max Policies: 100 Max Groups: 200
	 Max Groups: 200 Max Custom Portals: 20 Maximum Concurrent Devices: 1000

FIGURE 1 – THE RESOURCE CALCULATOR

Hypervisor Networking

A minimum of two vNICS, two vSwitches and two Port Groups are required for a RWG virtual machine deployment. Four or more are recommended for larger scale, broader RWG deployment scenarios.

Note: The RWG licenses are tied to the VM resource configuration. Removing or adding resources (CPU, DRAM or vNICs) after the RWG is deployed will invalidate the RWG license, and a new one will need to be obtained.



Hypervisor Network Topology

vmware[®] RUCKUS RWG Test Client Internet trunk access WAN Port Group LAN Port Group WAN LAN vSwitch vSwitch

The diagram below shows the network topology for a basic RWG VM deployment.

FIGURE 2 - HYPERVISOR NETWORK TOPOLOGY

LAN vSwitch

In a web browser, navigate to **Networking/Virtual switches**. Click on **Add standard virtual switch**.



FIGURE 3 - ESXI: VIRTUAL SWITCH TAB



Enter the following information:

- vSwitch name: vSwitch1
- Uplink 1: vmnic1
- Promiscuous mode: Accept for Promiscuous mode (required to pass DHCP traffic)
- MAC address changes: Accept
- Forged transmits: Accept

Add standard virtual switch - vSwitch1	
Add uplink	
vSwitch Name	vSwitch1
MTU	1500 🗘
Uplink 1	vmnic1 \checkmark X
Link discovery	Click to expand
✓ Security	
Promiscuous mode	• Accept O Reject
MAC address changes	• Accept O Reject
Forged transmits	Accept O Reject
	Add Cancel

FIGURE 4 – LAN VSWITCH CONFIGURATION

• Click **Add** to finish.

Port Groups

Port groups are used to set up traffic management for the RWG virtual machine. We need to create at least two port groups. Navigate to the port groups tab and click on **Add port group** to create a new port group.

일 Add port group	🥖 Edit	t settings	C Refresh	Actions		
				Q Search		
Name ~	Ac ~	VL ~	Type v	vSwitch	~	VMs ~
🔮 VM Network	0	0	Standard port gr	wSwitch0		0
Management	1	4095	Standard port gr	w vSwitch0		N/A





Enter the following information to create the port group for the RWG WAN:

- **Port group name**: rwg-WAN-pg
- VLAN ID: 0
- Virtual switch: vSwitch0 (connected to the ISP)
- Promiscuous mode: Accept
- MAC address changes: Accept
- Forged transmits: Accept

Click Add to finish.

🔮 Add port group - rwg-WAN-pg	
Name	rwg-WAN-pg
VLAN ID	o 🗘
Virtual switch	vSwitch0 ~
▼ Security	
Promiscuous mode	Accept Reject Inherit from vSwitch
MAC address changes	Accept Reject Inherit from vSwitch
Forged transmits	• Accept O Reject O Inherit from vSwitch
	Add Cancel

FIGURE 6 - WAN PORT GROUP CONFIGURATION

Now let's create a port group for the RWG LAN. Navigate to **Port groups/Add port group** and enter the following information:

- Port group name: rwg-LAN-pg
- VLAN ID: 4095 (The VLAN ID 4095 enables trunking on the port group. The virtual switch will be able to pass traffic from any VLAN)
- Virtual switch: vSwitch1 (connected to the LAN)
- Promiscuous mode: Accept
- MAC address changes: Accept
- Forged transmits: Accept

Click Add to finish.



Note: It is important to set the VLAN ID to 4095 for the RWG LAN port group. If you don't do that, RWG will only be able to pass traffic for untagged VLANs.

FIGURE 7 - LAN PORT GROUP CONFIGURATION

The Port groups tab should look like the following:

Port groups Virtual switches	Physical N	IICs VMke	ernel NICs TCP/IP stacks	Firewall rules			
Number of the set of t	tings 🕑 Re	efresh 欎 A	Actions		Q Search		
Name 🛦 🗸 🗸	Active p ~	VLAN ID 🗸	Туре ~	vSwitch	~	VMs	~
Management Network	1	4095	Standard port group	wSwitch0		N/A	
Q rwg-LAN-pg	0	4095	Standard port group	Switch1		N/A	
👰 rwg-WAN-pg	0	0	Standard port group	wSwitch0		N/A	
Q VM Network	0	0	Standard port group	wSwitch0		0	
						4 ite	ms 🖌





VMkernel Adapter (Production Environment)

VMkernel NIC adapters are used to provide network connectivity to the hosts and to handle the traffic for additional services such as vSphere vMotion, Provisioning, IP storage, Fault Tolerance logging, vSAN, Management and Replication. VMkernel NIC adapters are not required for most test envinroments.

In an RWG production environment, it is also considered best practice to use a public IP address on the WAN connection, to allow for external management and VPN applications.

To create a VMkernel adapter, go to the VMkernel NICs tab and click on Add VMkernel NIC.

Port groups	Virtual switches	Physical NICs	VMker	nel NICs	TCP/IP stacks	Firewa	ll rules		
🕍 Add VMke	rnel NIC 🥒 Edit set	tings 🧲 Re	fresh 🏠	Actions	_			Q Search	
Name 🗸	Portgroup	✓ TCP/II	stack	~	Services	~	IPv4 add \sim	IPv6 addresses	~
💓 vmk0	Management Net	work 🖽 De	fault TCP/IP	stack	Management		192.168.1.23	None	

FIGURE 9 - VMKERNEL NICS

Enter the following information:

- IP address: enter the RWG WAN address
- Subnet netmask: enter the RWG WAN address subnet mask
- Be sure to modify the **Default TCP/IP stack** with the proper default gateway, DNS and hostname.



FIGURE 10 - NEW VMKERNEL NIC

Click **Create** to finish.



Firewall Configuration

Edit the **Firewall** settings for the SSH Server and vSphere Web Client rules to only allow traffic from your desired subnets. Navigate to the **Firewall** rules tab and in the search field, search for **SSH Server**. Highlight the SSH Server rule and click on **Edit Settings**.

Port groups	Virtual switches Phy.	sical NICs	VMkernel NICs		TCP/IP stacks	Firewall rules		
🥖 Edit settings	🛛 🛛 🤁 Refresh 🛛 🎇 Ac	ions				Q ssh		×
Name 🛦	6	Key		~	Incoming Ports	e	Outgoing Po	orts
SSH Client		sshClient					22	
SSH Server		sshServer			22			
							2 ite	ems #

FIGURE 11 - FIREWALL RULES

In the firewall rule settings, select **Only allow connections from the following networks:** and input your chosen networks.



FIGURE 12 - SSH SERVER FIREWALL RULE SETTINGS

Click **OK** to finish. The ruleset should refresh automatically.

Repeat the same process for the **vSphere Web Client** rule.



Virtual Machine

Download the RWG ISO File

Navigate to the RUCKUS support site at <u>https://support.ruckuswireless.com/software</u>, and select RUCKUS WAN Gateway (RWG) in the dropdown list. The **Downloads** tab will show the recommended ISO images. Download the latest recommended image to your computer.

earch software	e name, descriptio	on, product name, e	etc Q	RUCKUS WAN Gatew	ay (RWG)			
		4	Produc	t Detail				
			The RUCK comprehe DHCP, rou performan and more. such as in guest loya	KUS WAN Gateway ("F nsive set of critical Ent uting/BGP, policy, firew uce-based WAN routing In addition, RWG offe tegrations with billing s lifty systems, location e	RWG") is a softw erprise network all, micro segme g, event triggers, rs valuable featu systems, propert ngine, eDPSK /	vare platfo services entation, a , automat ures for se ty manage guest poo	orm deliveri such as DM application ion, orches ervice provi ement syste rtal, and mo	ng a NS, tration iders ems, ore.
		je	Model Nar Product Fa Recomme	me: RWG amily: RUCKUS WAN (inded Software:	Gateway (RWG)			
Documents	RWG Imag •	De KB Articles	Model Nar Product Fi Recomme Forum Topics	me: RWG amily: RUCKUS WAN (inded Software:	Gateway (RWG)	letins	Advanced	Search
Documents Search:	RWG Imag e	© KB Articles	Model Nar Product Fa Recomme	me: RWG amily: RUCKUS WAN (nded Software:	Gateway (RWG) Support Bull Support Bull S	letins Show: All	Advanced Versions	Search
Documents Search:	RWG Imag	© KB Articles	Model Nar Product Fa Recomme	me: RWG amily: RUCKUS WAN (nded Software: Security Bulletins Release Version	Gateway (RWG) Support Bull File Type	letins 🖟 Show: All	Advanced Versions Updated	Search
Documents Search: Name RUCKUS WAN	RWG Imag RWG Imag •	0 KB Articles	Model Nar Product Fa Recomme s Forum Topics R T	me: RWG amily: RUCKUS WAN (inded Software: Security Bulletins Release Version (4.735	Gateway (RWG) Support Bull File Type MG	letins a Show: All Last 202	Advanced Versions	Search

FIGURE 13 – RWG IMAGES AT THE RUCKUS SUPPORT PORTAL

After you downloaded the RWG ISO, upload the file to an accessible datastore on the ESXi host. Navigate to **Storage**, select your datastore, then go to the **Datastore browser**, select your datastore directory and click **Upload**:

Datastore I	browser					
👔 Upload	Download	🙀 Delete	🔒 Move	Сору	🞦 Create directory	C Refresh
da Upload	a file to the sele	cted datastor	re	() 13.	1-RELEASE-amd64	
🔳 ds2		📺 ISOs		13.	1-RELEASE-amd64	
	_	updates sysSwap	-ds-63ed045	_		

FIGURE 14 – UPLOAD IMAGE TO DATASTORE



Create VM

The VMware wizards are designed for creating virtual servers. RWG is a router, and its requirements are different from a standard VMware server, so a custom VM creation is required. Go to **Navigator/Virtual Machines** and click **Create/Register VM**.

Navigator	🝵 mzpn-esxi3.mazapanlabs.com - Virtual Machines
✓ ☐ Host Manage Monitor	Create / Register VM Console Power on Power off
Virtual Machines 0	□ Virtual machine ∨ Sta ∨ Used space ∨ Guest OS
> Storage 2	No virtual machines
> 💁 Networking 🗾 3	Quick filters v

FIGURE 15 - CREATE VM

Execute the following steps:

- Select Creation Type
- Select Create a new virtual machine and click Next.
- Enter a name and select the parameters for the Guest OS:
 - Name: RWG VM
 - Compatibility: ESXi 6.7 virtual machine
 - Guest OS family: Other
 - Guest OS version: FreeBSD 12 or later versions (64-bit)
- Click Next
- Select Storage
- Select your datastore and click Next

Customize Settings

These settings should be entered according to your requirements. Use the **RWG Resource Calculator** to confirm the required resources. This example will use the minimum settings. Enter the follow information:

- **CPU**: 4 (1 core per socket)
- Memory: 12 GB
- Hard disk 1: 80 G (thick provisioned, lazily zeroed)
- Network Adapter 1
 - Select the rwg-WAN-pg port group that was previously created. The first network interface on the server is a DHCP client (vmx0/vmnic0) which will be utilized for the RWG WAN uplink to the ISP.

Click on Add network adapter to create a new network adapter.

- Select the rwg-LAN-pg port group that was previously created. The last network interface on the server is a DHCP server (vmx1/vmnic1 in this example), which will be used for the RWG LAN connection.
- CD/DVD Drive 1
 - Mark the Connect checkbox
 - Select Datastore ISO file
 - Locate the RWG ISO file and click Select

RUCKUS WAN Gateway – Virtual Machine Installation



Virtual Hardware VM Options		
🔜 Add hard disk 🛛 🛤 Add netwo	k adapter 🗧 Add other device	
E CPU	4 💙 🚺	
Memory	12 GB ~	
Hard disk 1	80 GB ~	×
SCSI Controller 0	LSI Logic SAS	~ ×
SATA Controller 0		×
USB controller 1	USB 2.0	~
		×
	rwg-WAN-pg	~
Network Adapter 1	Connect	×
	rwg-LAN-pg	~
New Network Adapter	Connect	×
	Datastore ISO file	⊻ ×
OD/DVD Drive 1	✓ Connect	
Video Card	Default settings	~

FIGURE 16 – CUSTOMIZE SETTINGS

Click **Next** to continue. The system will show the resulting configuration.

Ready to complete						
Review your settings selection before finishi	ng the wizard					
	-					
Name	RWG VM					
Datastore	datastore1					
Guest OS name	FreeBSD 12 or later versions (64-bit)					
Compatibility	ESXi 6.7 virtual machine					
vCPUs	4					
Memory	12 GB					
Network adapters	2					
Network adapter 1 network	rwg-WAN-pg					
Network adapter 1 type	VMXNET 3					
Network adapter 2 network	rwg-LAN-pg					
Network adapter 2 type	VMXNET 3					
IDE controller 0	IDE 0					
IDE controller 1	IDE 1					
SCSI controller 0	LSI Logic SAS					
SATA controller 0	New SATA controller					
Hard disk 1						
Capacity	80 GB					
Datastore	[datastore1] RWG VM					
Mode	Dependent					
Provisioning	Thick provisioned, lazily zeroed					
Controller	SCSI controller 0 : 0					
CD/DVD drive 1						
Backing	[ds2] ISOs/13.1-RELEASE-amd64-rxg-14.623.iso					
Connected	Yes					
USB controller 1	USB 2.0					
	Back Next Finish					

FIGURE 17 – READY TO COMPLETE

Confirm the settings and click **Finish** to create the virtual machine.



Best Practices for Multiple Uplink/Interface Deployments

The example in this document uses only two physical ethernet interfaces and vSwitches. In production, multiple uplinks and interfaces may be required. The following are some caveats and considerations when deploying multiple interfaces for a VM deployment:

- Licensing is locked to the number of interfaces on the VM. Create a few more interfaces than you. Having more interfaces available will avoid the need to obtain new RWG licenses. Unused interfaces can remain disconnected until you need them.
- A VMXNET3 adapter is required for interfaces running at 10 GBps.
- The first network interface on the server is a DHCP client (vmx0/vmnic0), which will be utilized for the WAN uplink to the ISP. It needs to be connected to your ISP router.
- The last network interface on the server is a DHCP server (vmx3/vmnic3 if using 4 interfaces), which will be utilized for the LAN connection.
- The additional interfaces can be configured as either WAN uplinks or LAN connections, depending on your use case.

Virtual Network Adapter Order (Known VMware issue)

It is possible that when deploying multiple virtual network adapters (3 or more), the order of the adapters may appear as non-linear in the vSphere/ESXi settings, which can cause NIC configuration issues with the RWG. You may need to manually adjust the parameters. This is done post VM installation.

To manually set the virtual network adapter order, shut down your VM, then do a right click and select **Edit Settings**. Go to **VM Options/Advanced/Configuration Parameters** and click **Edit Configuration**.



FIGURE 18 - VM OPTIONS



In the Search field type in **ethernet** to filter for the **ethernetX.pciSlotNumber** entries. This sequence of values works reliably for multiple ethernet interfaces:

- ethernet0.pciSlotNumber: 1184
- ethernet1.pciSlotNumber: 2208
- ethernet2.pciSlotNumber: 3232
- ethernet3.pciSlotNumber: 4256
- ethernet4.pciSlotNumber: 5280
- ethernet5.pciSlotNumber: 6304
- ethernet5.pciSlotNumber: 7328

Double click on the value field and make the required changes for each ethernet.pciSlotNumber.

🖡 Add parameter 🛛 💥 Delete parameter		Q ethernet	:
(ey	😒 Value		•
thernet0.pciSlotNumber	192		
thernet1.pciSlotNumber	224		
thernet2.pciSlotNumber	256		
thernet0.generatedAddressOffset	0		
thernet1.generatedAddressOffset	10		
thernet2.generatedAddressOffset	20		
Configuration Parameters	_	_	6 items
Configuration Parameters Add parameter X Delete parameter	-	Q ethernet	6 items
Configuration Parameters Add parameter Xey	♥ Value	Q ethernet	6 items
Configuration Parameters Add parameter Xey ethernet0.pciSlotNumber	Value 1184	Q ethernet	6 items
Configuration Parameters Add parameter Add parameter Xey athernet0.pciSlotNumber athernet1.pciSlotNumber	Value 1184 2208	Q ethernet	6 items
Configuration Parameters Add parameter Add parameter Cey athernet0.pciSlotNumber athernet1.pciSlotNumber athernet2.pciSlotNumber	♥ Value 1184 2208 3232	Q ethernet	6 items
Configuration Parameters Add parameter Add parameter Cey ethernet0.pciSlotNumber ethernet1.pciSlotNumber ethernet2.pciSlotNumber ethernet0.generatedAddressOffset	 ✓ Value 1184 2208 3232 0 	Q ethernet	6 items
Configuration Parameters Add parameter Configuration Parameter Add parameter Configuration Parameter Configuration Parameters Configuration Parame	 ✓ Value 1184 2208 3232 0 10 	Q ethernet	6 items

FIGURE 19 - ETHERNET ENTRIES BEFORE AND AFTER CHANGES

Click **OK** and then **Save**.



Installing RWG

Start the VM to boot from the ISO file to begin the RWG installation process. The system will auto boot into the RWG installer.



FIGURE 2 - VM STARTUP

Installer wizard

The next screens will ask for confirmation to install RWG's Base OS and software. Click Yes to start the process.



FIGURE 3 - CONFIRM INSTALLATION





FIGURE 4 - CHECKING DISTRO ARCHIVES



FIGURE 5 - DISTRO FILES EXTRACTION



FIGURE 6 - INSTALLING RWG KERNEL



FIGURE 7 - PREPARING TO INSTALL RWG SOFTWARE





FIGURE 8 - SOFTWARE AND DEPENDENCIES INSTALLATION

After the installation is complete, the system will reboot automatically.

Rebooting 0 0 Cancel>
Feb 13 21:08:31 reboot[5201]: rebooted by root
Feb 13 21:08:31 syslogd: exiting on signal 15 Haiting (max 60 seconds) for system process 'vnlru' to stop done Haiting (max 60 seconds) for system process 'syncer' to stop Syncing disks, vnodes remaining 0 0 0

FIGURE 9 - REBOOTING AFTER INSTALLATION



System Initialization

After rebooting, the system will come back up with an initializing screen and ask that you wait at least ten minutes for the process to complete.



FIGURE 10 - WAIT FOR FIRST COMPLETE INITIALIZATION

The network interfaces will be shown, as well a License Required message.

RWG VM		Actions 🔞
		[_; ; , _;
https://rxg.local/admin		
Monokrom Bane build 14.623 13.1-RELEASE #76	6	
UMµare Uirtual Platform 4 3390 12288 67 2K0JXHNI		
Standalone		
инх8	Uplink 192.158.1.194/24	
VHX1	Management LAN 192.168.5.1/24	
FreeBSD∕amd64 (rxg.local) (t†	tyu8)	
Please wait while the environ	nment is loaded	



The system will acquire an IP address on the WLAN port, and the LAN port will be assigned 192.168.5.1/24 by default.



Initial Configuration Tool

The WAN and LAN IP address can be changed with the RWG configuration tool that loads after installation. Select option **1** for WAN IP configuration changes and option **2** for LAN IP configuration changes.

FreeBSD/amd64 (rxg.local) (ttyvØ)	
Please wait while the environment is loaded	
Welcome to the configuration tool!	
Current primary WAN configuration: Interface: igb0 [20:7c:14:a2:7c:be] CIDR: DHCP 0.0.0.0/8 Gateway: DHCP	
Current first LAN configuration: Interface: igb5 [20:7c:14:a2:7c:c3] CIDR: 192.168.5.1/24 DHCP Start IP: 192.168.5.10 DHCP End IP: 192.168.5.254	
Please choose from the following: 1: Configure WAN 2: Configure LAN 3: Shell 4: Reboot	
5: Shutdown 6: Enable Built-in Admin Sync 7: Display IUI 8: Exit Enter choice (1-8):	

FIGURE 12 - CONFIGURATION TOOL

RWG Licensing

The **Installation Unique Identifier (IUI)** is required to generate the RWG license. From the configuration tool, choose option **7** and copy the IUI.

Alternatively, you can open a web browser on a separate system and navigate to <u>https://192.168.5.1/admin</u> to view the GUI and copy the IUI. The web server may take a short while to display the page but will eventually show up. When the webpage loads, you can click on the **Copy** button under the IUI to copy it.







Generating and Applying the License

The **Asset Manager** is available for RUCKUS SEs to create licenses for demos and POCs. Navigate to <u>https://store.rgnets.com/asset_manager</u>. You need an user account and password to login.

Asset Manager If you would like to manage your assets programatically, check out	the Assets API.					
Search						
		R	enew All U	pcomin	g Rene	w All Expired
Active (231) Pending (10) Disabled (14) Duplicate FC	DN (32)					
« 1 2 3 4 5						» .
Asset - FQDN / IUI	Sales / Order / PO Number	Product	Capacity	Label	Expiration	Actions
ASSET7631 nasir.ahmed.commscope.com	Sales Force Number	RXG-SUB	99 SUL	1	2027-03-31	😾 Get License
4 3390 8192 51 ZKOJXHKFFMVOZUNIBENZFYFR GZQQJUKUSYOH	Sales Order Number					License Tra
	Purchase Order Number					Notes
ASSET7630 FQDN (Fully Qualified Domain Name)	Sales Force Number	RXG-SUB	99 SUL	1	2027-03-31	License Tra
IUI (Installation Unique Identifier)	Sales Order Number					Dotes 🗎
	Purchase Order Number					

FIGURE 32 – ASSET MANAGER WITH AVAILABLE ASSET SHOWING

Enter the following information:

- FQDN: Enter the FQDN for your instance. If it is not defined yet, enter rxg.local. Click Set FQDN to complete.
- IUI: Paste the IUI you copied from your instance. Click **Set IUI** and the confirmation to complete.







Scroll right, then click Get License to see your license. Click Copy to Clipboard to copy it.

					License Key (ASSET7631):	×
RXG-SUB	99 SUL	Free RWG	2024-02-28	 ở Get License ➔ License Transfer 會 Notes 	n272v7/1vsRc23bc135ECQYsvB5res pBQa2C694HW1x2xf7bgH7b_1B8bQ2 169022fc1151/s5KW4520 169022fc1151/s5KW4520 169026fc1151/s5KW4520 1670x69Hm2c20B112HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2c20B12HV12B5 1670x69Hm2C2B12H5 1670x69Hm2C2B12HV12B5 1670x69Hm2C2B	AwAdE 2x5GeBTD 80%-tuCK511Ta-hp pgk 1/2 AF Feltis 9(1, 2x7444059)W pgk 1/2 AF Feltis 9(1, 2x7444059)W pgb 1/2 hpst8115458(1, 2x7444059)W pgb 1/2 hpst8115458(1, 2x444059)W pgb 1/2 hpst8115458(1, 2x444059)W pgb 1/2 hpst811545(1, 2x44059)W pgb 1/2 hpst81154(1, 2x4705059)W pgb 1/2 hpst81154(1, 2x47059)W
					Liconea Space	Hardwara Space
					Max Login Bessions: 99 Max Upinkes: 10 Max Upinkes: 10 Max IPs: 27 Max VLANs: 130 Max States: 100000 Max Throughput: 99 Max Identities: 12375 Max Policies: 10 Max Groups: 20	Min CPUs; 4 Min Memory: 8 GB Min Storage: 26 GiB

FIGURE 34 – GET LICENSE

If the RWG server has internet connectivity, you do not need to perform any additional steps, as the system will reach out to the Asset Manager server and apply the license automatically.

If the RWG server does not have internet connectivity, you need to paste the license manually. Navigate to <u>https://192.168.5.1/admin</u>, go to the **License Keys** section and click on **Edit**.

ightarrow C $rightarrow$	https://	/192.168.1.′	admin/menu/first_new_admin	☆			V	<u>_</u>	ப
		63		🛓 Restore Backup					
		÷					_		
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Administrators Login Found Created	Service Account	Em	nall Role First name No Entries Expires	List name C	company Columns	SSH	≝ Help Keypain	Zoom	? Hel

FIGURE 35 – EDIT LICENSE KEYS

Paste the license copied from the Asset Manager into the empty field and click **Update**.

RUCKUS WAN Gateway – Virtual Machine Installation



Created		Expires
Update License Ke	У	
License	hmVAauuJC71xJSYRwuqVP4vOthJ0svj v LAOcc7K6guQk8/gmyKJu43mQDB8oD7g R ina6Tc1zeJXSI0+/ye/AaEGLU/D1IM //TedV 0mcRPwHTAEHpQCe8B7dwrrd+hGdNp9p g yAHBFCcg+6B6WWRecShTH5vf5QGa7xW j jnv2/q2jQh5dIyPxGl1Fv1yrXih9Ehk H bI/cGxamEzaZ+Nkb9JopwUHMilkGc6T F iysdFaTxT9BbJ3QoXVc3SDeFPGbv59U F Iqrj4Thnx2HINoJh5Yq5A2UqQWPHukk S SSpMezKMCGInq9y3Q00jZYzbEeYIfJ8 n jAVWJ4DHxXQQZp493V625Rrhd2d2oWD 6	vgyfojoEkbQKWvPTXdDclx2HnWn yAsu3EKpTkgIUqZa8+Wga4Ignfy5 ddzwNhzXzMgKWv48ZZvunOFS ordqpX0lQ37N2Q+AZTwGW5cUMRDT KlaKPiM6vVT+cHWsGD4h44FHa8dP KLkRpeeubb3eW0wsnplXp0Vf6MLa TTJbZaszmqQEDG7AG0zsg4FdiTKT JJVFIVed73AvWXEQAB+mDRjL78qv KQv7DK+vK6vLYiu8UaEjf9u3X2i9 3QZynhImpDTzNZTjXCqXU82GjzIN

FIGURE **36** – PASTE THE LICENSE

RWG will reboot, the GUI will update and show the RWG logo, and the license file information will display in the **License Keys** section.

RWG					Invalid Date nx	glocal help build	14.566 Q Search
System	Network	Services	Identities	Policies	Billing	Archives	Instruments
		pleas	e create at least one administr	ator, or restore a prior ba	ckup or template		
WARNING Igb2 is offline							
>		Installation Unique Id	entifier (IUI)		System Switches		
First		4 2900 1638 ХКНЈҮМОЈWQCVXUG	4 102 ICJRDWCMU		C Reboot		
Admin		Сору			Restore		
		IN THE REAL PROPERTY OF	in the second		or select		
			潮帯				
			ŝ		2 Restore Backup		
Administrators						🗈 Show Remote 📑 Column	s 🖸 Refresh 💠 Zoom 🦹 Help 🔍 Create New
🗹 Login	Service Account	Email	Role	First name No Entries	Last name	Company	SSH Keypairs
0 Found							
License Kevs							🗟 Columns 🖏 Refresh 💠 Zoom 🤗 Help
Created		Started	Expin	es	Lifetime		
02/14/2023 09:47 AM		02/14/2023 09:47 AM	12/31/2	1045 0359 PM	22 years and	10 months	Edit Show

FIGURE 37 – LICENSE IS APPLIED



Creating the First Admin Account

In the Admin GUI a message asking you to create at least one administrator account. To create the account, click on **Create New** in the **Administrators** section.

	Login	4	Service Account	Email	Role	First name	Last name	Company	SSH Keypairs	
6 desira	otratoro		桜 88 乾 泉 回 泉 回				Show Remote	Columns O Refresh	1 Zoom ? Help	Create
							1 Restore	Backup		
			1	Copy			Restor Browse No file set or selec	re lected. 1	1	
			ХКНЈҮМОЈW	QCVXUGICJ	JRDWCMU		() Shuto	lown		
			Installation	Unique Identifi	ier (IUI)		System Sw	oot		

FIGURE 38 – CREATING A NEW ADMINISTRATOR

Enter the Administrator account information and apply the **Super User** role to the administrator account. Scroll down and click **Create** to finish.

Create Administrator		
Login	first_admin]
Service Account	if checked admin will be used only for API key and will not have ad	imin gui access
Password and Confirmation)[]
Email]
Role	Super User 🗸	
Session Timeout (minutes)		optionally override the Admin Role's session timeout value (if the role al
Contact (Hide)		
First and Last name	First	Admin
Company		
Department		
Mobile		
Office		
Preferred	email ~	
Create Cancel		

FIGURE 39 - CREATE ADMINISTRATOR

This concludes the virtual machine installation. Other documents will cover the RWG's basic setup, adoption of devices, and step-by-step guides for different use cases.

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