RUCKUS IoT Controller Software Installation Guide, 2.2.0.0 GA

Supporting IoT Controller Release 2.2.0.0 GA

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Contact Information, Resources, and Conventions

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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.ruckusnetworks.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
- Community Forums—https://community.ruckuswireless.com
- 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.

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@commscope.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.ruckusnetworks.com.

Online Training Resources

To access a variety of online RUCKUS training modules, including free introductory courses to wireless networking essentials, site surveys, and products, visit the RUCKUS Training Portal at https://commscopeuniversity.myabsorb.com/. The registration is a two-step process described in this video. You create a CommScope account and then register for, and request access for, CommScope University.

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	`device(config)# interface ethernet 1/1/6`
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 Safety 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.
italic 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.
x|**y**	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, *member*[*member*...].
\	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.

About This Guide

- Introduction to RUCKUS IoT Controller..... 9
- What's New in This Document..... 9

Introduction to RUCKUS IoT Controller

The RUCKUS IoT Controller is a versatile, easy-to-deploy service and management component that allows for integration of Internet of Things (IoT) devices and IoT services for a wide range of use cases. It provides a robust, secure, scalable, interoperable, and well-managed general transport between IoT devices and cloud services.

The RUCKUS IoT Controller is an open-programmable framework that exposes northbound APIs and is thereby a highly flexible IoT transport for RUCKUS partners to integrate a wide range of IoT services and solutions for the enterprise and beyond.

This guide provides information about how to install the RUCKUS IoT Controller on a supported hypervisor. Topics include the list of supported hypervisors and RUCKUS IoT Controller installation instructions using the .OVA or .qcow2 file.

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.

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

What's New in This Document

Summary of New Features in RUCKUS IoT Controller 2.2.0.0 GA

Feature	Description	Location
Replaced the Initlization Page 2 Screenshot.	Support for Rules Engine is removed.	• Installing RUCKUS IoT Controller on a VMware ESXi on page 12 • Installing a KVM Guest Using Virtual Machine Manager on page 23
Removed the topic " Upgrading the Ruckus IoT Controller with N+1 Configuration".	Refer Release Notes for more details.	-

Summary of New Features in RUCKUS IoT Controller 2.1.0.0 GA

Feature	Description	Location
No new features for this release.	-	-

TABLE 2 Summary of New Features in RUCKUS IoT Controller 1.8.1.1 SR

Feature	Description	Location
No new features added for this release.		

TABLE 2 Summary of New Features in RUCKUS IoT Controller 1.8.1.1 SR (continued)

Feature	Description	Location
Installing RUCKUS IoT Controller on Oracle VM Virtual Box.	This topic is removed for the current relese.	-
Installing RUCKUS IoT Controller using VMware Player.	This topic is removed for the current release.	-

TABLE 3 Summary of New Features in RUCKUS IoT Controller 1.8.1.0 MR

Feature	Description	Location
No New features for this release.	Minor updates	Refer to topics- Supported Hypervisors, Upgrading the RUCKUS IoT Controller, and Upgrading the RUCKUS IoT Controller with N+1 configuration.

TABLE 4 Summary of New Features in RUCKUS IoT Controller 1.8.0.0

Feature	Description	Location
No New features for this release.	The Intialization page is changed for all the Hypervisors.	Refer to Installing RUCKUS IoT Controller on Hypervisor on page 11

TABLE 5 Summary of New Features in RUCKUS IoT Controller Release 1.7.1.0 (Rev A)

Feature	Description	Location
Upgrading the RUCKUS IoT Controller with N+1 Configuration	New steps added	Refer to #unique_17.

Installing RUCKUS IoT Controller on Hypervisor

- System Requirements for Installing RUCKUS IoT Controller on a Hypervisor....11
- Installing RUCKUS IoT Controller on a VMware ESXi....12
- Installing a KVM Guest Using virsh Commands....23
- Installing a KVM Guest Using Virtual Machine Manager....23
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System Requirements for Installing RUCKUS IoT Controller on a Hypervisor

The RUCKUS IoT Controller supports a number of hypervisors and requires a virtual machine (VM).

The following table lists the hypervisors (and their release versions) on which you can install the controller.

TABLE 6 Supported Hypervisors

Hypervisor	Vendor	Version
ESXi	VMware	6.0 and later
KVM	Linux	2.11.1 or later
Hyper-v	Microsoft Windows	6.2 or later

NOTE
For the compatible hardware for the hypervisors listed above, refer to the respective vendors website.

The virtual machine (VM) on which the controller is installed must meet the following requirements:

- The VM for the VMware ESXi hypervisor must have a minimum of 4 vCPUs, 4 GB RAM, and Fixed 20 GB HDD.
- The VM for the KVM hypervisor must have a minimum of 4 vCPUs, 4 GB RAM, and Fixed 20 GB HDD.
- The VM for the Hyper-v hypervisor must have a minimum of 4 vCPUs, 4 GB RAM, and Fixed 20 GB HDD.
- Ports 80, 123 or NTP, 443, 1883, and 8883 must be open.

Hardware Recommendations for the IoT Server

Customers must obtain robust and reliable server hardware that will support a virtualized environment for IoT applications with enough headroom to expand in the future. Each deployment is unique and hardware specifications will need to be adapted to specific needs. For a typical deployment (e.g. RUCKUS IoT Controller, VMware ESXi, Ubuntu Linux server, IP camera VMS, additional IoT VMs or applications), we recommend server hardware that meets the below specifications:

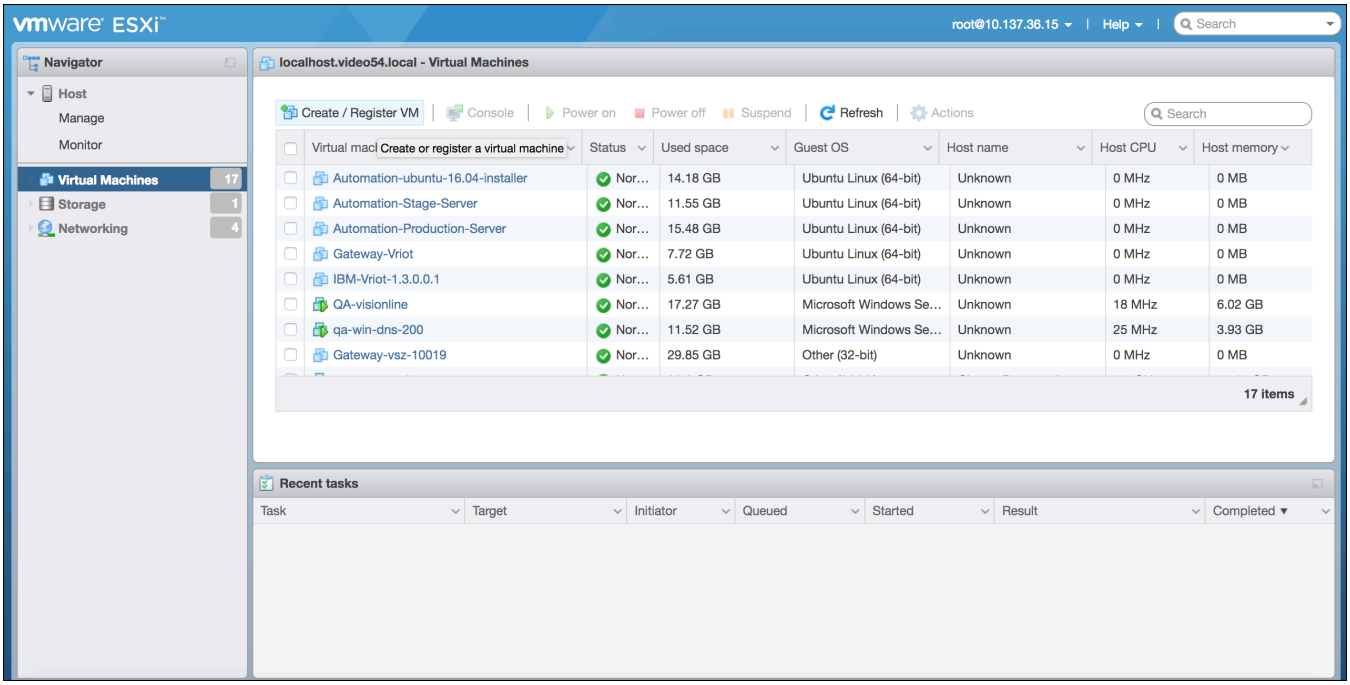
- **CPU**: 4 core i7 or equivalent
- **Memory**: 32 GB
- **Hard Disk**: 1 TB

Installing RUCKUS IoT Controller on a VMware ESXi

The RUCKUS IoT Controller can be installed on a VMware ESXi hypervisor using an .OVA file.

1. Download the RUCKUS IoT Controller distribution package in the .OVA file format from the RUCKUS Support website at https://support.ruckuswireless.com.
2. Open VMware ESXi and select **Virtual Machines** from the **Navigator** pane.

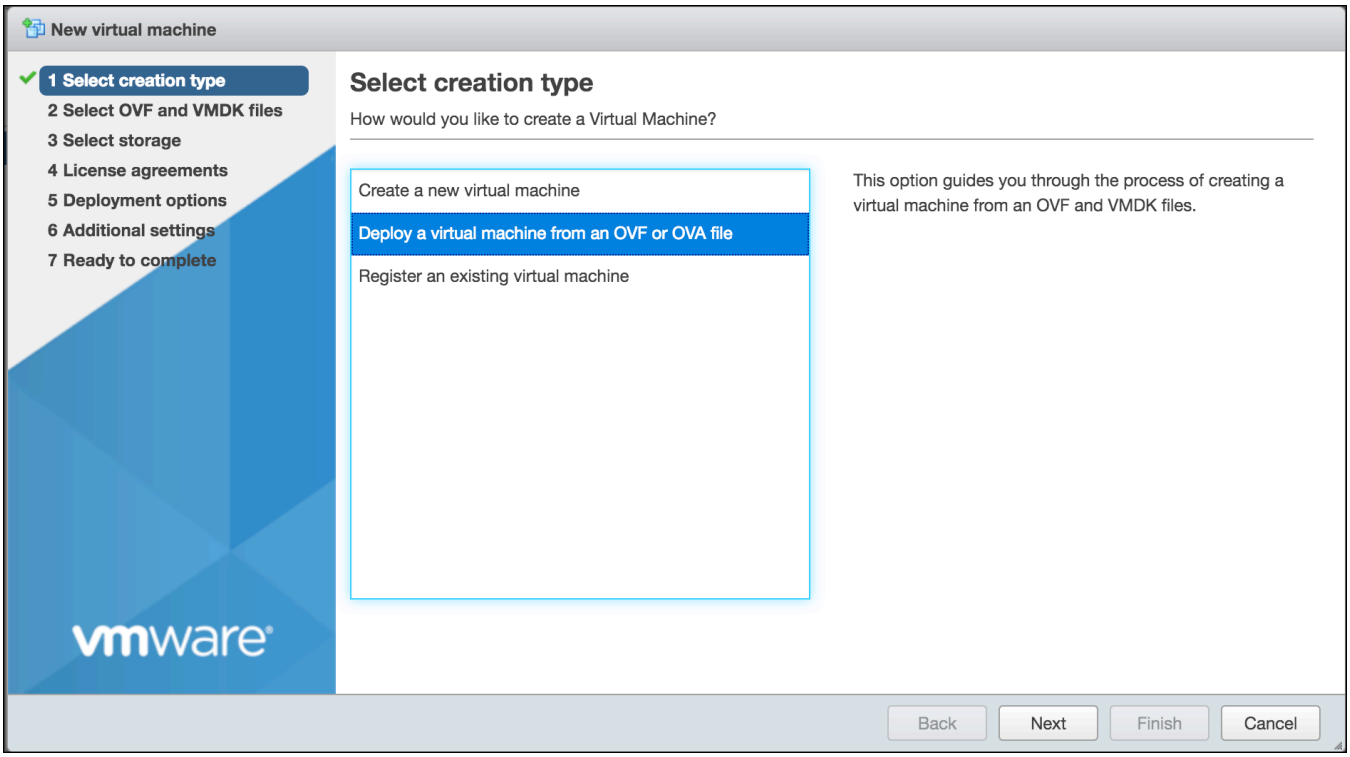
   FIGURE 1 Creating or Registering Virtual Machines



3. Click **Create/Register VM**.

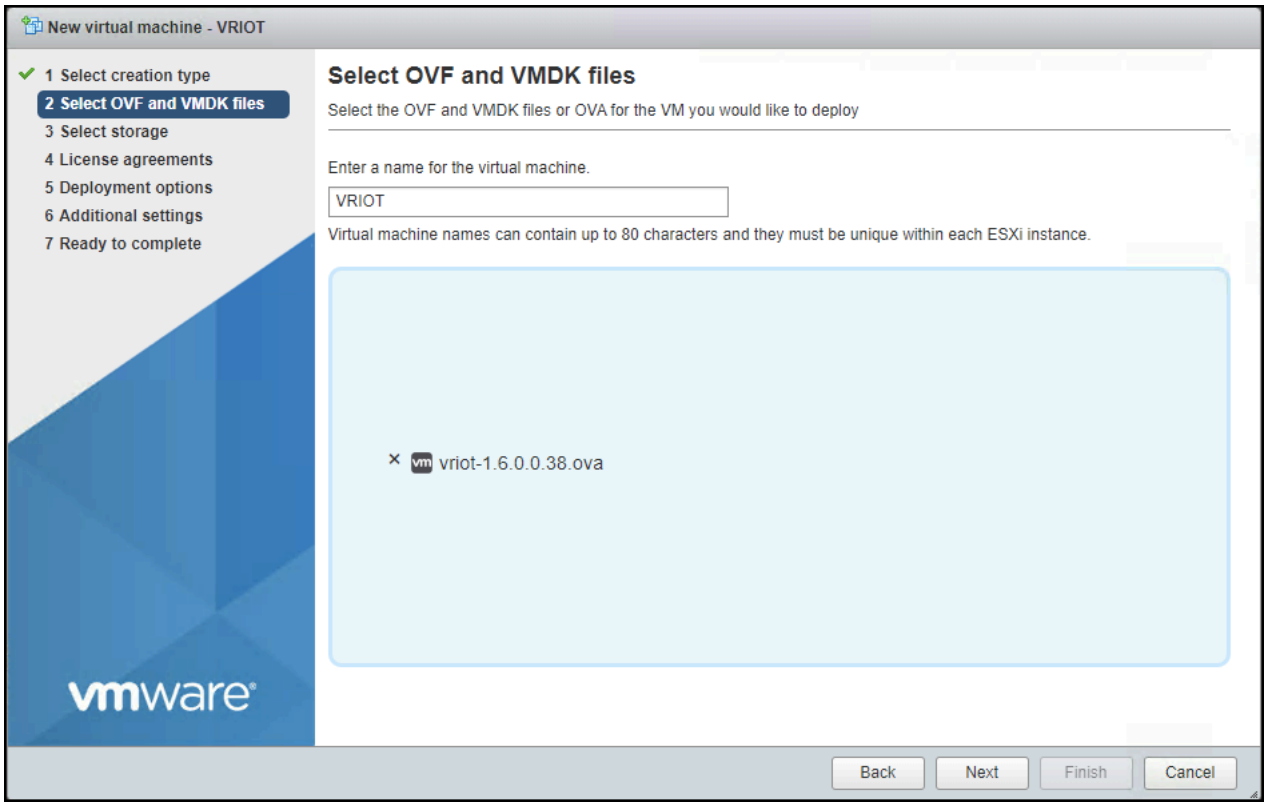
4. On the **New virtual machine** page, click **Select creation type**, and select **Deploy a virtual machine from an OVF or OVA file**. Click **Next**.

FIGURE 2 Select Creation Type Page



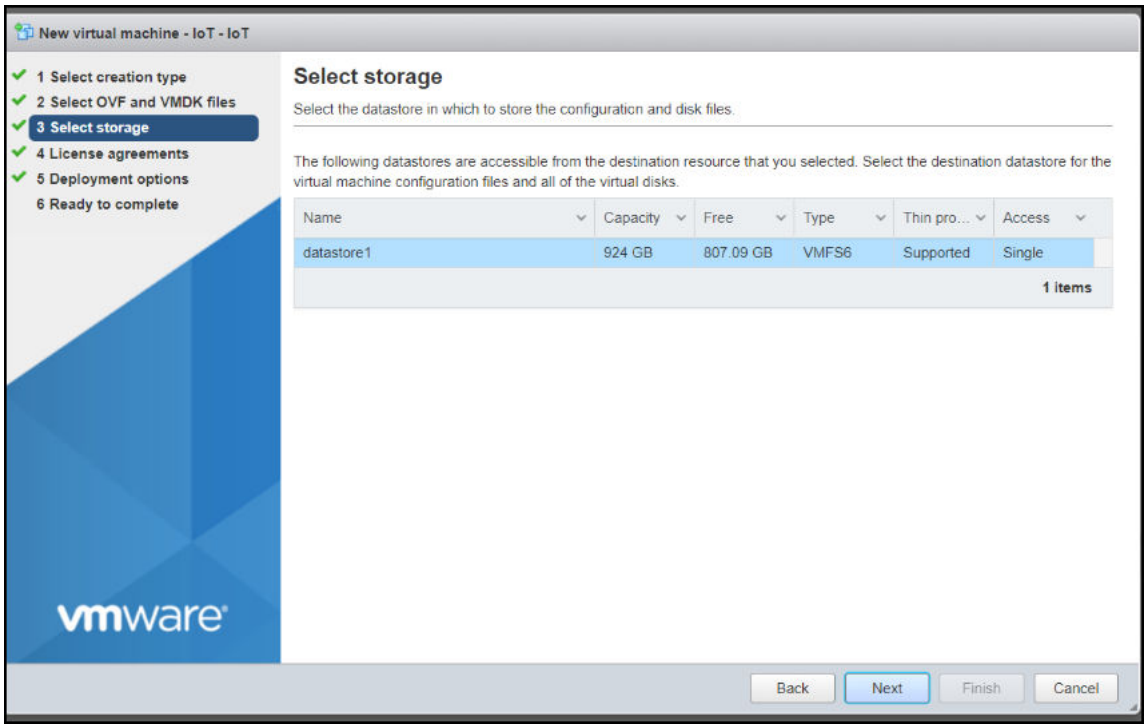
5. Click **Select OVF and VMDK files**, enter a name for the virtual machine, and select the OVF file. Click **Next**.

FIGURE 3 Select OVF and VMDK Files Page



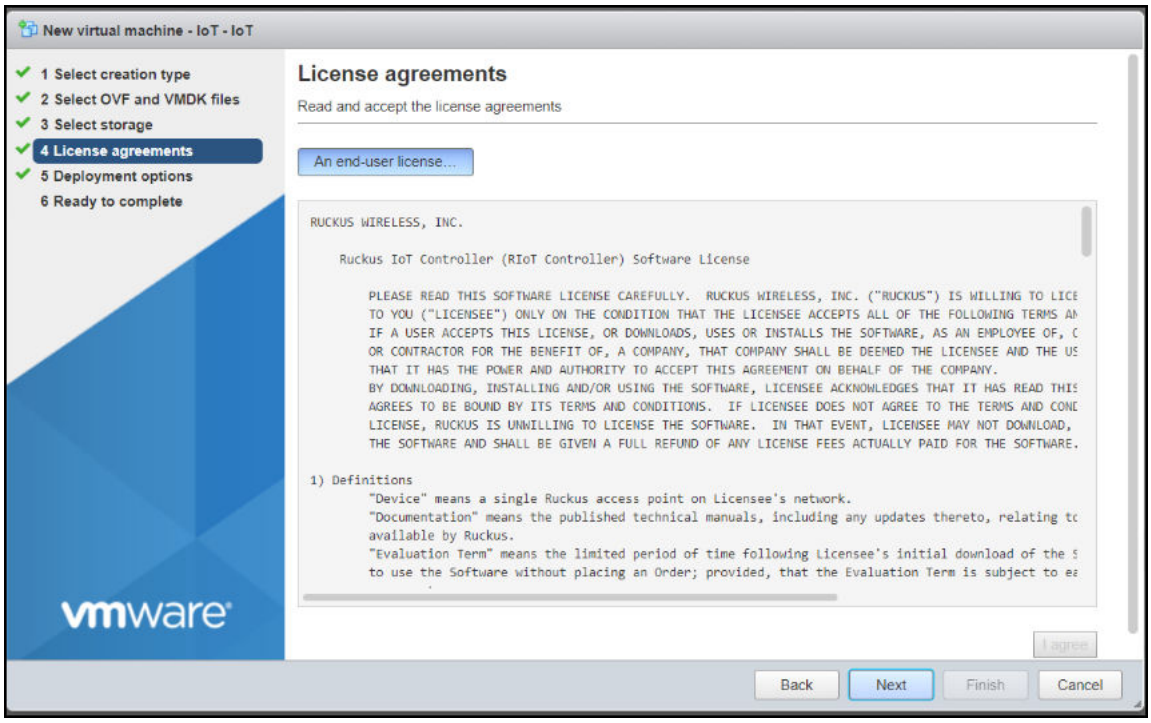
6. Click **Select storage**, and select the datastore in which you want to save the configuration and disk files. Click **Next**.

FIGURE 4 Select Storage Page



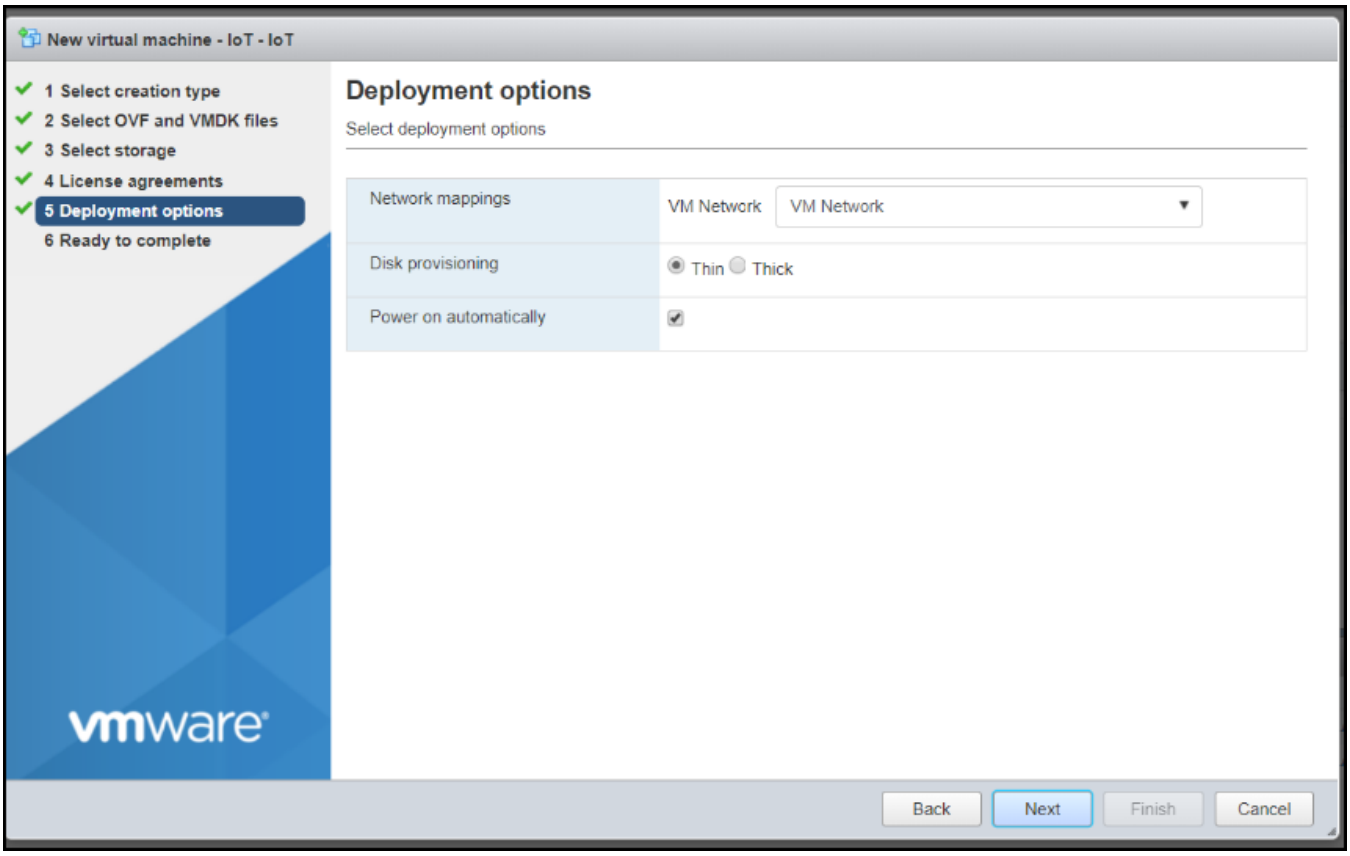
7. Click **License agreements** to accept the terms and conditions of the software license and click **Agree**.

FIGURE 5 License Agreements Page



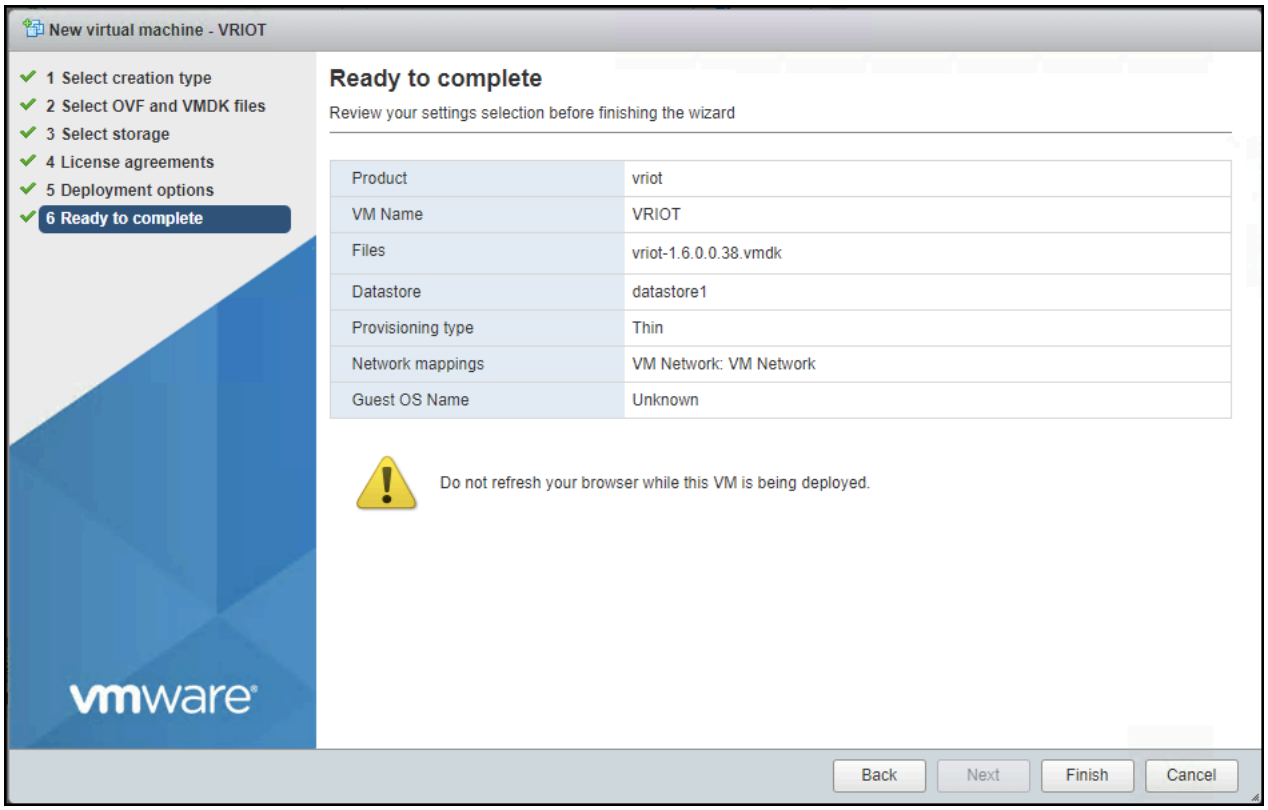
8. Click **Deployment options**, and select the **Network mappings** and **Disk provisioning**. Click **Next**.

FIGURE 6 Deployment Options Page



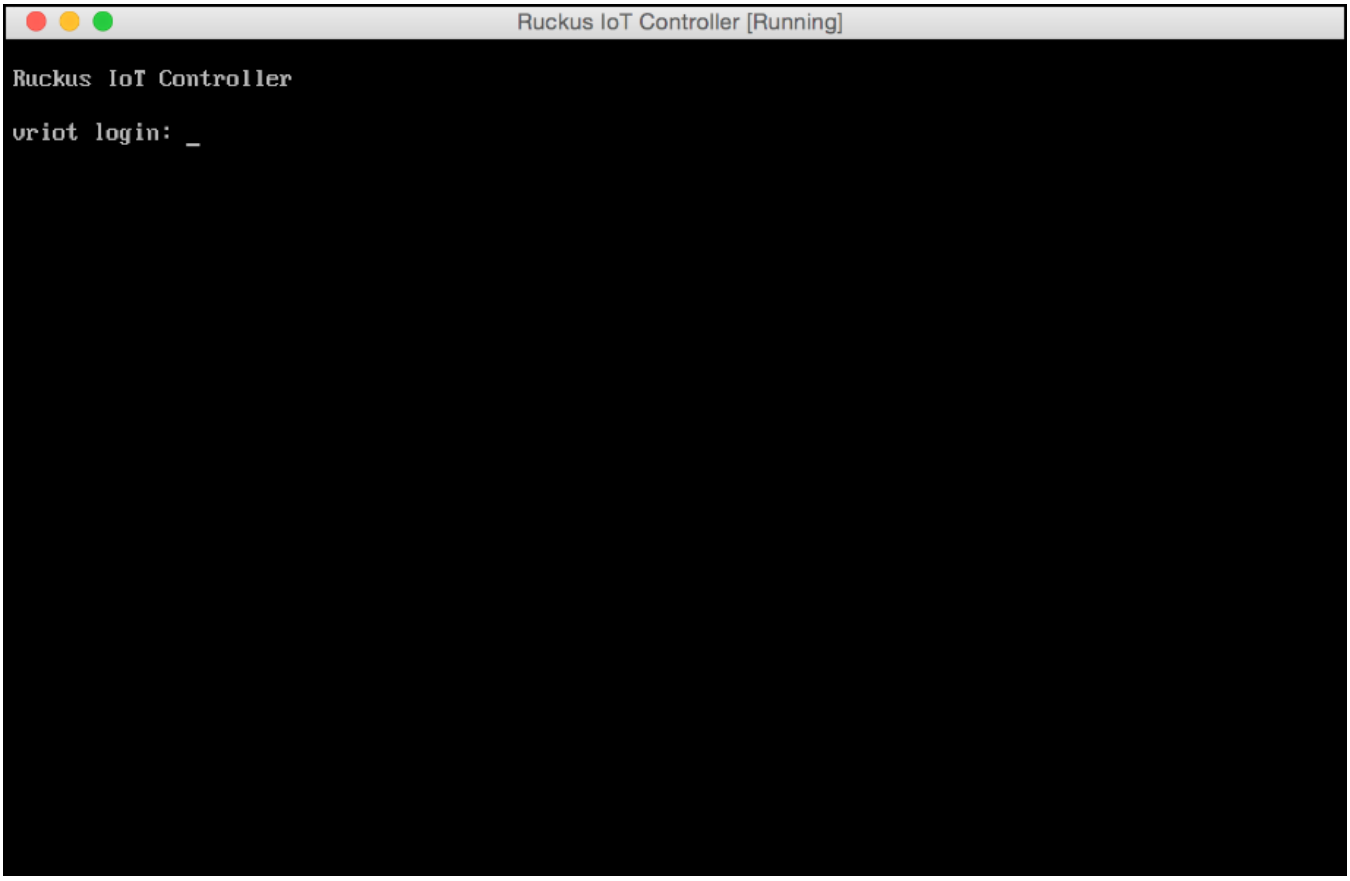
9. Click **Ready to complete** and review the settings. Click **Finish**.

FIGURE 7 Ready to Complete Page



The RUCKUS IoT Controller login prompt is displayed.

FIGURE 8 RUCKUS IoT Controller Login Prompt

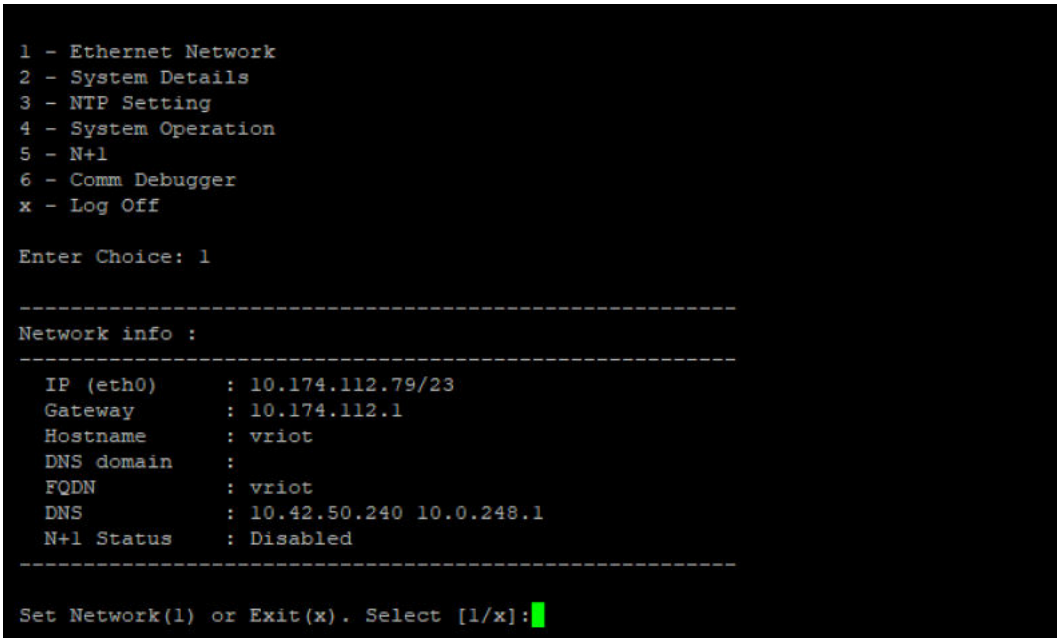


10. Log in to the virtual machine using the username and password.

11. Enter **1** in the **Enter Choice** field to get the IP address of the virtual machine.

    This information is needed to access the RUCKUS IoT Controller**Initialization** page.

    FIGURE 9 Displaying the IP Address



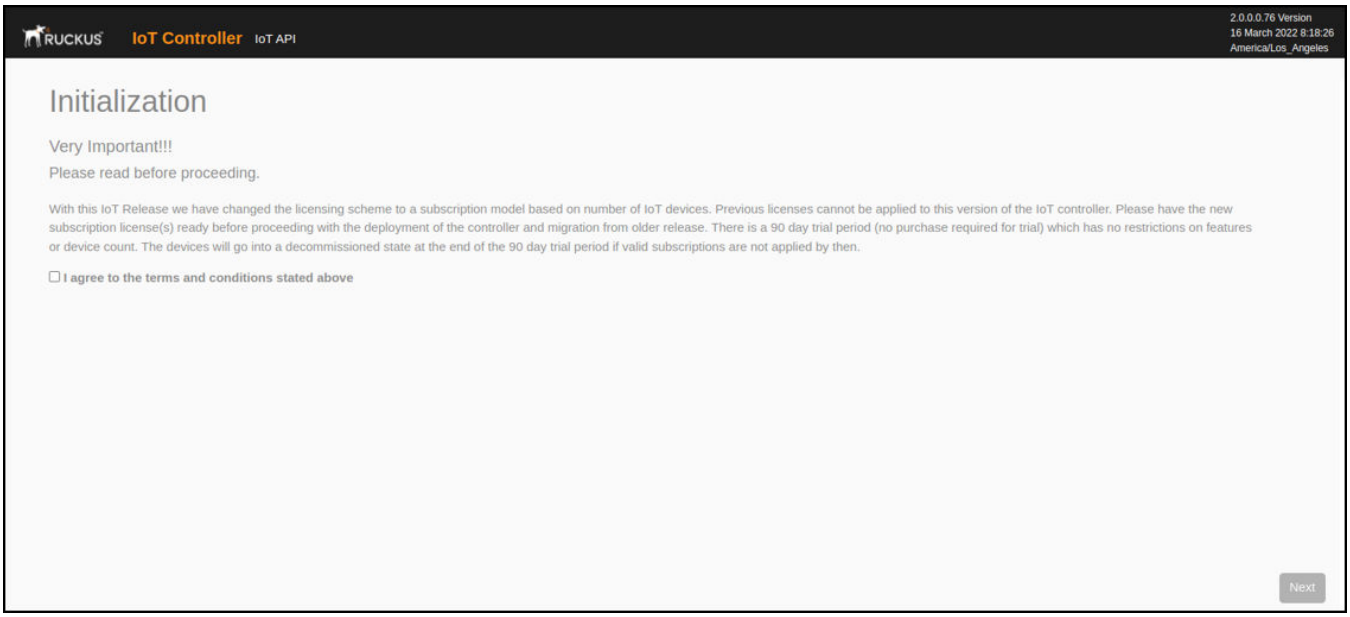
    To configure N+1 on the RUCKUS IoT Controller, enter **5** in the **Enter Choice** field. Refer to "Configuring N+1" in the *RUCKUS IoT Controller Configuration Guide* to complete this configuration.

12. Open a web browser on your host machine and enter the IP address of the VM in the address bar.

    HTTP and HTTPS on ports 80 and 443 are supported.

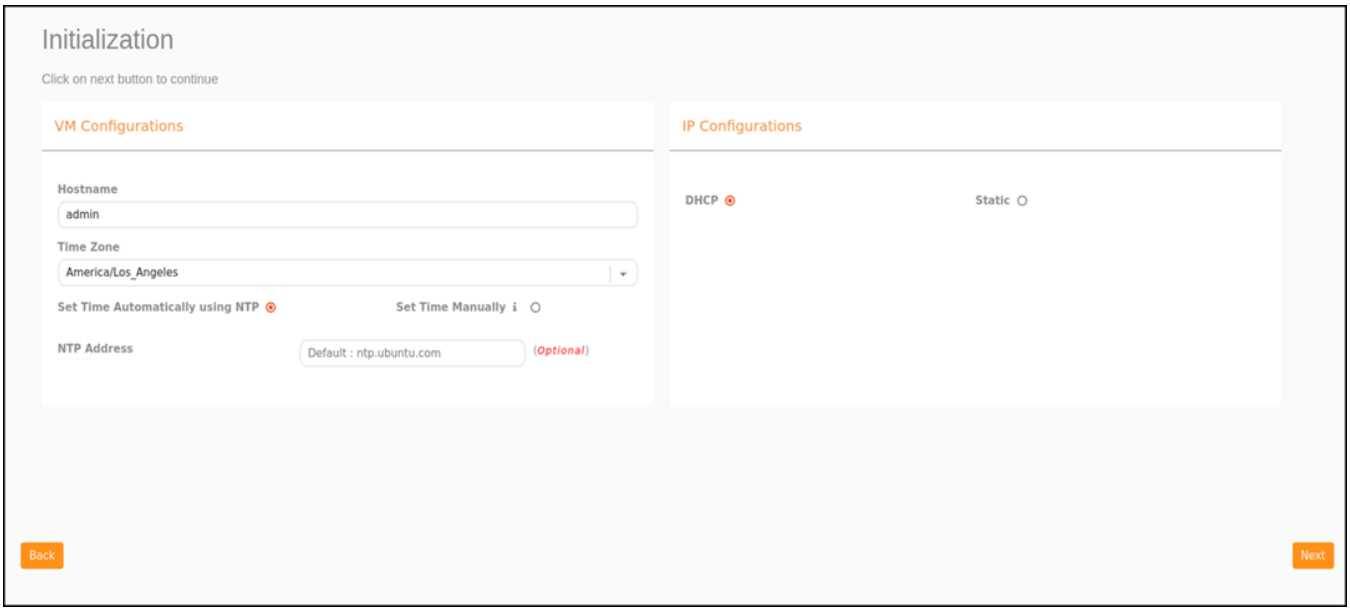
    The **Initialization** page is displayed.

FIGURE 10 Intialization Page 1



13. Select the required services and click **Next**.

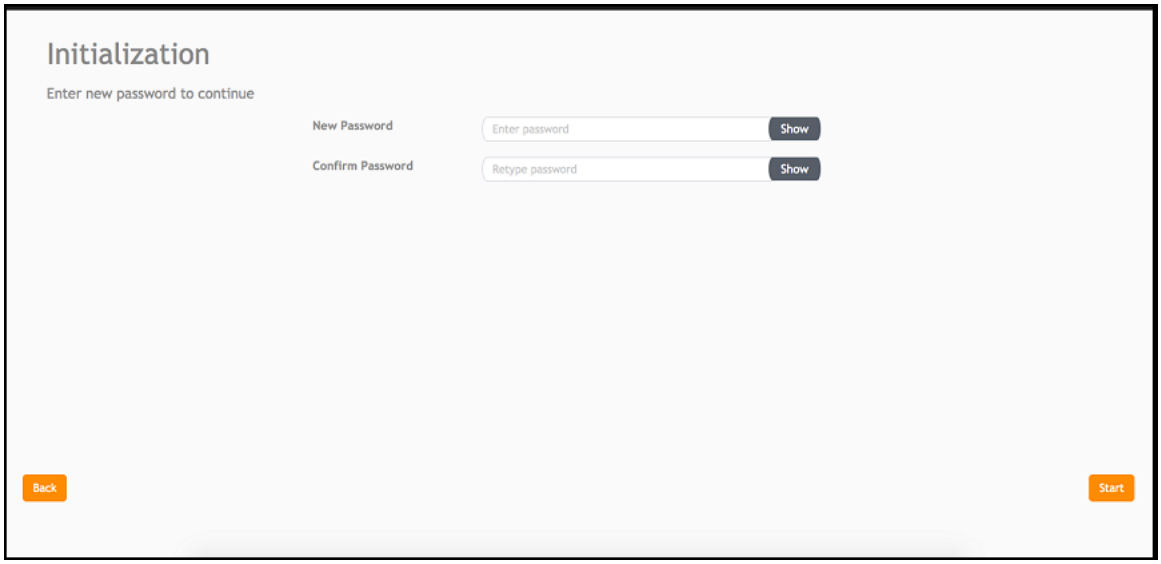
FIGURE 11 Initialization Page 2



14. Confirm the configuration information and click **Next**.

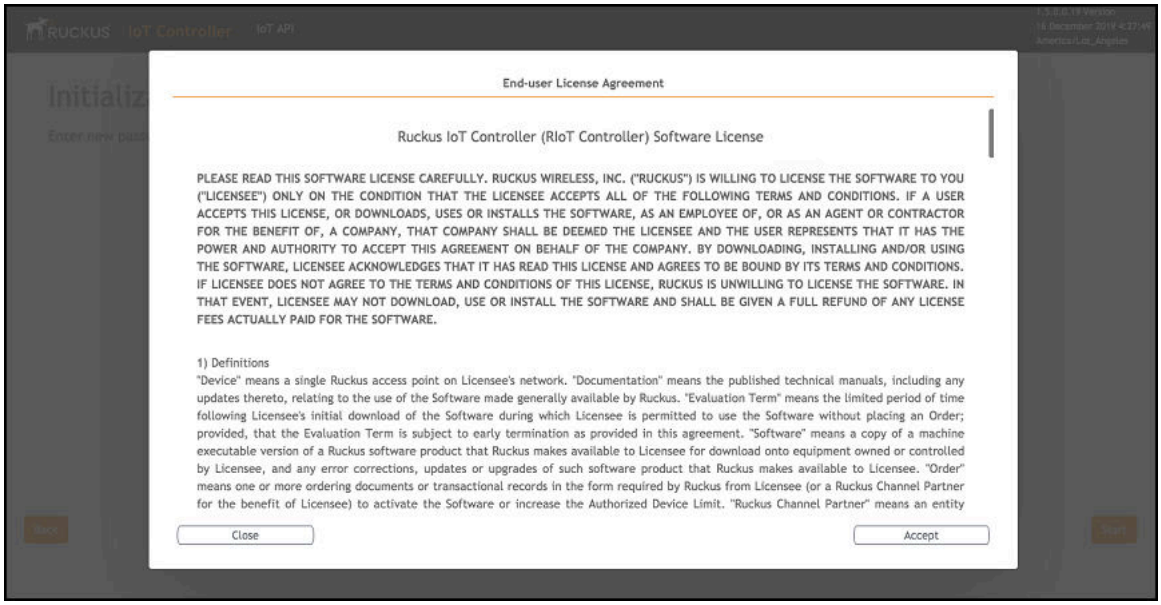
    The **RUCKUS IoT ControllerInitialization** page is displayed.

    FIGURE 12 Confirming the Password



15. Enter a new password and re-enter the new password in the **Confirm Password** field. Click **Start**.
16. The **End-user License Agreement** page is displayed. Click **Accept** to accept the RUCKUS IoT Controller license.

    FIGURE 13 End-user License Agreement Page



You are ready to configure and start the RUCKUS IoT Controller services. Refer to the *RUCKUS IoT Controller Configuration Guide* for more information.

Installing a KVM Guest Using virsh Commands

The RUCKUS IoT Controller can be installed on the KVM Guest using virsh commands.

1. Use the **tar -xvf vriot-qcow2-2.0.0.0.x.tar** command to extract the vriot-qcow2-2.0.0.0.x.tar file.
2. Use the **sudo mv vriot-2.0.0.0.x.qcow2 /var/lib/libvirt/images/** command to move the qcow2 image to the libvirt images path..
3. Use the **virsh define vriot-2.0.0.0.x.xml** command to define the VM.

   NOTE
   You must edit the XML file to add it to the network interface

4. Use the **virsh start Ruckus-IoT-Controller** command to start the virtual machine (VM).
5. Use the **virsh console Ruckus-IoT-Controller** command to obtain console access to the VM.

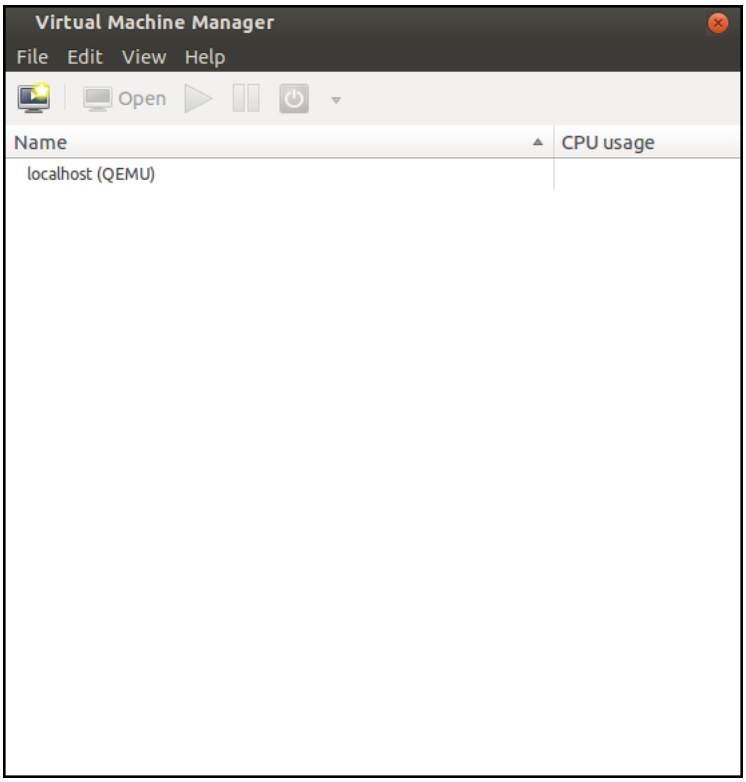
Installing a KVM Guest Using Virtual Machine Manager

The RUCKUS IoT Controller can be installed on a KVM guest using Virtual Machine Manager.

1. Download the RUCKUS IoT Controller distribution package in the .tar file format from the RUCKUS Support website at https://support.ruckuswireless.com.
2. Use the **tar -xvf filename.tar** command to obtain the qcow2 image file and template file.
3. Open the Virtual Machine Manager.

4. From the **Virtual Machine Manager** menu, select **File** > **Create a New Virtual Machine**.

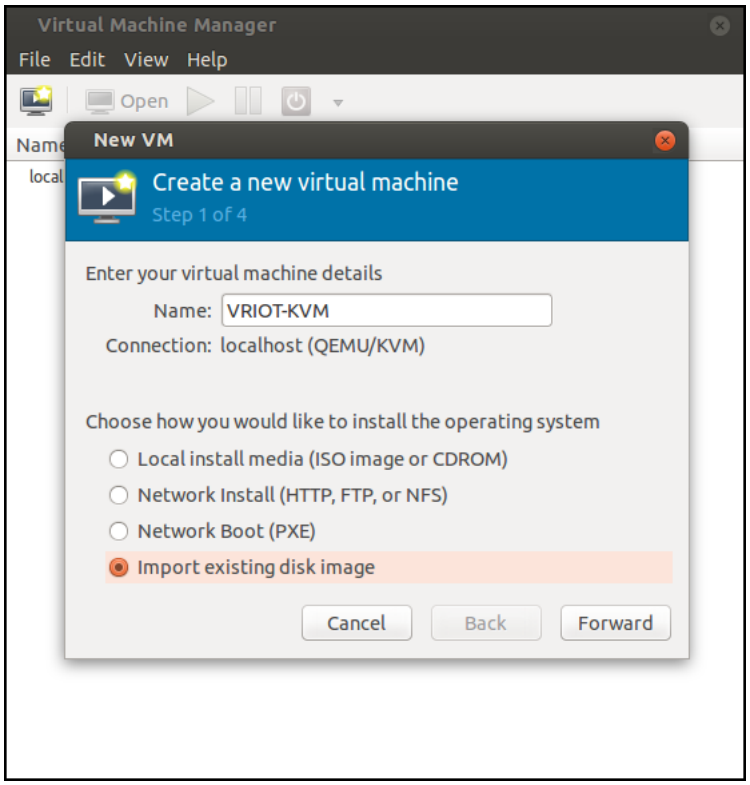
FIGURE 14 Virtual Machine Manager Menu



The **New VM** dialog box is displayed.

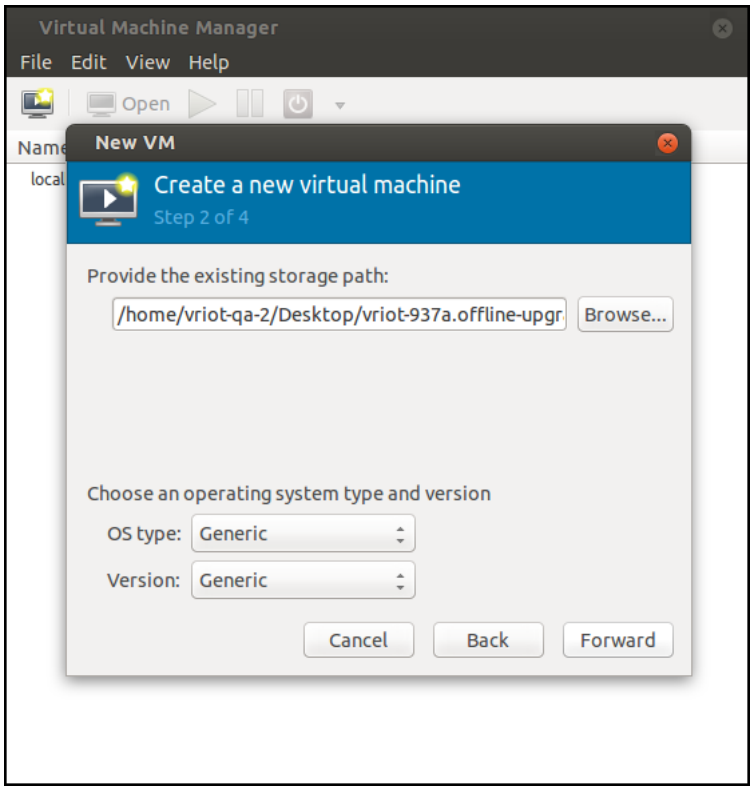
5. Enter the name of the virtual machine, select **Import existing disk image**, and click **Forward**.

FIGURE 15 New VM Dialog Box Step 1



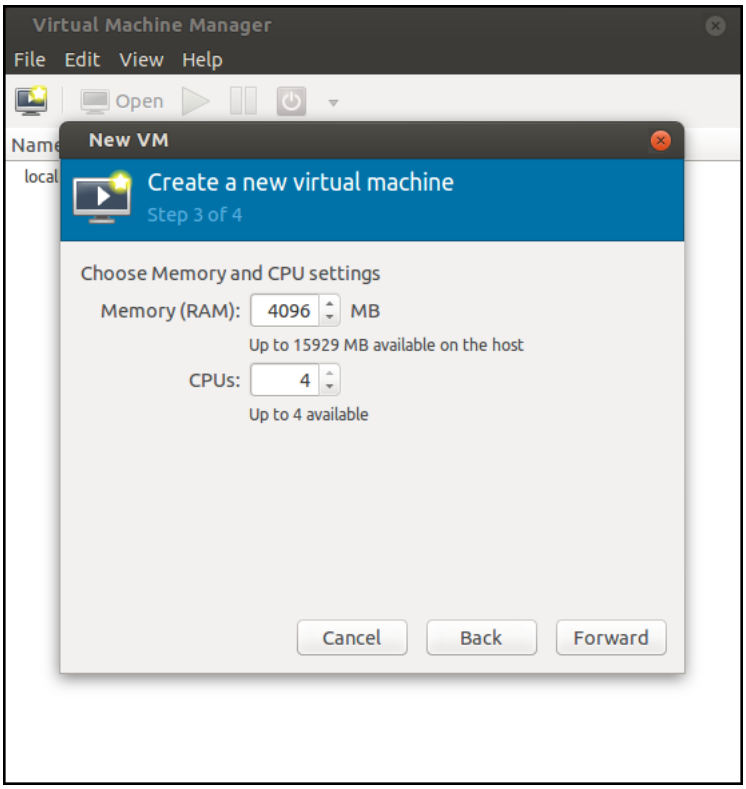
6. Enter the path of the .qcow image, the operating system type, and the version number, and click **Forward**.

FIGURE 16 New VM Dialog Box Step 2



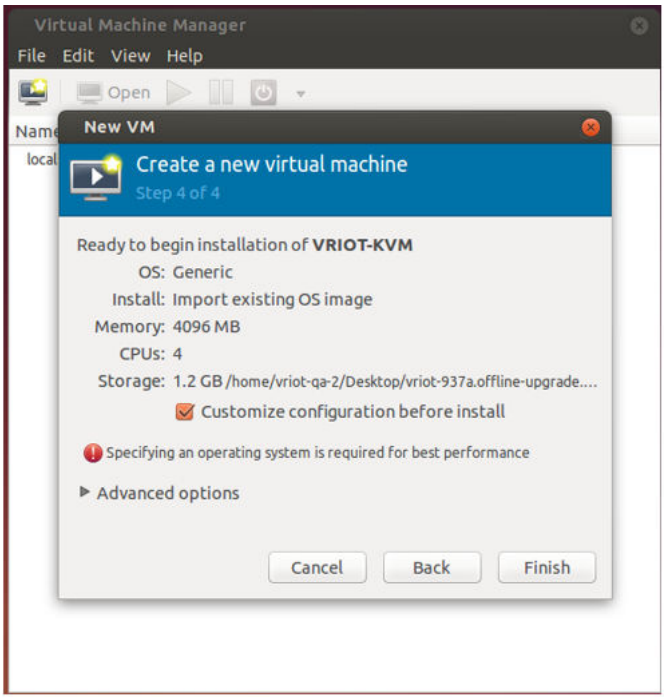
7. Select the memory size of RAM (in MB) and the number of central processing units (CPUs) for the virtual machine, and click **Forward**.

FIGURE 17 New VM Dialog Box Step 3



8. Select **Customize configuration before install**, and click **Finish**.

FIGURE 18 New VM Dialog Box Step 4

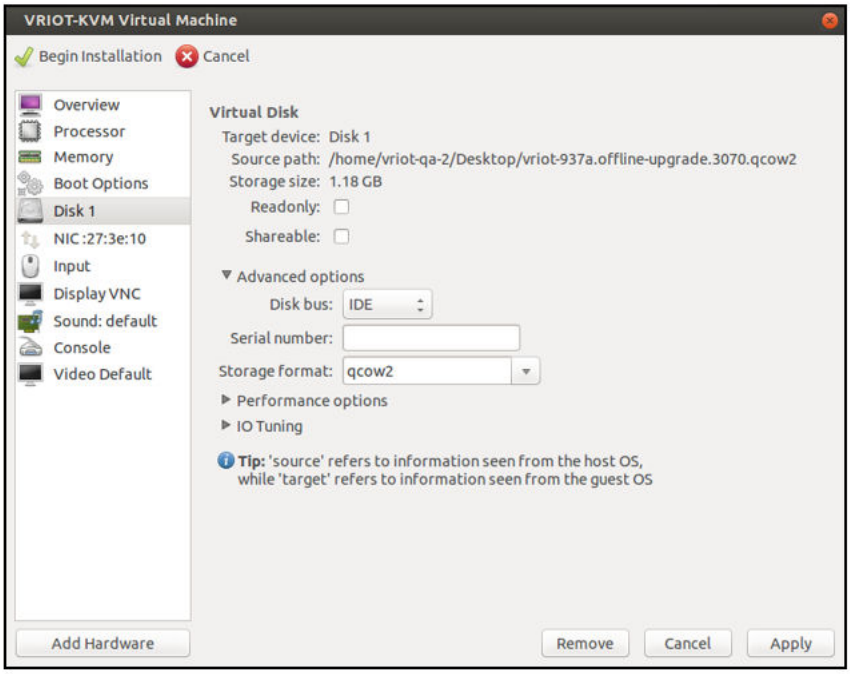


NOTE
Recommended clock speed is 3.1Ghz.

The RUCKUS IoT Controller installation on the virtual manager begins.

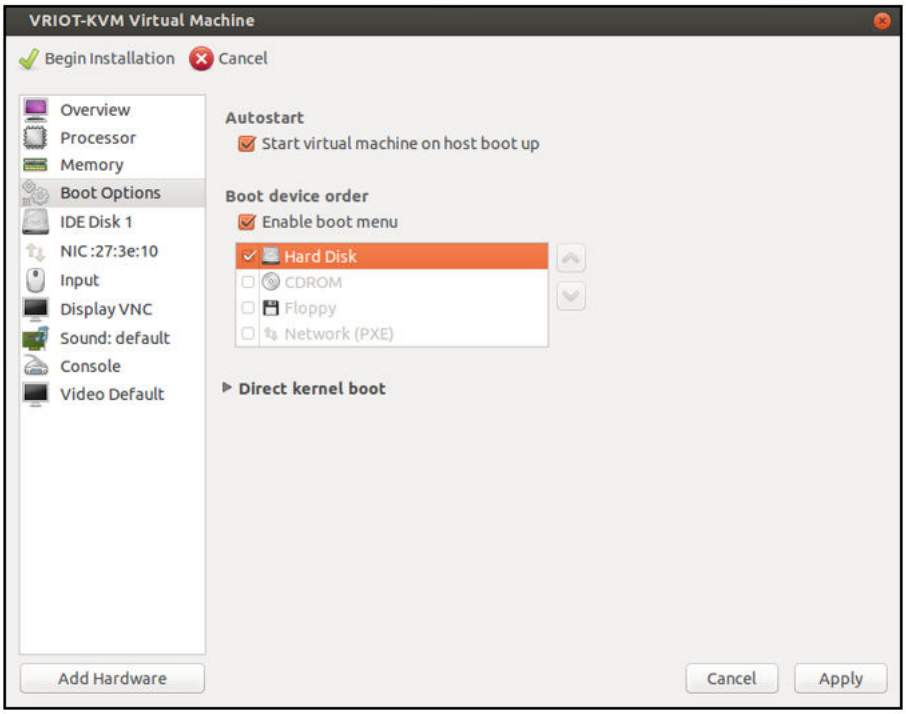
9. After the installation has completed, open the Virtual Machine Manager. Select **Disk** in the left pane and information about the disk is displayed. Expand **Advanced options** and ensure that the disk bus is **IDE** and the storage format is **qcow2**.

FIGURE 19 Virtual Disk Configuration



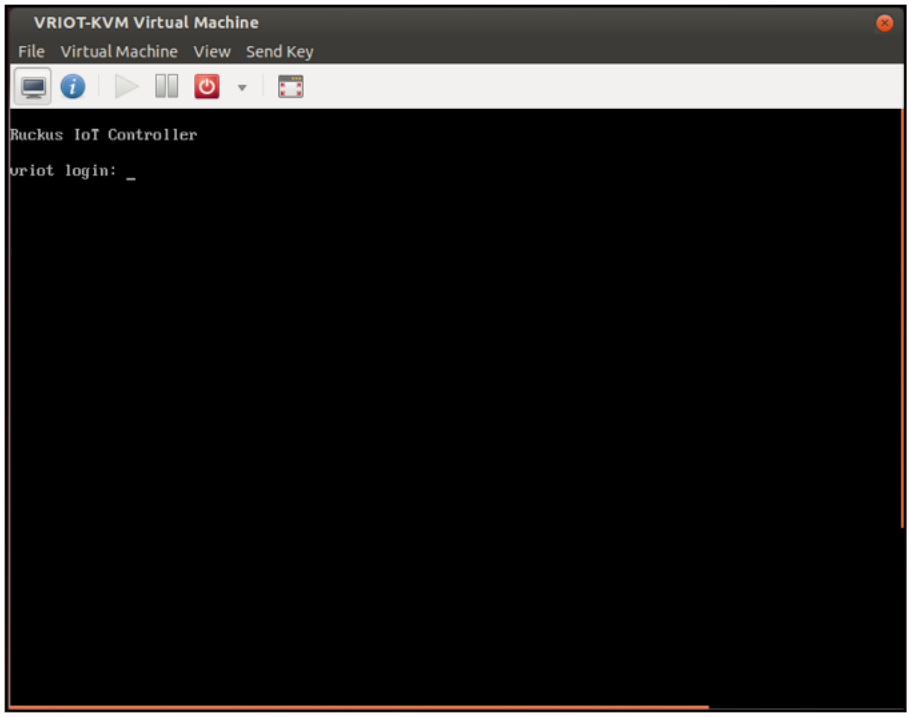
10. Select **Boot Options** in the left pane. Ensure that **Start virtual machine on host boot up** and **Enable boot menu** are selected. Select **Hard Disk** and click **Apply**.

FIGURE 20 Boot Options Configuration



11. Log in to the RUCKUS IoT Controller using the username and password.

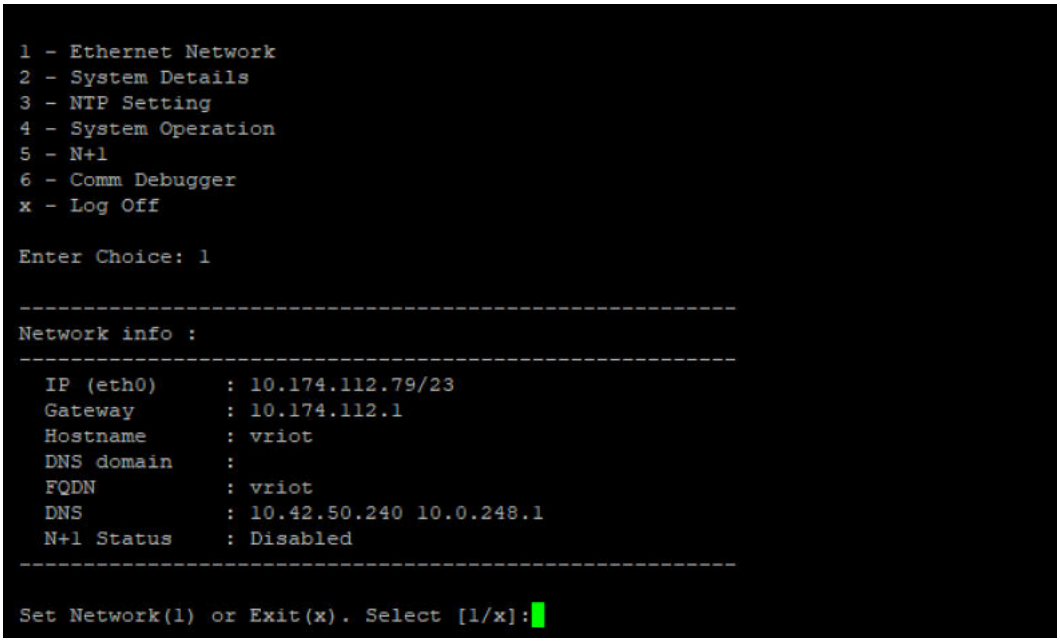
FIGURE 21 RUCKUS IoT Controller Login Prompt



12. Enter **1** in the **Enter Choice** field to get the IP address of the virtual machine.

    This information is needed to access the RUCKUS IoT Controller **Initialization** page.

    FIGURE 22 Displaying the IP Address



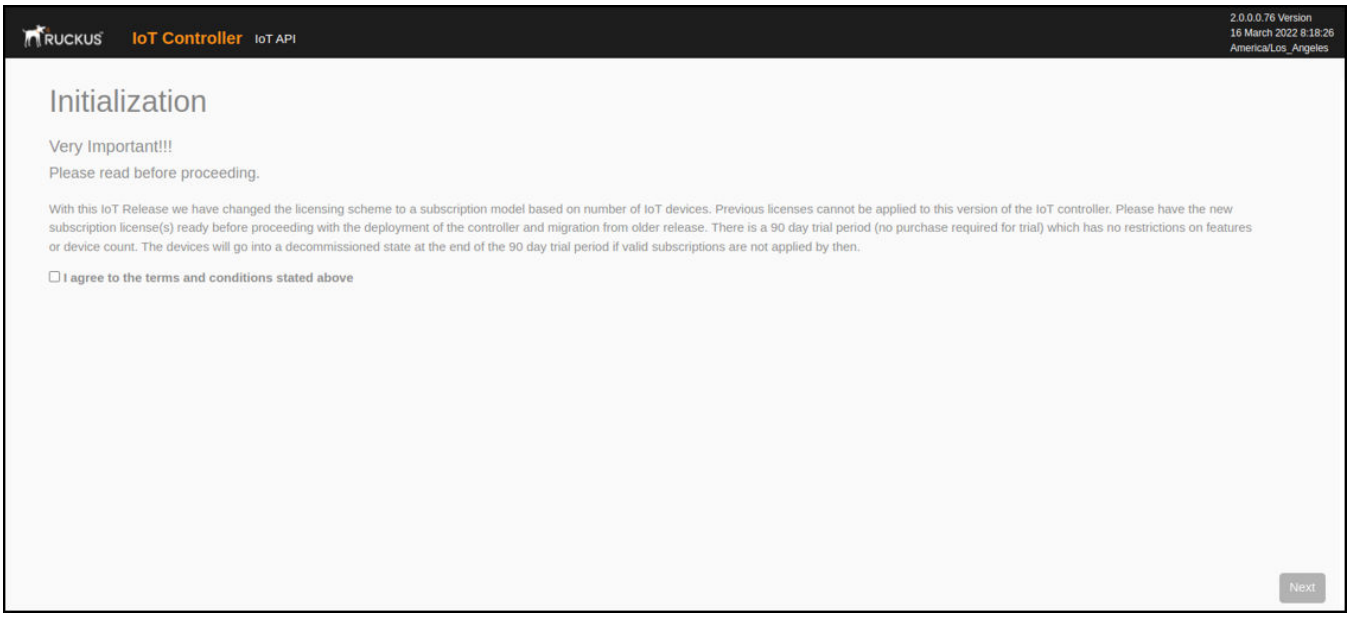
    To configure N+1 on the RUCKUS IoT Controller, enter **5** in the **Enter Choice** field. Refer to "Configuring N+1" in the *RUCKUS IoT Controller Configuration Guide* to complete this configuration.

13. Open a web browser on your host machine and enter the IP address of the VM in the address bar.

    HTTP and HTTPS on ports 80 and 443 are supported.

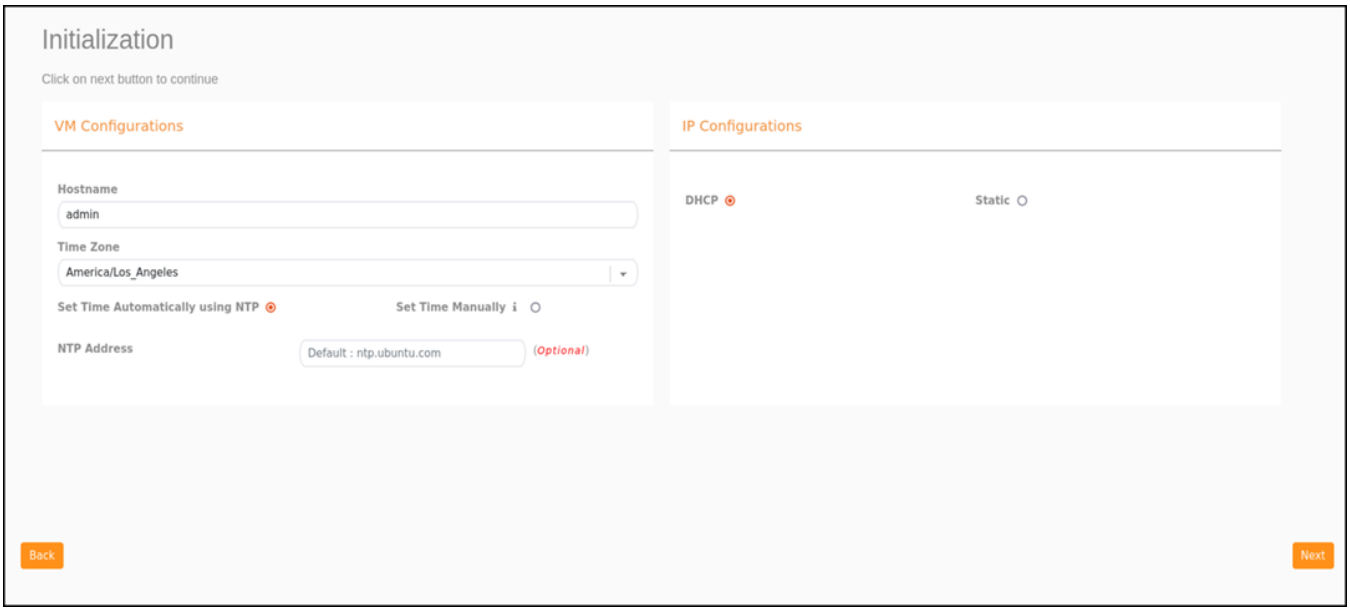
    The **Initialization** page is displayed.

FIGURE 23 Initialization Page



14. Select the required services and click **Next**.

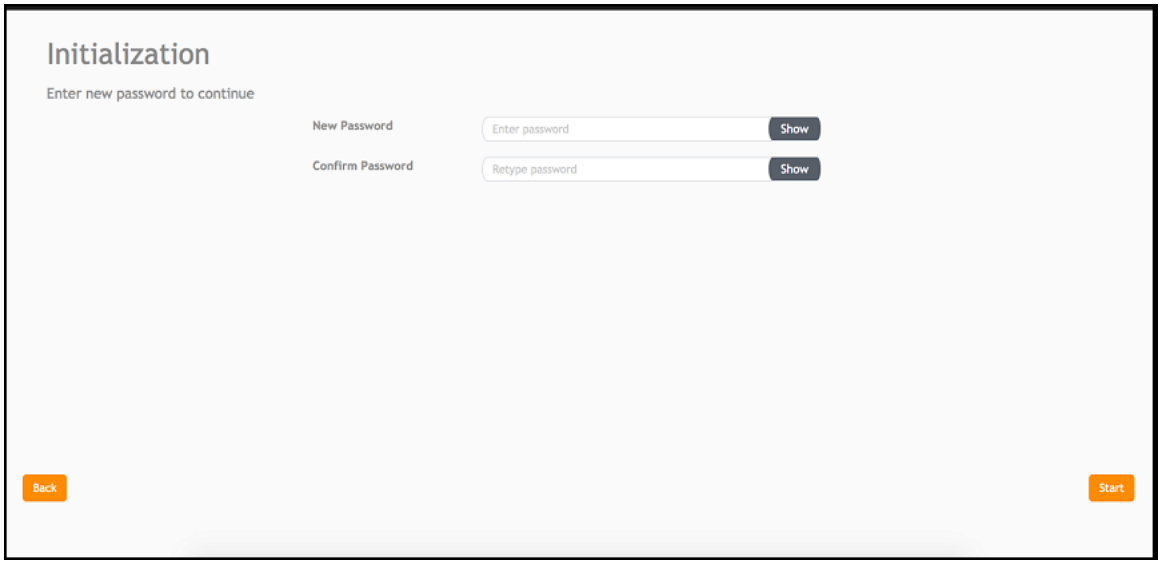
FIGURE 24 Inital VM and IP Configurations



15. Confirm the configuration information and click **Next**.

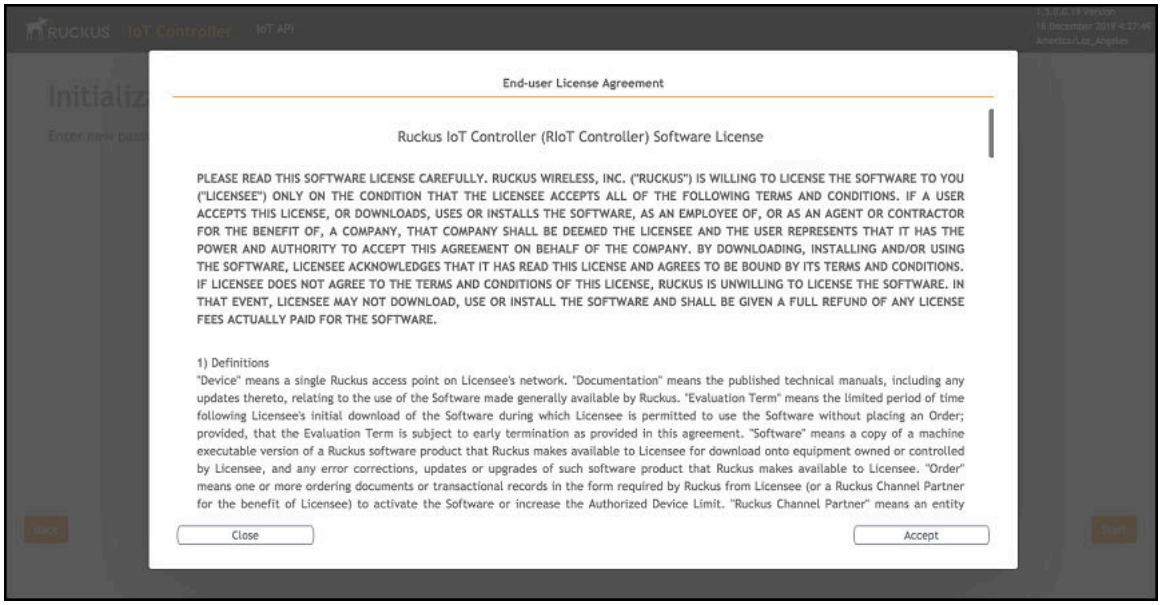
    The **RUCKUS IoT ControllerInitialization** page is displayed.

    FIGURE 25 Confirming the Password



16. Enter a new password and re-enter the new password in the **Confirm Password** field. Click **Start**.
17. The **End-user License Agreement** page is displayed. Click **Accept** to accept the RUCKUS IoT Controller license.

    FIGURE 26 End-user License Agreement Page



You are ready to configure and start the RUCKUS IoT Controller services. Refer to the *RUCKUS IoT Controller Configuration Guide* for more information.

Installing RUCKUS IoT Controller on Hyper-V

The RUCKUS IoT Controller can be installed on Hyper-V using a VHD file.

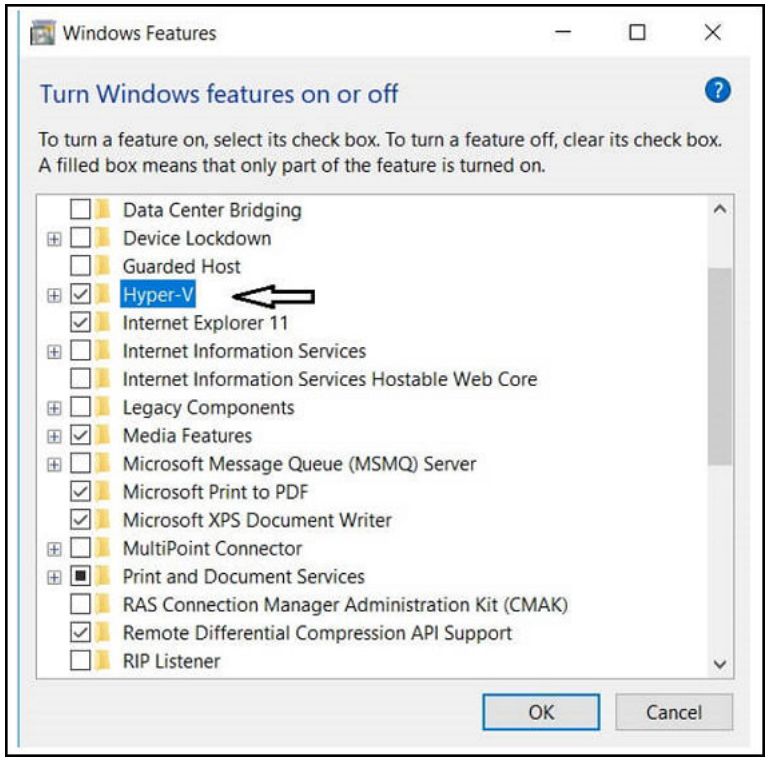
Installing Hyper-V

1. Extract the VMDK file from the .OVA file using a zip extractor application such as 7-Zip, WinZip, WinRAR, and so on.
2. Convert the VMDK to VHD using a tool such as StarWind V2V Converter or QEMU disk image utility for Windows.
3. From the Windows 10 **Start** menu, enter **Settings**, and press **Enter**.

   The **Windows Settings** page is displayed.
4. Click **Apps**, and select **Apps and Features**.
5. Under **Related settings**, select **Programs and Features.**

   The **Uninstall or change program** page is displayed.
6. Select **Turn Windows Features on or off**.

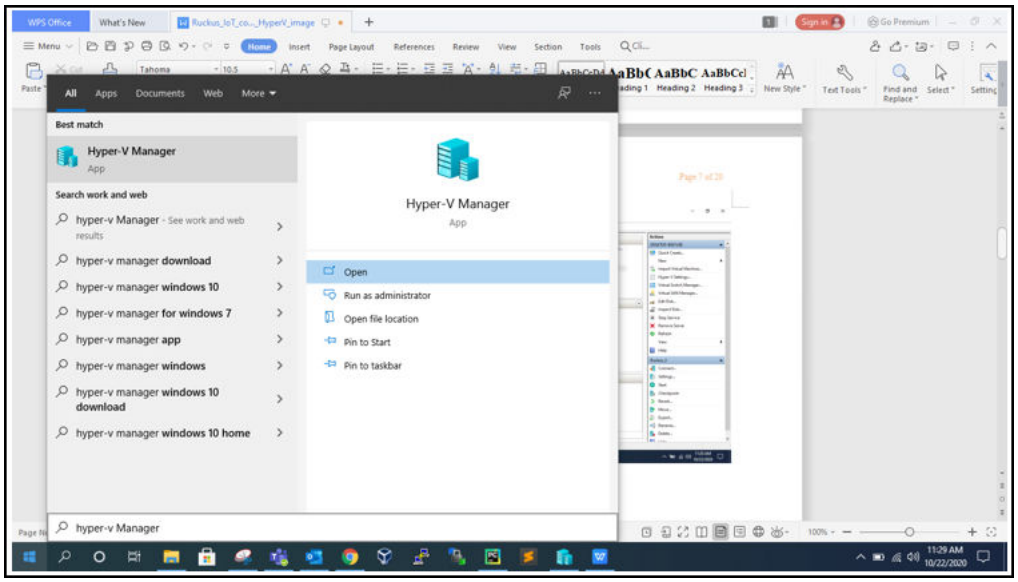
   FIGURE 27 Windows Features



7. Select **Hyper-V**, and click **OK**.

8. From the Windows 10 **Start** menu, enter **Hyper-V Manager**, and press **Enter**.

   FIGURE 28 Hyper-V Manager App



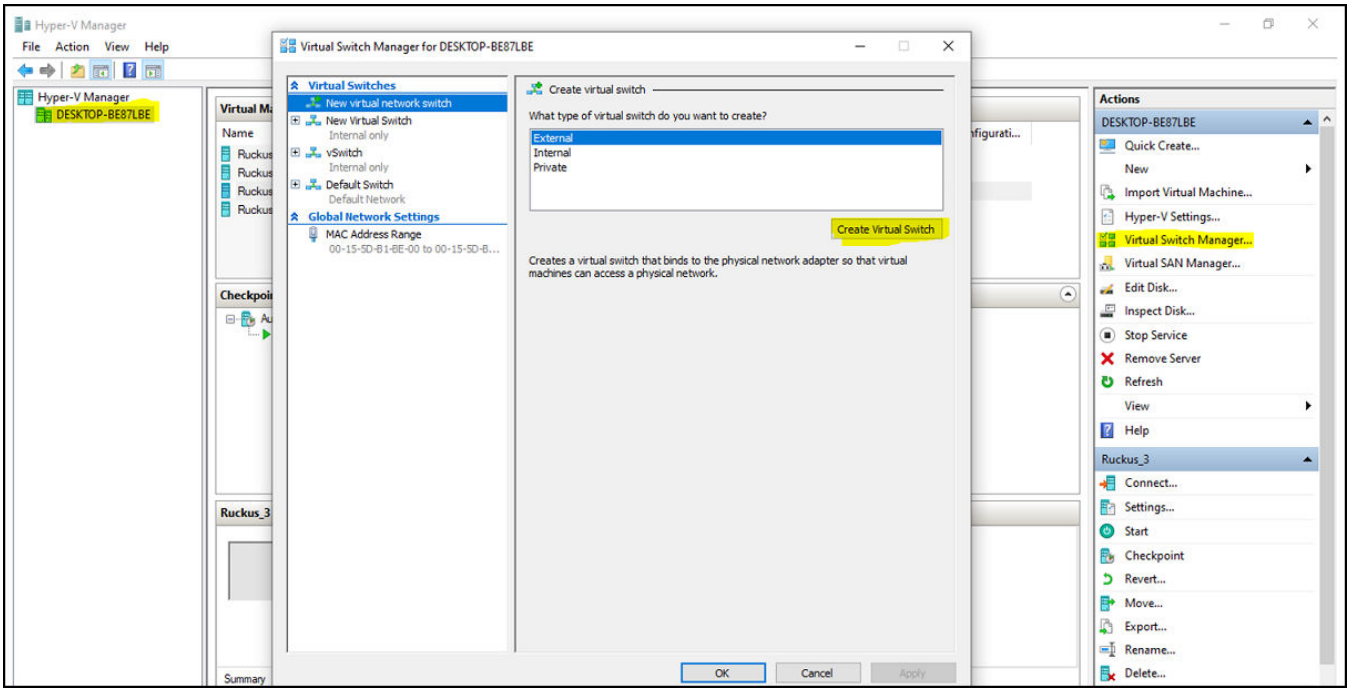
9. Click **Open**.

   The **Hyper-V Manager** page is displayed.

10. Click the Hyper-V host computer name in the left pane, and select **Virtual Switch Manager** from the **Actions** list in the right pane.

    The **Virtual Switch Manager** dialog box is displayed.

FIGURE 29 Creating Virtual Switch



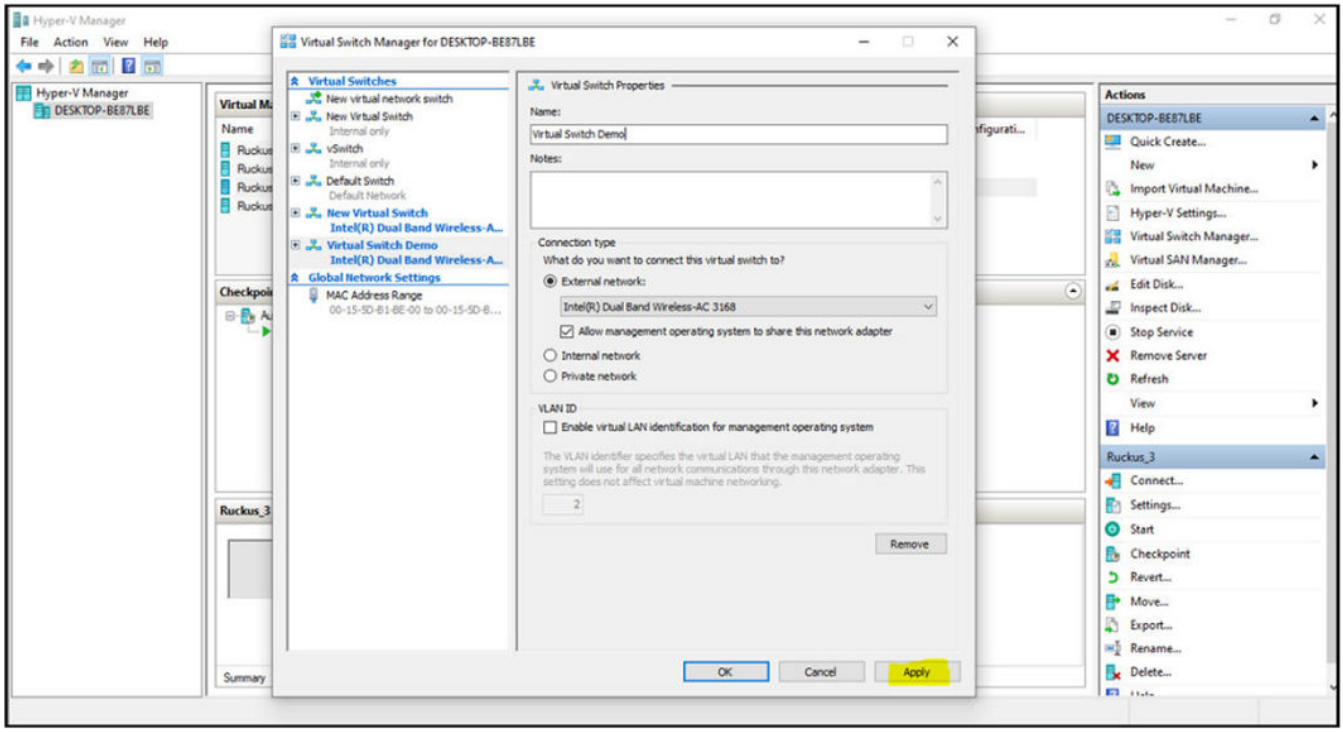
11. Select the type of virtual switch (**External**, **Internal** or **Private**), click **Create Virtual Switch**, and click **OK**. .

    The **Virtual Switch Properties** dialog box is displayed.

12. In the **Name** field, enter the name of the virtual switch. You can enter additional information in the **Notes** field.

13. Under **Connection type**, select **External network**, **Internal network**, or **Private network**. If you select **External network**, select the type of network adapter you want to use, and select the **Allow management operating systems to share the network adapter** check box.

    FIGURE 30 Selecting the Network



14. Click **Apply**.

Creating a New Virtual Machine

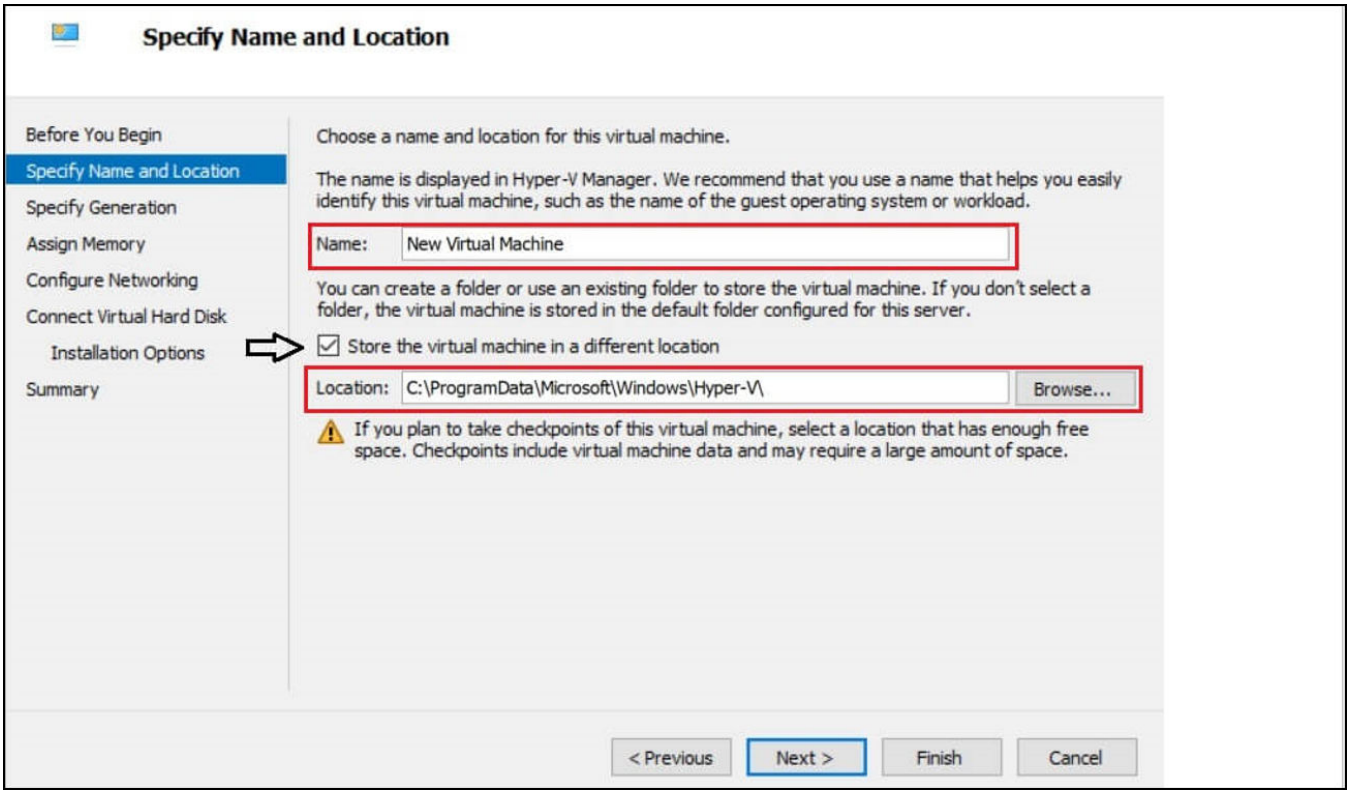
1. After installing Hyper-V on your computer, you can create new virtual machine. To create Virtual Machine, type Hyper-V Manager in the search box situated on the taskbar below and press ENTER.
2. From the Windows 10 **Start** menu, enter **Hyper-V Manager**, and press **Enter**.

   The **Hyper-V Manager** page is displayed.
3. Click **Action** tab, select **New** > **Virtual Machine**.

   The **New Virtual Machine Wizard** is displayed. You must complete each of the virtual machine configuration options through the wizard.

4. Under **Specify Name and Location**, in the **Name** field, enter the name of the VM. Either store the VM in the default location or select the **Store the virtual machine in a different location** check box, and click **Browse** to select a different location.

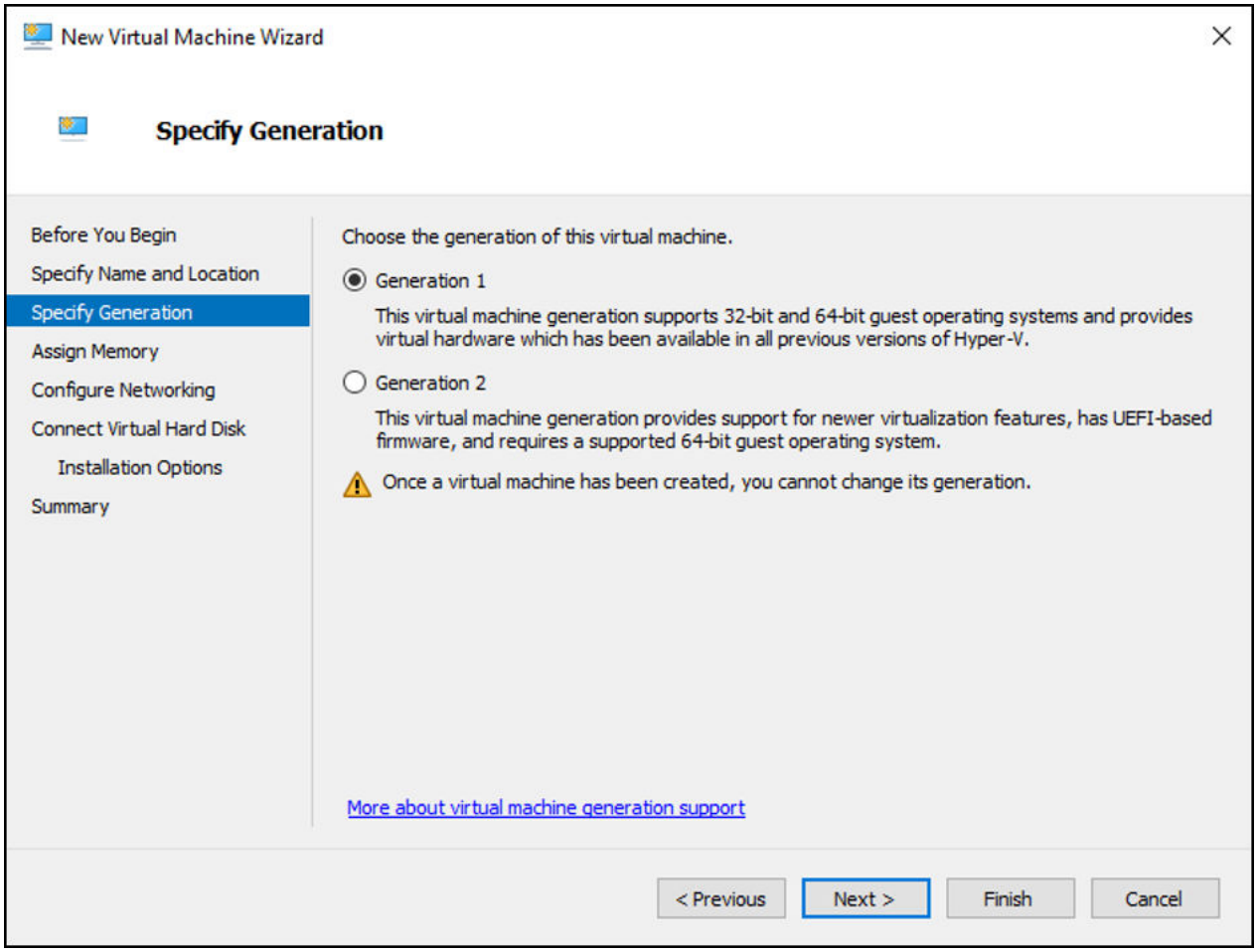
FIGURE 31 Specify Name and Location Wizard Page



5. Click **Next**.

6. Under **Specify Generation**, select **Generation 1** or **Generation 2**. It is recommended to select **Generation 1**, because Generation 1 VMs support 32-bit and 64-bit guest operating systems and BIOS-based architectures.

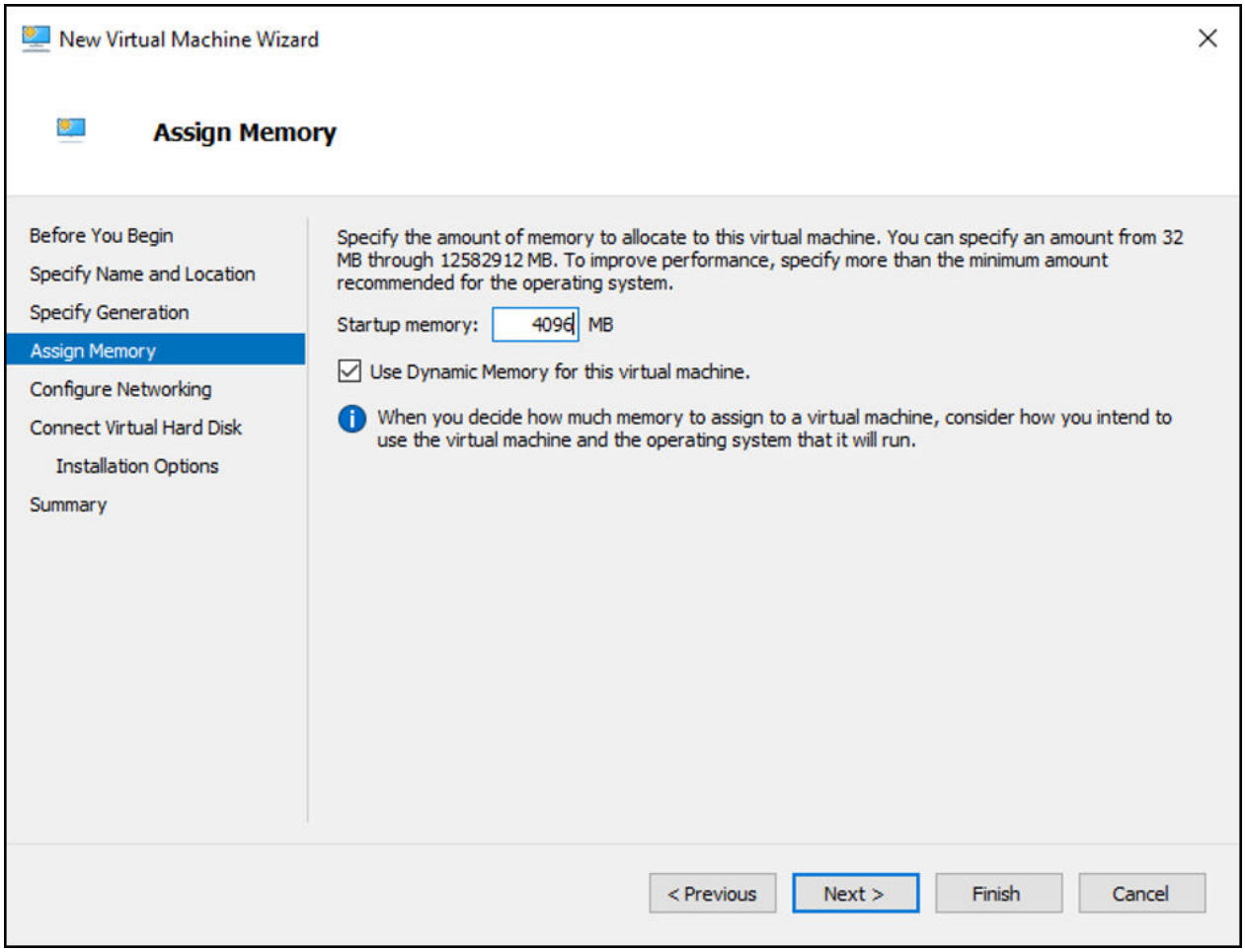
   FIGURE 32 Specify Generation Wizard Page



7. Click **Next**.

8. Under Assign Memory, in the Startup memory field, enter the amount of memory that will be assigned to the VM (4096 MB as it is minimum RAM required for RUCKUS IoT controller). Select the **Use Dynamic Memory for this virtual machine** check box to save memory.

FIGURE 33 Assign Memory Wizard Page

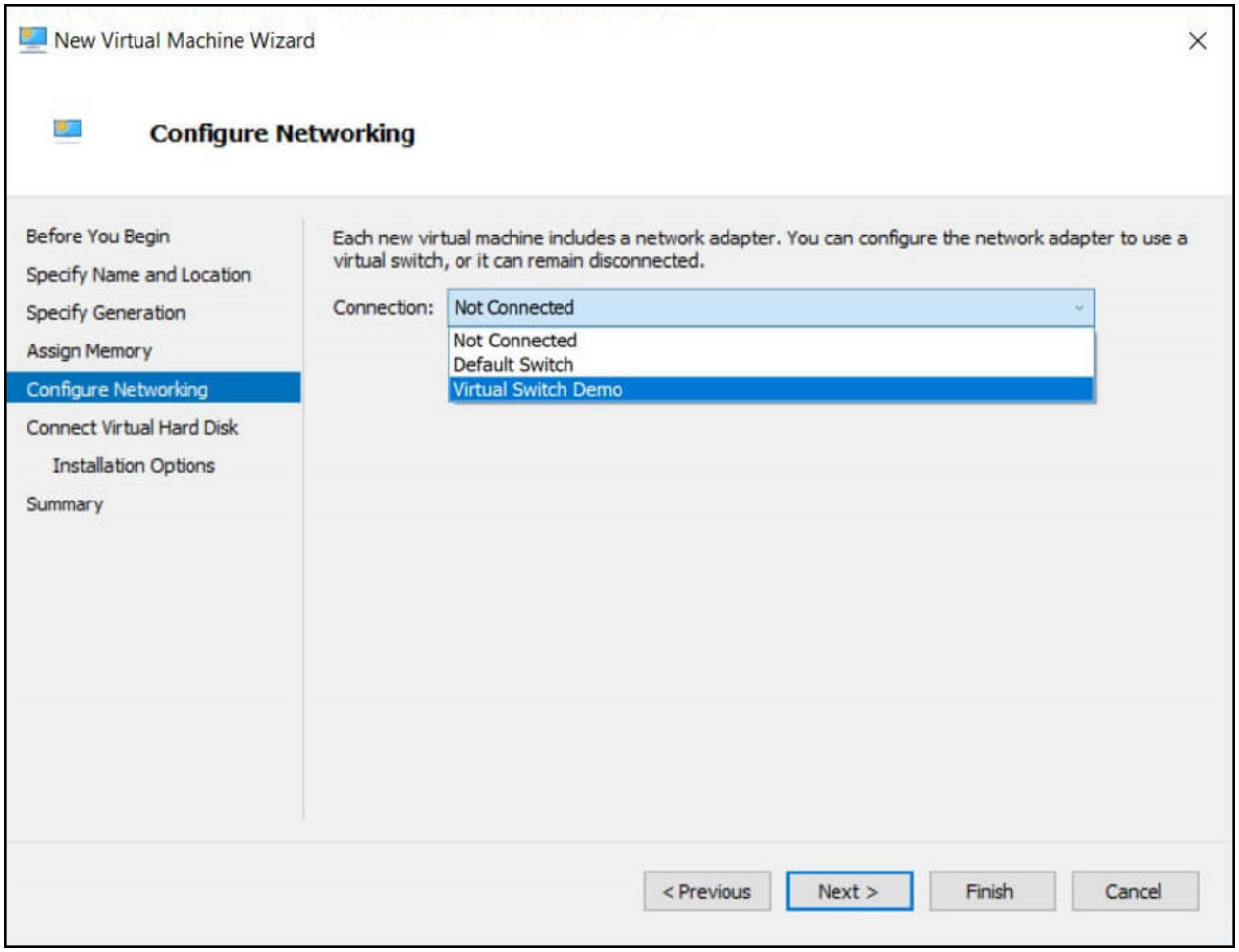


9. Click **Next**.

10. Under **Configure Networking**, select the connection that will be used when connecting the VM to the network. If you have not created a virtual switch earlier, select **Not Connected**.

    NOTE
    Use the default switch for the internal network, and use a different virtual switch with an external network.

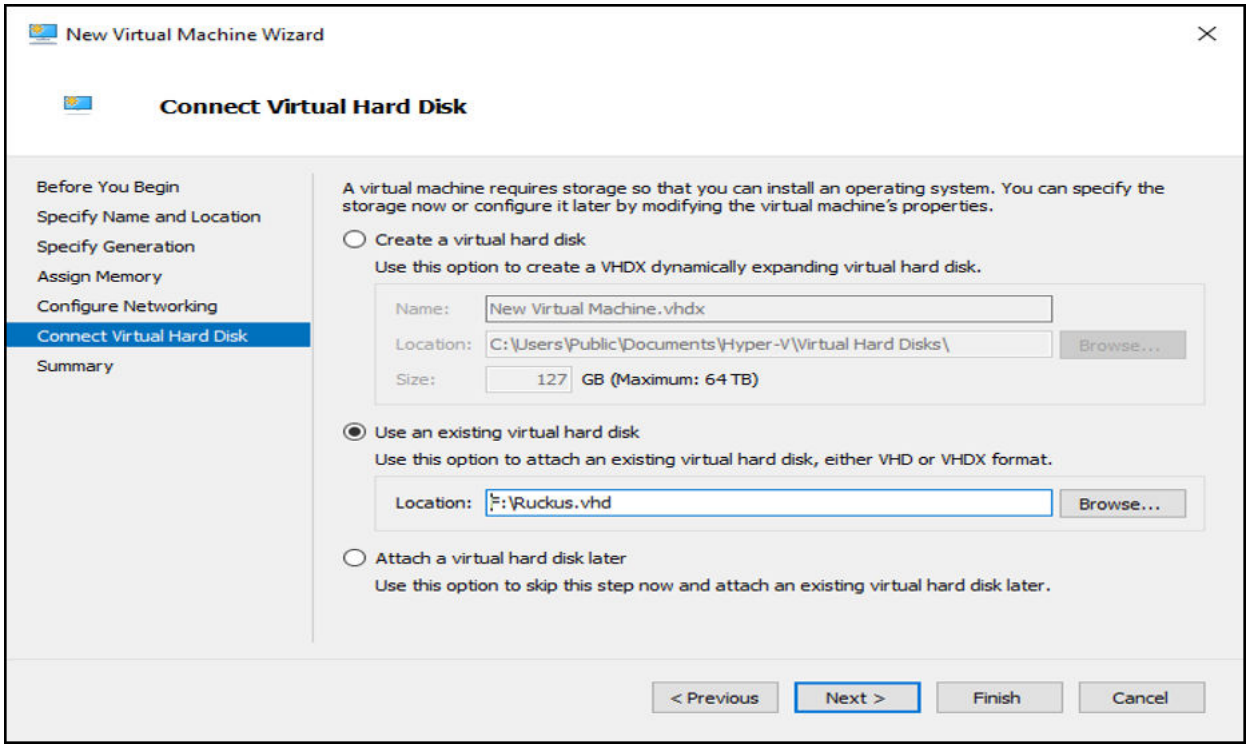
FIGURE 34 Configure Networking Wizard Page



11. Click **Next**.

12. Under **Connect Virtual Hard Disk**, select **Use an existing virtual hard disk to attach an existing virtual hard disk** in VHD or VHDX format, and click **Browse** to select the location of the virtual hard disk.

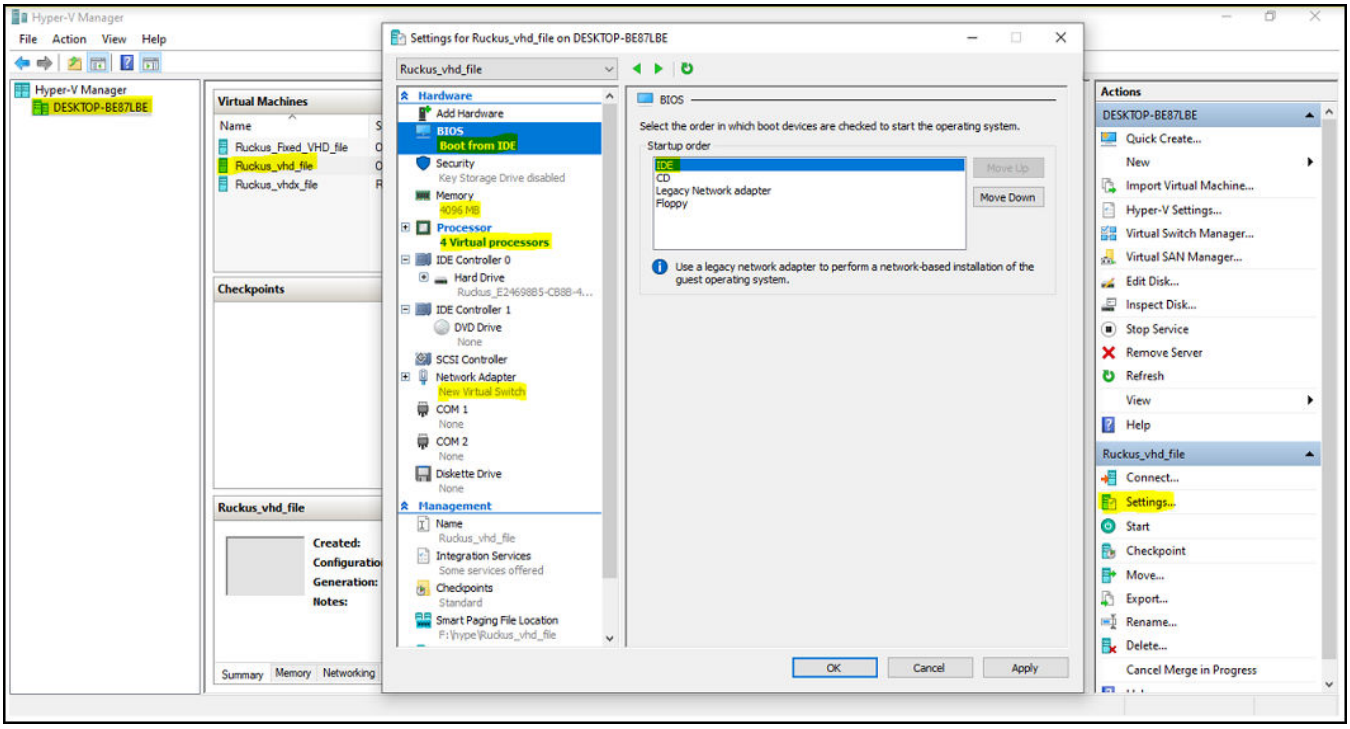
FIGURE 35 Connect Virtual Hard Disk Wizard Page



13. Click **Finish**.

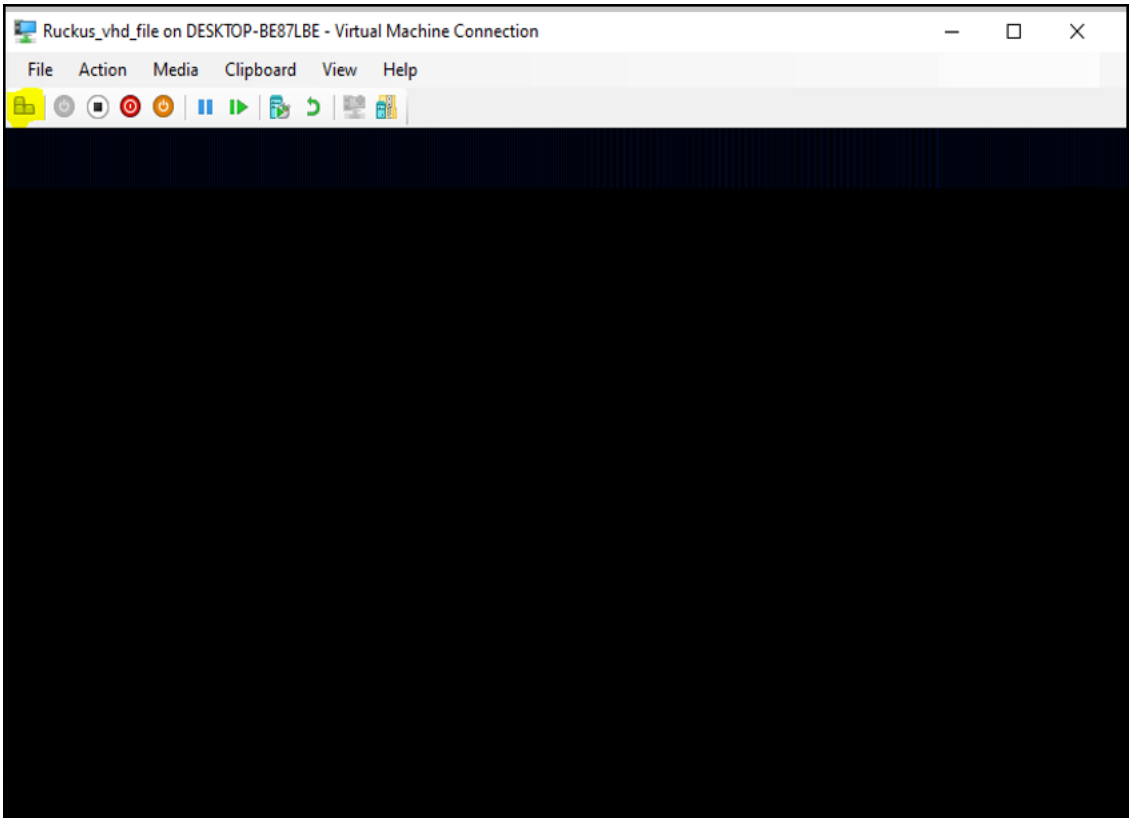
14. Open the **VM in Hyper-V Manager** and from the **Actions** list in the right pane, click **Settings**. Confirm the displayed VM configuration settings such as number of **PROCESSOR** is 4, **RAM** size is 4096 MB, and **HDD** size is 20 GB, click **Apply**, and click **OK**.

FIGURE 36 Confirming the VM Settings



NOTE
If you open the VM in Hyper-V Manager and a black screen is displayed, press **Ctrl+Alt+End** or **Ctrl+Alt+Delete** after a restart until the boot screen is no longer visible.

FIGURE 37 Appearance of Black Screen



Upgrading the Software

- Upgrading the AP Firmware Using SmartZone 100 or Virtual SmartZone Controller.....47

Upgrading the AP Firmware Using SmartZone 100 or Virtual SmartZone Controller

You can upgrade the existing AP firmware using a SmartZone 100 controller or Virtual SmartZone.

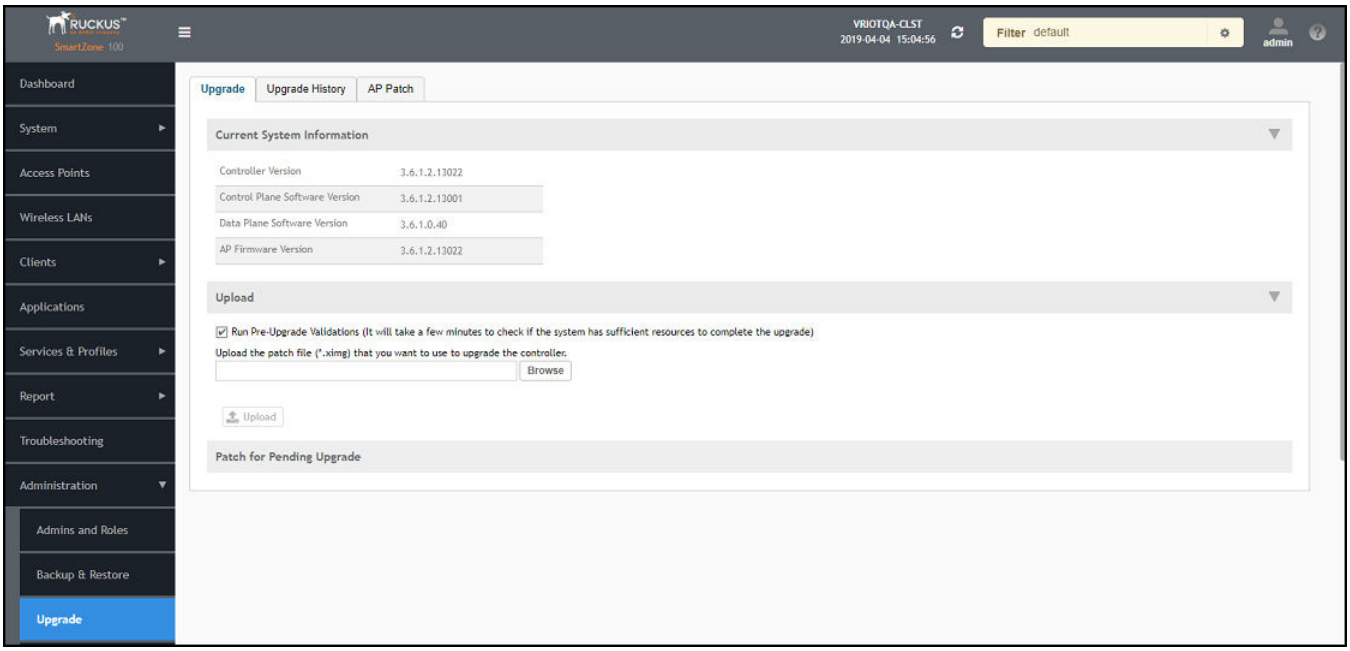
Always back up the controller before attempting a software upgrade. If you are managing a multi-node cluster, back up the entire cluster, and then verify that the backup process has completed successfully. If you have an FTP server, back up the entire cluster and upload the backup files from all the nodes in a cluster to a remote FTP server.

NOTE
RUCKUS strongly recommends backing up the SmartZone 100 controller cluster before performing an upgrade. If the upgrade process fails for any reason, you can use the latest backup file to restore the controller cluster.

NOTE
Before beginning the upgrade, you must obtain a valid controller software upgrade file from RUCKUS Support or an authorized RUCKUS reseller.

1. Copy the software upgrade file that you received from RUCKUS 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. From the SmartZone 100 user interface, click **Administration** > **Upgrade**.

FIGURE 38 SmartZone 100 User Interface



3. Select the **Upgrade** tab.

   Under **Current System Information**, the controller version information is displayed.

   NOTE
   The **Upgrade History** tab displays information about previous cluster upgrades.

4. Under **Upload**, select **Run Pre-Upgrade Validations** to verify if the data migration was successful. This option allows you to verify data migration errors before performing the upgrade.

   NOTE
   You can still upgrade even if there are data migration errors.

5. Click **Browse** to select the .ximg patch file.
6. Click **Upload** to upload the controller configuration to the configuration in the patch file.

   The controller uploads the file to its database, and then performs file verification. After the file is verified, the **Patch for Pending Upgrade** section is populated with information about the upgrade file. If data migration was unsuccessful, the following error is displayed:

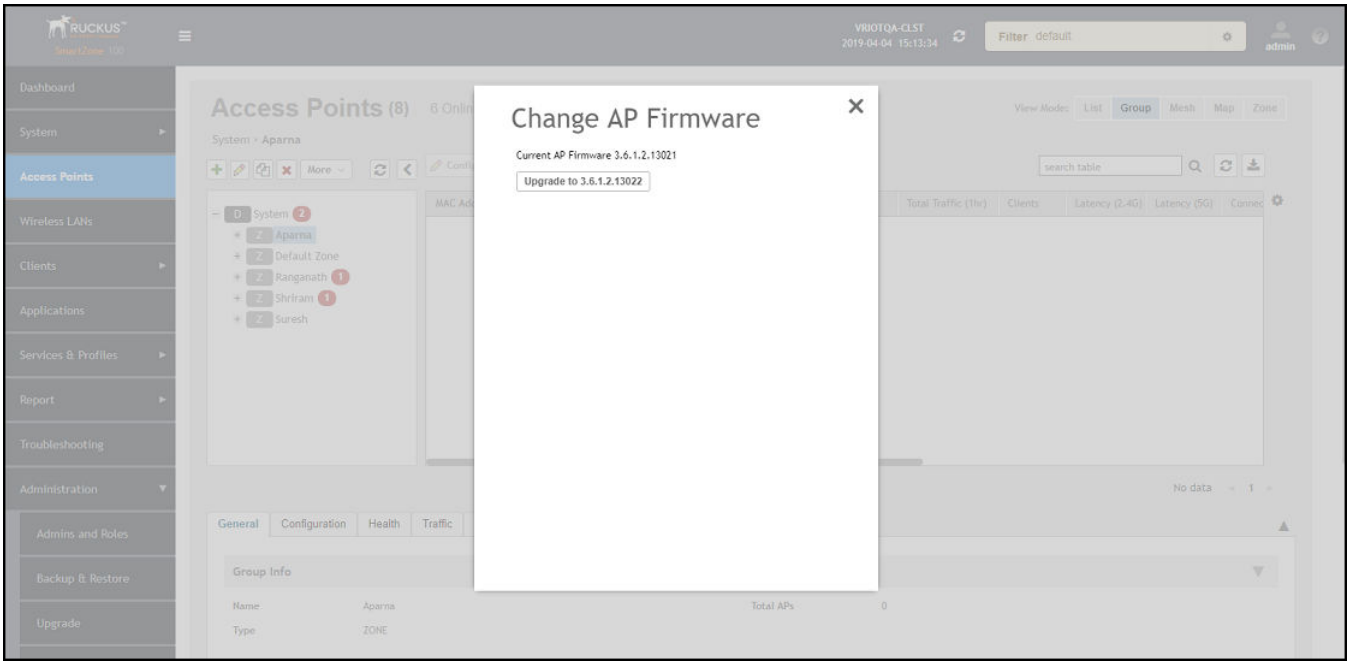
   ```
   Exception occurred during the validation of data migration. Please apply the system configuration backup and contact system administrator.
   ```

7. If the controller configuration upload was successful, perform one of the following steps:
   - Click **Upgrade** to start the upgrade process without backing up the current controller cluster or its system configuration.
   - Click **Backup & Upgrade** to back up the controller cluster and system configuration before performing the upgrade.

   When the upgrade (or backup-and-upgrade) process is complete, the controller logs you out of the web interface automatically. When the controller login page displays again, you have completed upgrading the controller.
8. From the Smartzone 100 user interface, click **Access Points**.

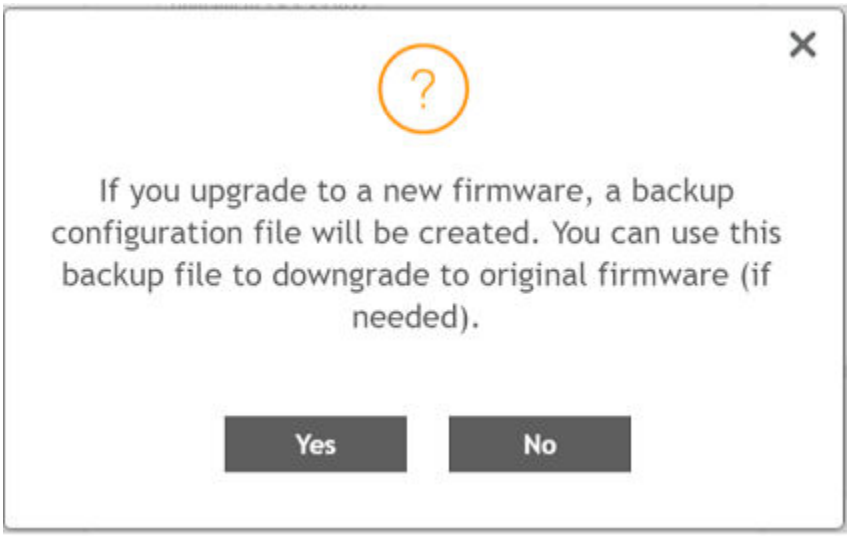
9. Select the zone from the list, click **More**, and select **Change AP Firmware** from the list. The **Change AP Firmware** dialog box is displayed. The current AP firmware version is displayed.

FIGURE 39 Changing the AP Firmware



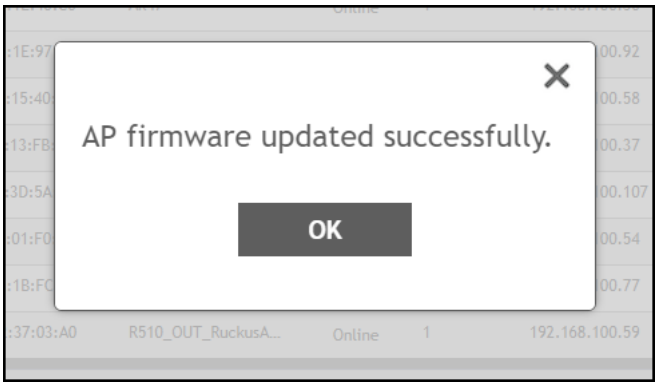
10. Click **Upgrade** to upgrade to the new firmware version.

FIGURE 40 Upgrading to New Firmware



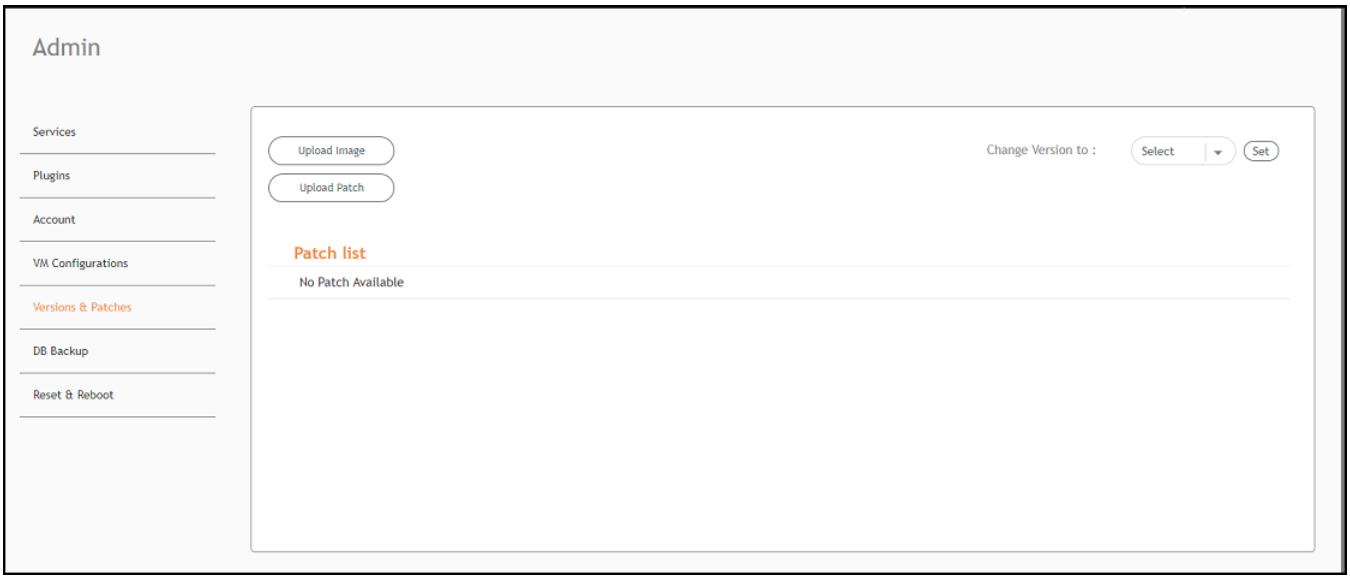
11. Click **Yes**. A confirmation message is displayed stating that the firmware version was updated successfully.

    FIGURE 41 Update Successful Confirmation Message



12. Click **OK**.
13. Open the RUCKUS IoT Controller. From the **Admin** tab, click **Versions and Patches**.

    FIGURE 42 Uploading an Image



14. Click **Upload Image** and select the tar.gz image.
15. From the **Change Version to** list, select the image, and click **Set**.

The RUCKUS IoT Controller is upgraded successfully to the new build.

Hot Upgrade of IoT Gateway

The "hot upgrade" of the IoT Gateway supports the offline upgrade of an AP IoT bundle from the IoT Controller. If the controller is running a current IoT image, the system makes sure the IoT version of the APs is upgraded or downgraded to match the current system image. If there is any IoT version mismatch between the AP and the controller, a warning message is displayed on IoT AP page.

You can observe the offline upgrade of an AP in the following manner.

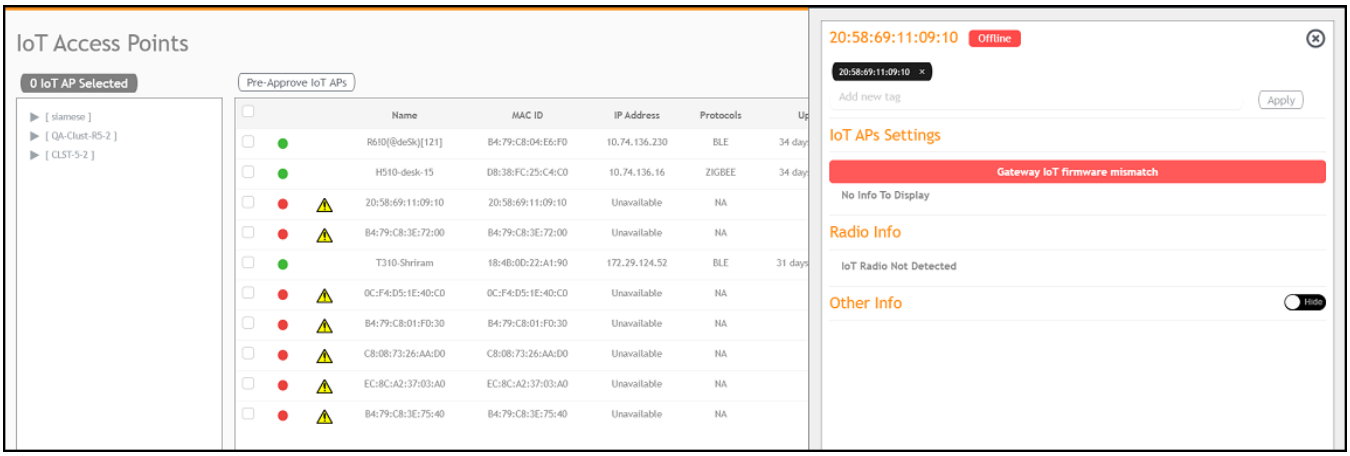
1. From the main menu, click **IoT APs**.

   The **IoT Access Points** page is displayed.

2. Select an IoT AP.

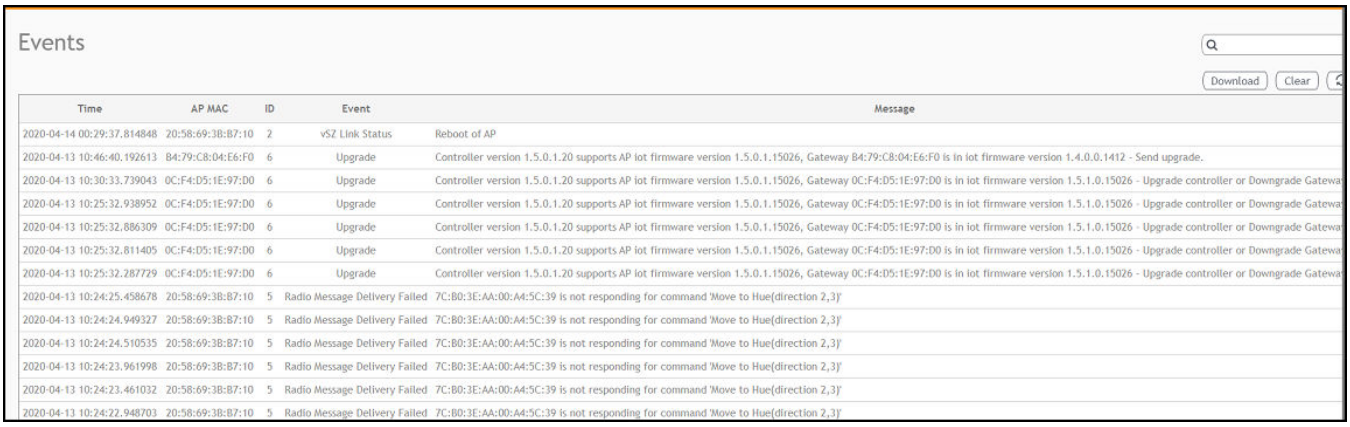
   NOTE
   If there is any IoT version mismatch between the AP and the controller, the following warning message is displayed: "Gateway IoT firmware mismatch".

FIGURE 43 Viewing IoT APs



3. From the main menu, click **Events** to learn more about the warning message.

FIGURE 44 Displaying Events



Deploying the APs

- Connecting a Set of IoT APs Using a Grouping Method.....53

Connecting a Set of IoT APs Using a Grouping Method

There are two methods to determine which set of IoT APs to connect with the IoT Controller:

- Isolate the IoT APs and non-IoT APs at Layer 2 (VLAN) or Layer 3 (IP) subnets. In this case, DHCP option 43 suboption 21 can be configured for networks with APs meant to connect with a particular IoT Controller. The syntax of suboption 21 is the same as suboption 6 for the Wi-Fi Controller.
- If network topology cannot be used for grouping, e.g., as a result of customer's network topology policies, the second method to use is static configuration method:

  NOTE
  Running **set-iotg-mqtt-broker ip** cli script is not recommended for the AP's already connected to the IoT controller.

  - Disable IoT processes on all APs.
  - Enable IoT processes only on IoT-enabled APs.
  - Set the IoT Controller IP address on the IoT-enabled APs.

The static configuration method can be accomplished using a vSZ AP CLI script. For example, in vSZ, you create a zone for the group of IoT-enabled APs that you want to connect to a particular IoT Controller. You then apply the vSZ AP CLI script to the zone that enables IoT (set iotg-enable 1) and set the IoT Controller IP address with the set iotg-mqtt-brokerip ip-address command.

Managing a License

- Activating a License..... 55

Activating a License

RUCKUS IoT Controller is a licensed product. The license model is based on a subscription. After purchasing RUCKUS IoT Controller, you are provided with a trial license that is valid for 90 days. You must purchase a subscription license based on your requirements before the expiration of the trial license. After purchasing RUCKUS IoT Controller, an email message is sent to you containing an activation code. Clicking the activation code directs you to the RUCKUS Support website. After the code is validated and attached to a device (the IoT Controller serial number), the license can be downloaded from the website.

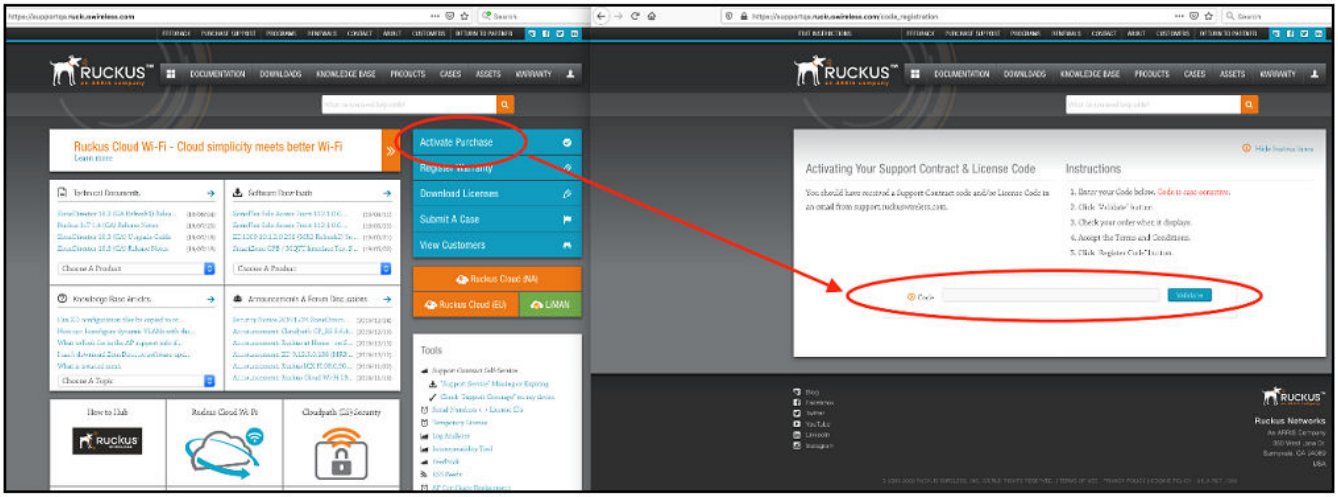
NOTE
For more information on licensing, refer to the *RUCKUS IoT Controller Software Licensing Guide, 2.0.0.0*

Complete the following steps to activate the license.

NOTE
N+1 standby requires a separate Core license (similar to RUCKUS IoT Controller 1.8.x). No additional feature or Device Capacity licenses need to be purchased. The RUCKUS IoT Controller will allow unlimited device capacity on the standby controller for 30 days after a failover. You can onboard new devices in the N+1 setup, but you must ensure valid device capacity subscriptions when the controller switches back to the primary.

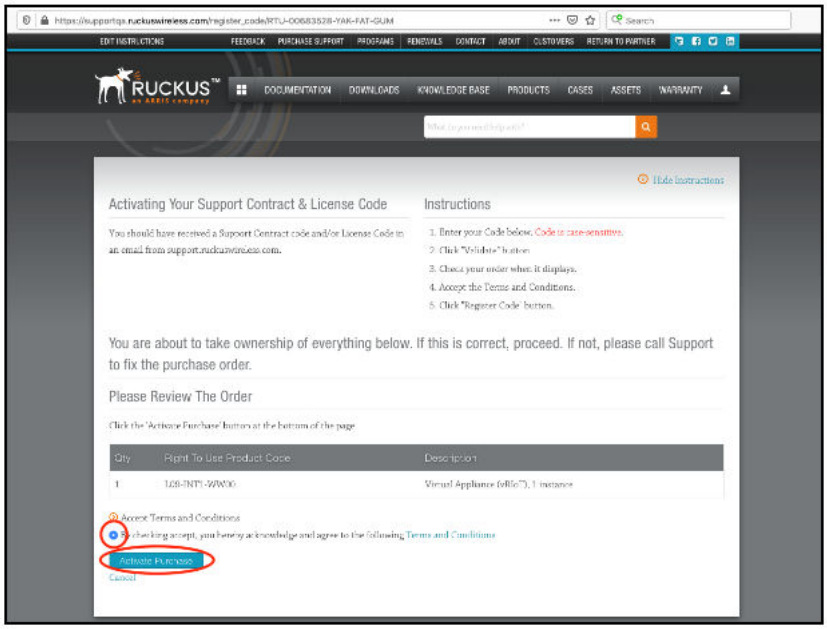
1. Click the activation code in the activation email message. You are redirected to the RUCKUS Support website (support.ruckuswireless.com). Log in to the website using your credentials.
2. Click **Activate Purchase**. The **Activating Your Support Contact & License Code** page is displayed. In the **Code** field, enter your activation code, and click **Validate**.

FIGURE 45 Validating the License Code



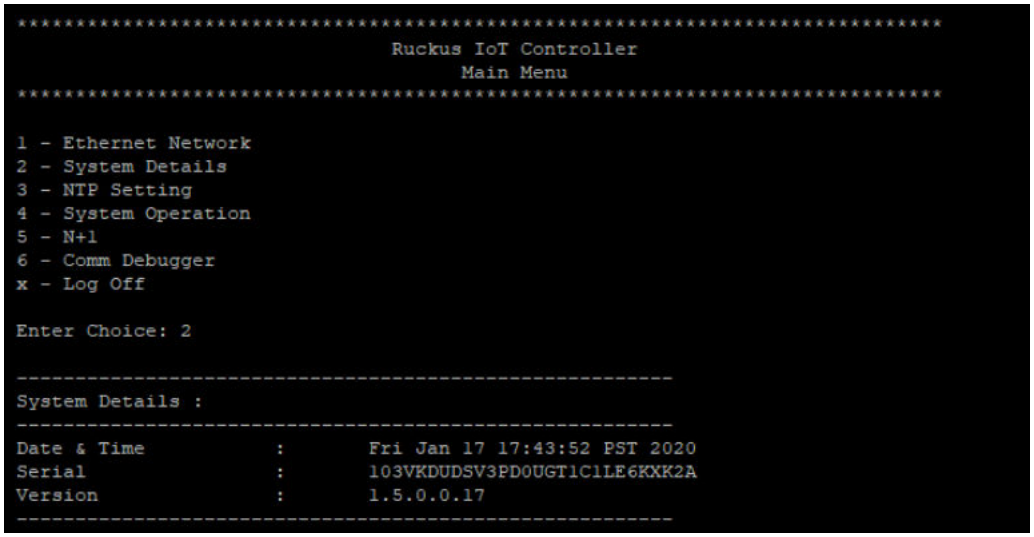
3. After the successful validation of the license code, accept the Terms and Conditions, and click **Activate Purchase**.

FIGURE 46 Activating Your Support Contract and License Code



4. Obtain the RUCKUS IoT Controller serial number in one of two ways:
   - Obtain the RUCKUS IoT Controller serial number using the RUCKUS IoT Controller console.
     a. Log in to the console of RUCKUS IoT Controller.
     b. In the RUCKUS IoT Controller Main Menu, enter **2** in the **Enter Choice** field to get the system details.

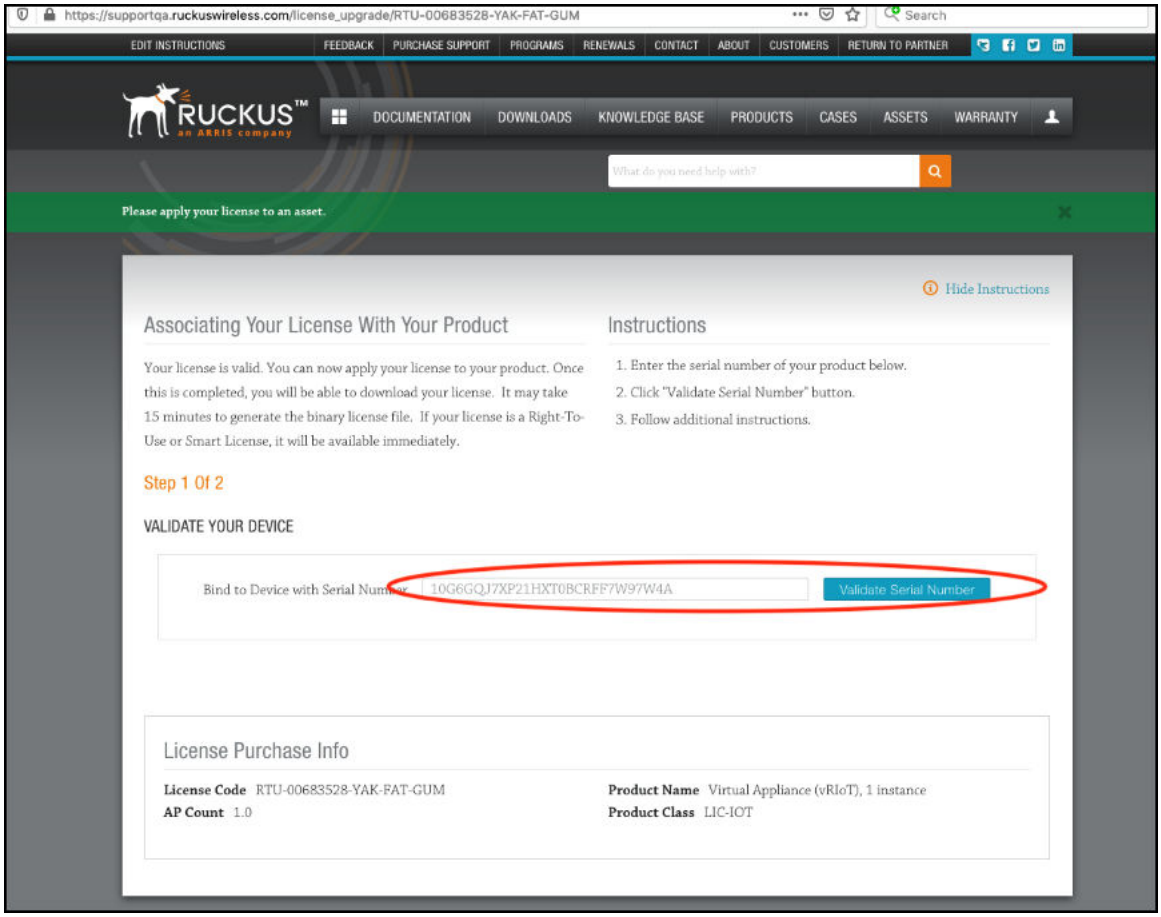
FIGURE 47 RUCKUS IoT Controller Main Menu



   - To obtain the RUCKUS IoT Controller serial number using the RUCKUS IoT Controller user interface, refer to the section "Uploading the RUCKUS IoT Controller License" in the *RUCKUS IoT Controller Configuration Guide*.

5. On the **Associating Your License With Your Product** page, enter the RUCKUS IoT Controller serial number, and click **Validate Serial Number** to activate the license.

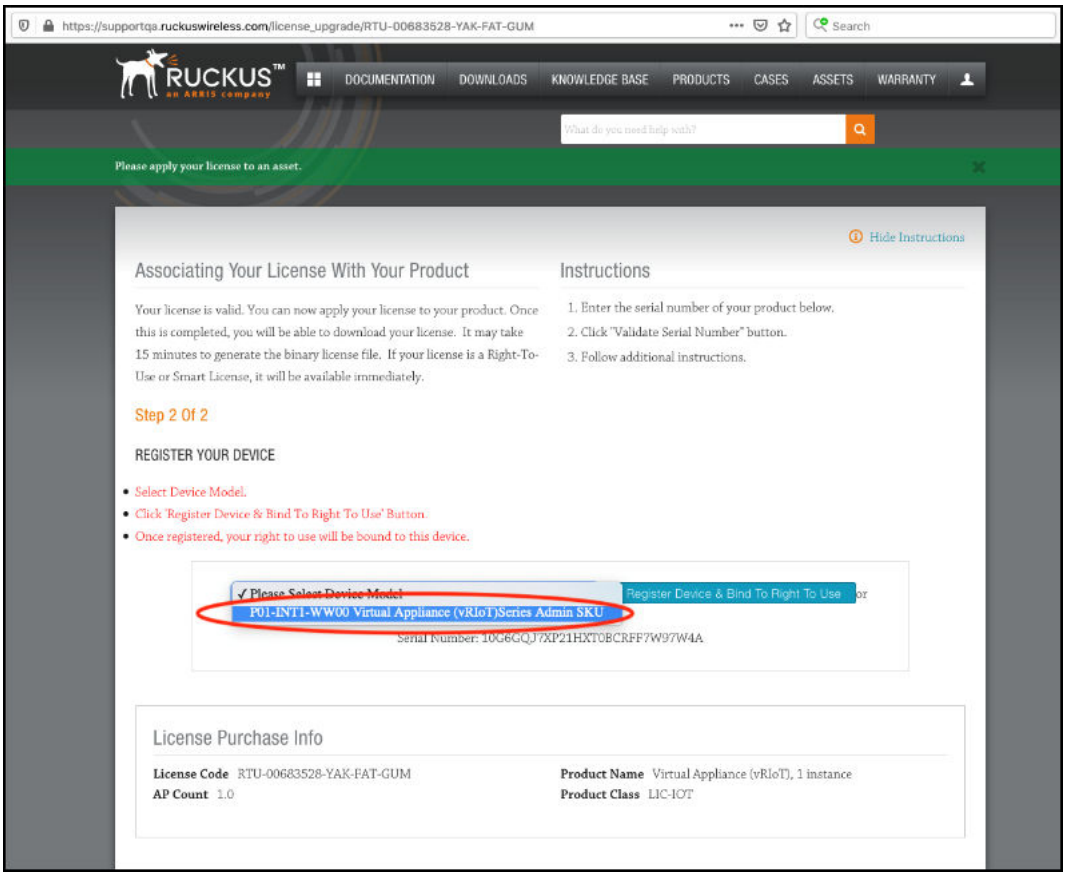
FIGURE 48 Associating the License with the Product



After successful validation, the registration page is displayed.

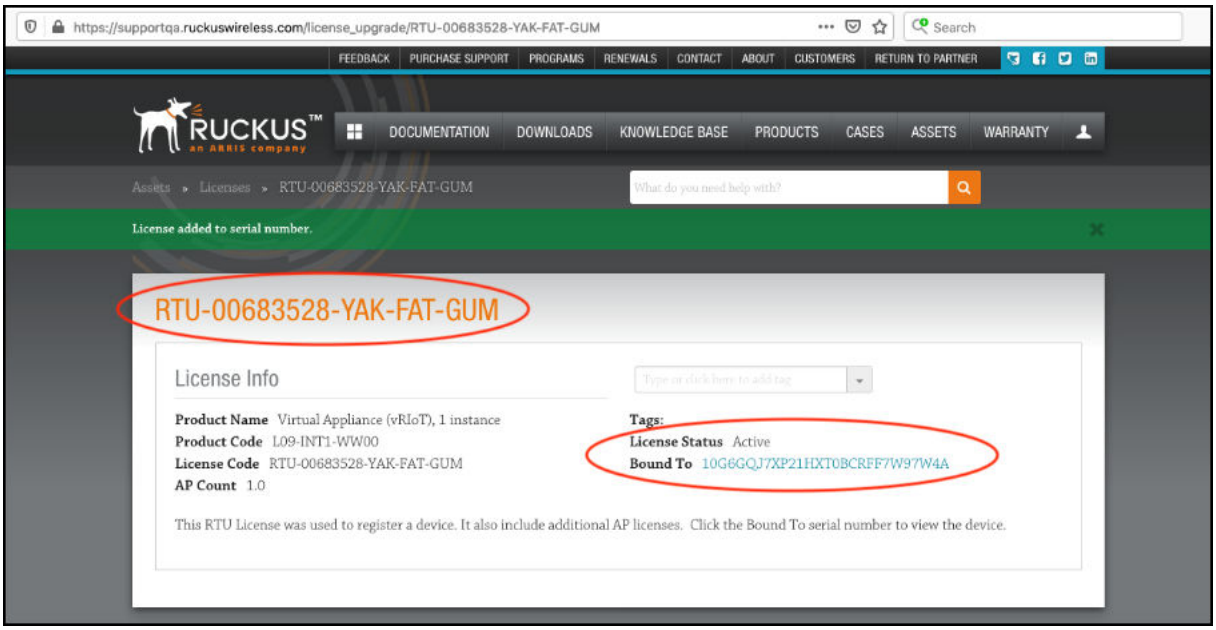
6. Select the P01-INT1-WW00 device model number and click **Register Device & Bind To Right To Use**.

FIGURE 49 Registering the Device



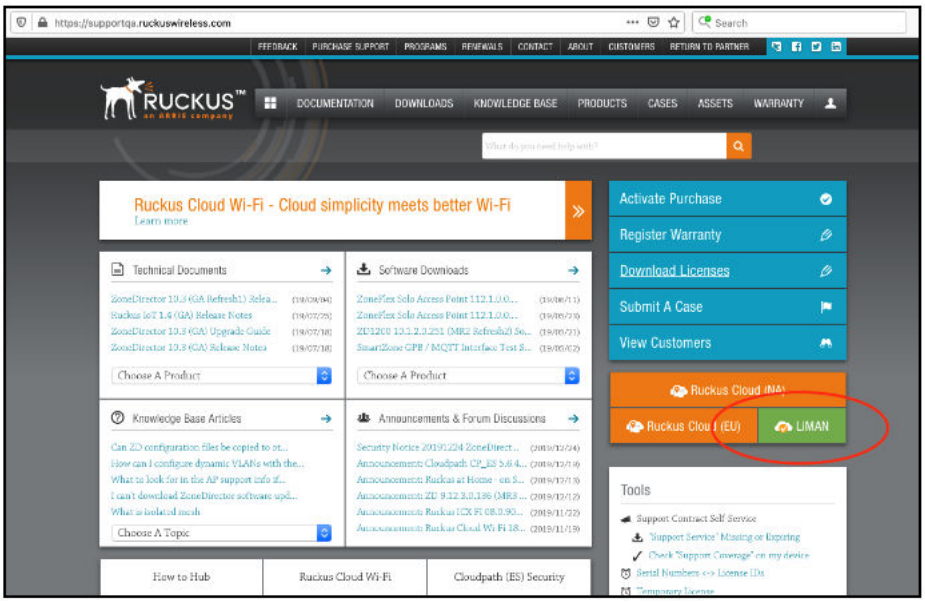
Your license information is displayed.

FIGURE 50 License Information



7. Return to the RUCKUS Support website (support.ruckuswireless.com), and click **LiMAN**.

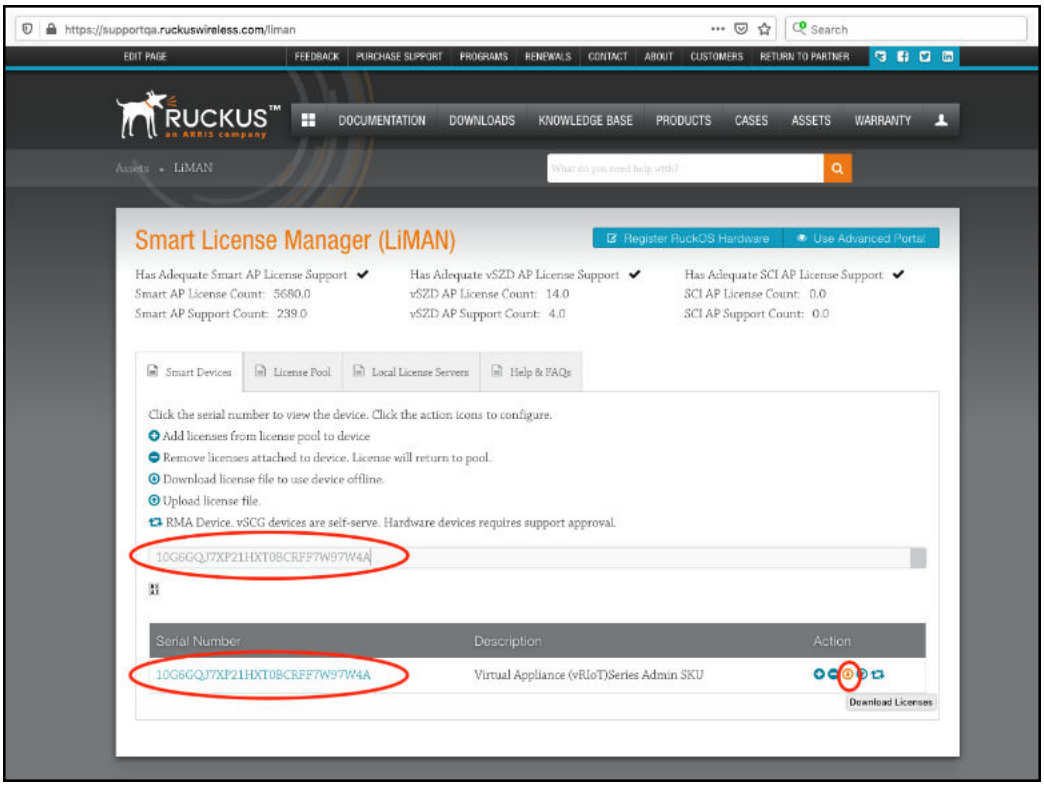
FIGURE 51 Accessing Smart License Manager (LiMAN)



8. In the **Smart License Manager** (**LiMAN**) page, enter the serial number of the controller, and click the **Download Licenses** button.

NOTE
The license must be uploaded to the controller.

FIGURE 52 Downloading the License



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