FortiInsight - VM Installation Guide

Version 7.0.0

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FortiInsight 7.0.0 VM Installation Guide
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Change log

Date	Change description
2021-10-14	Third release.
2021-04-01	Second release.
2020-09-17	First release of FortiInsight VM-installation guide.

Architecture

FortiInsight-VM is a virtual appliance version of FortiInsight. It is deployed in a virtual machine environment such as VMware ESX (or ESXi), MS Hyper-V, or KVM.

FortiInsight-VM requires the following connectivity for management. SSH is intended for initial configuration and diagnostics only. For more information, see the FortiInsight administration Guide.

Inbound management

Service	Port	Description
HTTPS	443	UI and API connection
HTTPS	8080	Collector Connection
SSH	22	SSH for initial configuration and diagnostics

Overview

This section provides an overview of FortiInsight VM-installation.

Licensing

Fortinet offers the FortiInsight-VM in a stackable license model. This model allows you to expand your VM solution as your environment expands. When configuring your FortiInsight-VM, make sure to configure hardware settings as outlined in table three and consider future expansion. Contact your Fortinet Authorized Reseller for more information.

FortiInsight VM Licensing

SKU	Description
FIN-VM-Base	Base FortiInsight-VM. Unlimited vCPU. Unlimited vRAM. User Licenses must be purchase separately.

FortiInsight VM User Licenses

Name	Description
FC1-10-FIN01-260-01-DD	25 User License Subscription for FortiInsight. Must be purchased with VM or Appliance. Includes 24/7 support.
FC2-10-FIN01- 260-01-DD	500 User License Subscription for FortiInsight. Must be purchased with VM or Appliance. Includes 24/7 support.
FC3-10-FIN01- 260-01-DD	10,000 User License Subscription for FortiInsight. Must be purchased with VM or Appliance. Includes 24/7 support.

System requirements

Prior to deploying the FortiInsight-VM virtual appliance, either VMware vSphere Hypervisor (ESX versions 4.0 or 4.1, ESXi versions 4/5/6), Microsoft Hyper-V Server (2010, 2012 R2, and 2016), or Virtual Machine Manager for KVM must be installed and configured. Note that VMWare ESXi was used for the purposes of this document. The installation instructions for FortiInsight-VM assume you are familiar with both VM platforms and their related terminology. For more details on all platforms, refer to:

- http://www.vmware.com/products/vsphere-hypervisor/overview.html
- https://www.microsoft.com/en-ca/server- cloud/solutions/virtualization.aspx
- https://virt-manager.org/
- https://docs.microsoft.com/en-us/azure/virtual-machines/windows/create-vm-specialized-portal
- https://docs.aws.amazon.com/vm-import/latest/userguide/vmimport-image-import.html

FortiInsight Virtual Machine Requirements

Resource	Min/Max
Virtual CPU	4 / 64
Virtual interfaces	1 / 4
Virtual Memory	16GB/1TB
Virtual Storage (Total)	180GB/6TB
Data Disk 1	60GB/2TB
Data Disk 2	60GB/2TB
Data Disk 3	60GB/2TB

Register FortiInsight-VM on FortiCloud

To obtain the FortiInsight-VM license file you must first register your FortiInsight-VM on FortiCloud.

1. Log in to FortiCloud using an existing support account or select Create an Account
2. In the toolbar select **Asset** > **Register/Activate**. The Registration Wizard opens.
3. Enter the license registration code from the FortiInsight-VM License Certificate that was emailed to you, and select **Next**.
4. Enter the support contract number, product description, Fortinet Partner, and IP address.
5. Select **Next** to continue.
6. Select the checkbox to indicate that you have read, understood, and accepted the service contract, and select Next to continue.
7. The verification page displays product entitlement. Select the checkbox to indicate that you accept the terms and select **Confirm** to submit the request.
8. In the Registration Completed page you can download the FortiInsight-VM license file. Select the License File Download link. You will be prompted to save the license file (.lic) to your management computer.

To edit the FortiInsight-VM IP address:

1. In the toolbar select **Asset > Manage/View** Products
2. Select the FortiInsight-VM serial number.
3. Select Edit to change the description, partner information, and IP address of your FortiInsight-VM.
4. Enter the new IP address and select Save.

You can change the IP address five (5) times on a regular FortiInsight-VM license.

5. Select the License File Download link. You will be prompted to save the license file (.lic) to your management computer

Download the FortiInsight-VM software

Fortinet provides the FortiInsight-VM software for 64-bit environments in two formats:

Upgrades: Download this firmware image to upgrade your existing FortiInsight-VM installation.

- FIN_VM-vX.X.X.XXXX-FORTINET.out
- FIN_VM_HV-vX.X.X.XXXX-FORTINET.out
- FIN_VM_KVM-vX.X.X.XXXX-FORTINET.out

New Installations: Download for a new FortiInsight-VM installation. Choose the package relevant to your environment.

- FIN_VM-vX.X.X.XXXX-FORTINET.out.ovf.zip
- FIN_VM_HV-vX.X.X.XXXX-FORTINET.out.hyperv.zip
- FIN_VM_KVM-vX.X.X.XXXX-FORTINET.out.kvm.zip

MS Hyper-v deployment package contents

The FIN_VM_HV-vX.X.X.XXXX-FORTINET.out.hyperv.zip file contains:

1. Snapshots folder:
   - Optionally, Hyper-V stores snapshots of the FortiInsight-VM state here.
2. Virtual Hard Disks folder:
   - DATADRIVE.vhd: The FortiInsight-VM log disk1 in VHD format.
   - DATADRIVE2.vhd: The FortiInsight-VM log disk2 in VHD format.
   - DATADRIVE3.vhd: The FortiInsight-VM message processing disk3 in VHD format.
   - fin.vhd: The FortiInsight-VM system hard disk in VHD format.
3. Virtual Machines folder:
   - fortiinsight.xml: XML file containing virtual hardware configuration settings for Hyper-V.

VMware ESXI deployment package contents

The FIN_VM-vX.X.X.XXXX-FORTINET.out.ovf.zip file contains:

- datadrive.vmdk: The FortiInsight-VM log disk1 in VMDK format.
- datadrive2.vmdk: The FortiInsight-VM log disk2 in VMDK format.
- datadrive3.vmdk: The FortiInsight-VM message processing disk3 in VMDK format.
- fin.vmdk: The FortiInsight-VM system hard disk in VMDK format.
- FortiInsight-VM.ovf: OVF template file for VMware Hardware Type 10 (intel E1000 NIC Driver).

- FortiInsight-VM.hw04.ovf: OVF template file for VMware Hardware Type 04 (intel E1000 NIC Driver).
- FortiInsight-VM.hw07.ovf: OVF template file for VMware Hardware Type 07 (intel E1000 NIC Driver).

KVM deployment package contents

The FIN_VM_KVM-vX.X.X.XXXX-FORTINET.out.kvm.zip file contains:

- datadrive.qcow2: The FortiInsight-VM log disk1 in qcow2 format
- datadrive2.qcow2: The FortiInsight-VM log disk2 in qcow2 format
- datadrive3.qcow2: The FortiInsight-VM message processing disk3 in qcow2 format
- finkvm.file
- finkvm.xml
- finkvm.qcow2

Azure deployment package contents

The FIN_VM_AZURE-vX.X.X.XXXX-FORTINET.out.azure.zip file contains:

- fin.vhd

AWS deployment package contents

The FIN_VM_XEN-vX.X.X.XXXX-FORTINET.out.xen.zip file contains:

- FINXEN-X.00-FW-buildXXXX.vhd
- import_aws_img-sh

FortiInsight-VM evaluation license

FortiInsight-VM includes a five-user evaluation license; no activation is required for the built-in evaluation license and there is no expiration of the license.

FortiInsight-VM deployment

FortiInsight-VM supports the following hypervisors:

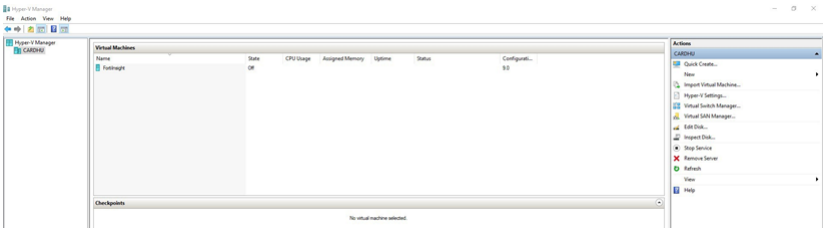
- VMware ESXI
- MS Hyper-V
- KVM
- AWS
- Azure

Deploying FortiInsight-VM on MS Hyper-V

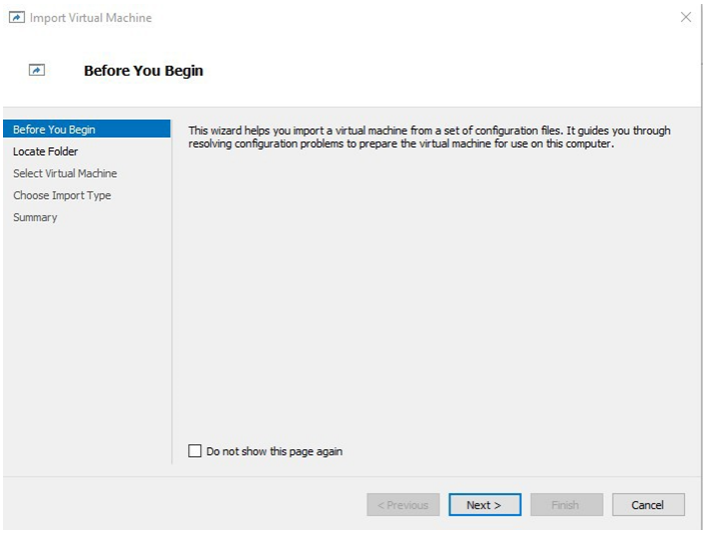
Once you have downloaded the out.hyperv.zip file and extracted the package contents to a folder on your management computer, you can deploy the VHD package to your MS Hyper-V environment.

To deploy the FortiInsight VHD template:

1. As an administrator, launch the Hyper-V Manager and connect to your Hyper-V Server.
2. Select the server in the right-hand menu and select **Import Virtual Machine.**



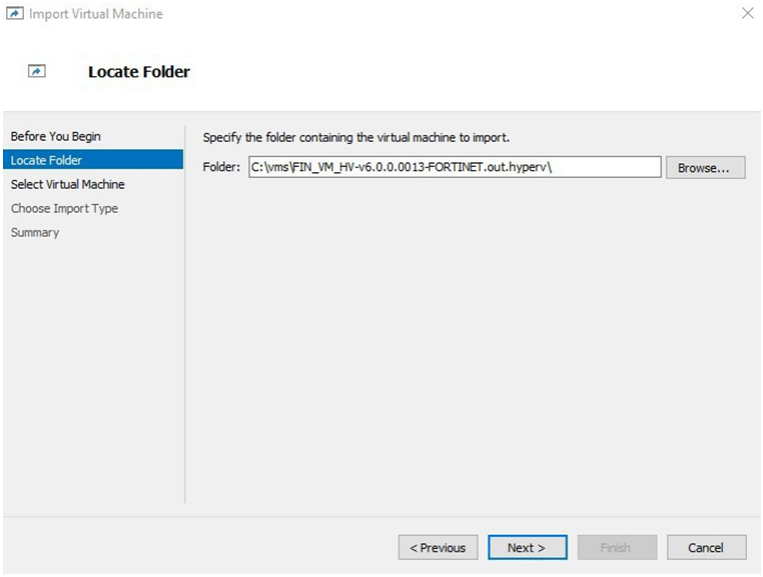
Select Import Virtual Machine, and select next on the wizard "Before you begin"



Before you begin warning message

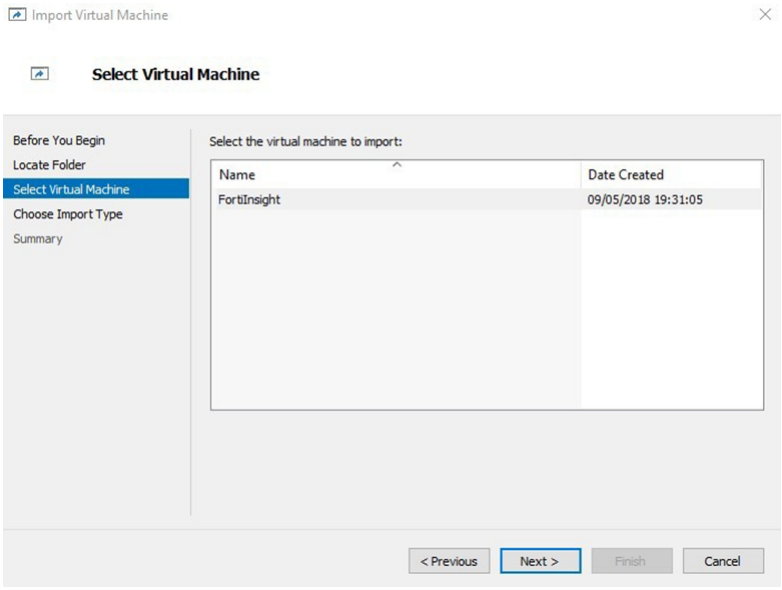
3. Enter the location of the VM to be imported. This is the location of the folder that you extracted the

FortiInsight hyperv.zip file to.



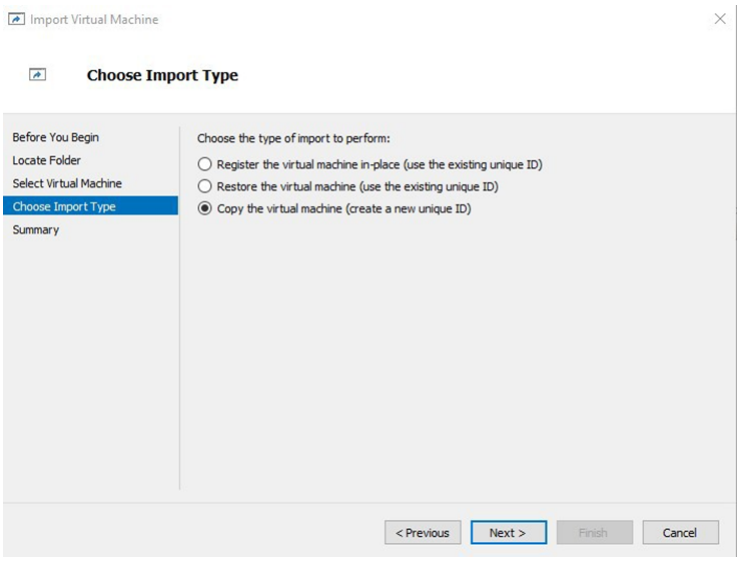
Select location of FortiInsight to import from

4. Select the FortiInsight-VM and select **Next**



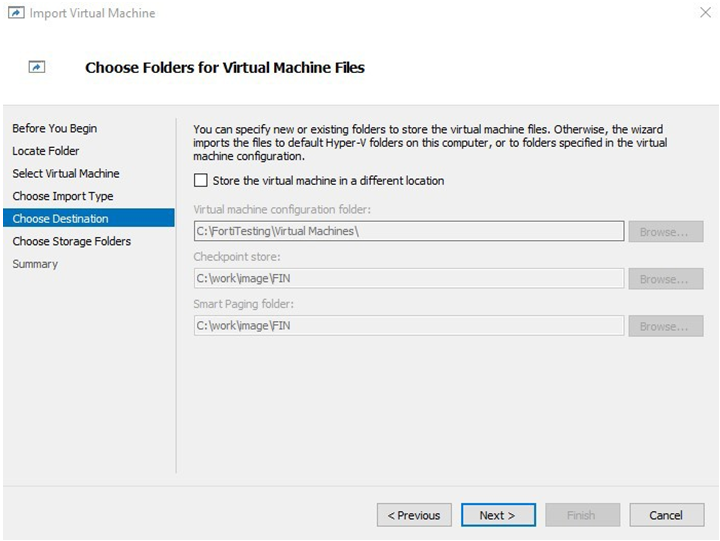
Select FortiInsight

5. For the import type, choose **Copy** the virtual machine and select **Next**.



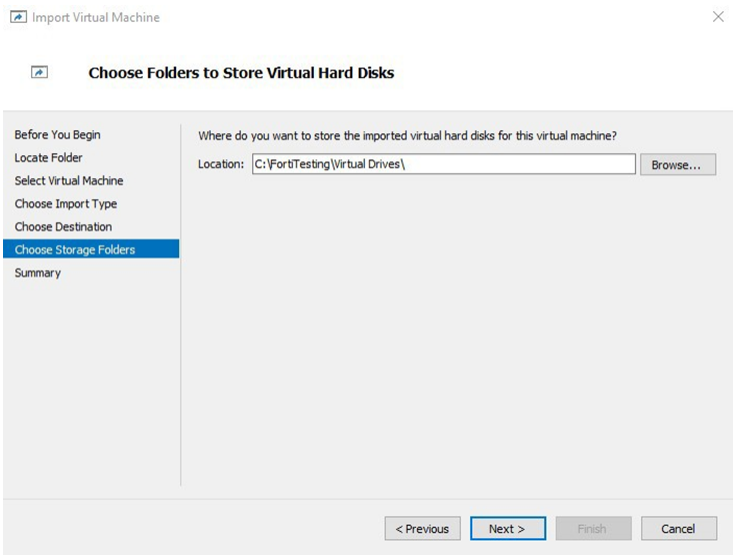
Copy the FortiInsight Virtual Appliance

6. Select **Next** if you wish to use the default storage location settings, or specify your own.



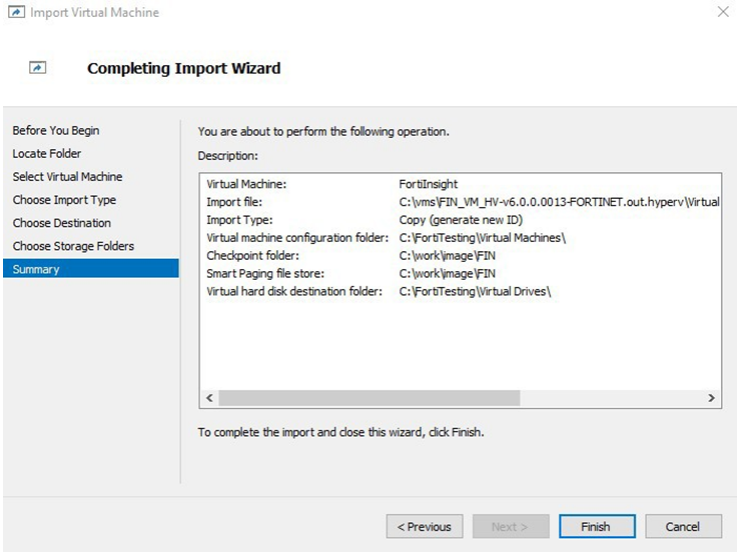
Choose default location, or customize

7. Select **Next** if you wish to use the default VM hard disk storage settings, or specify your own.



Choose the default location or customize

8. Select **Finish** to accept the configuration and complete the VM installation.



Review the summary before deploying the FortiInsight Virtual Appliance

9. The VM will be installed and will be displayed in the Hyper-V Manager. Do not power on the VM; instead, configure the appliance settings as described in Configure FortiInsight-VM hardware settings on page 25

Deploying FortiInsight-VM on VMware

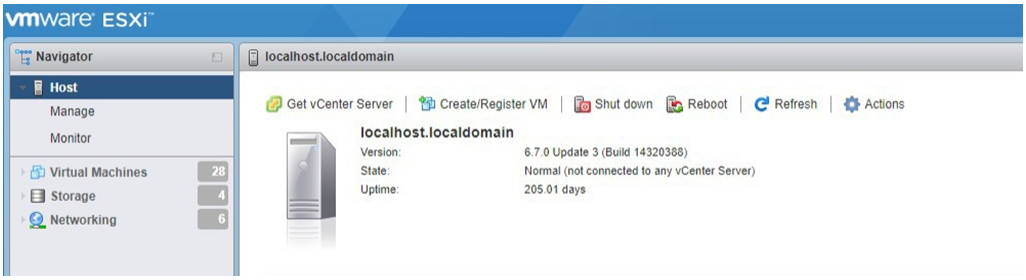
Once you have downloaded the out.ovf.zip file and extracted the package contents to a folder on your management computer, you can deploy it into your VMware environmnt.

To deploy the FortiInsight-VM OVF template:

1. Connect to your VMware ESXi server by visiting its URL in your browser. Enter your username and password, and click **Log in**.

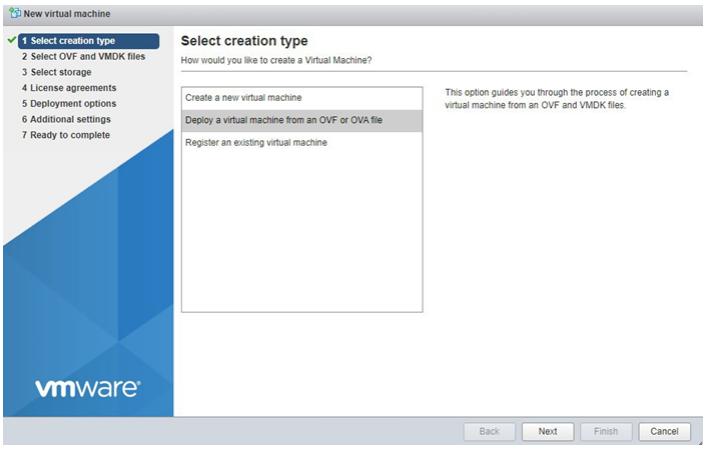
Login to your VMWare cluster

2. Select Create/Register VM



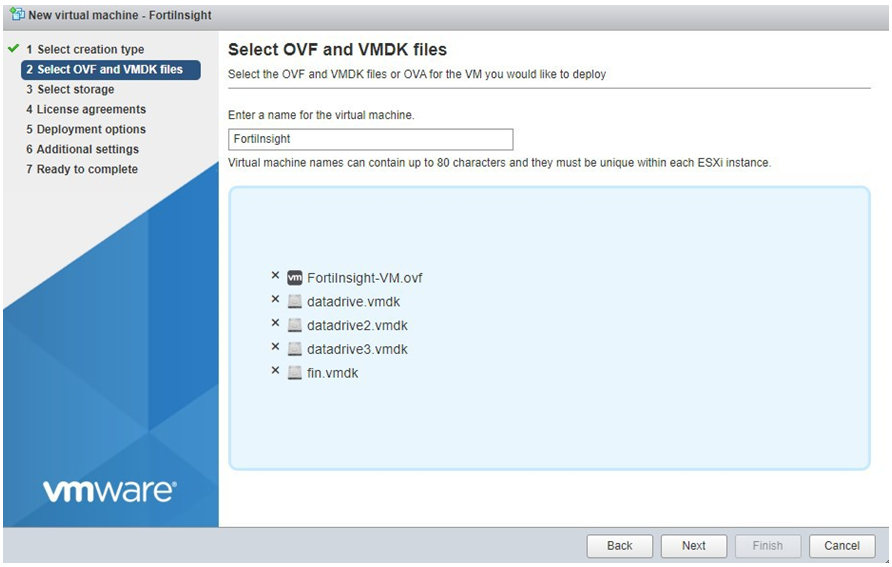
Create/Register the FortiInsight Virtual Appliance Image

3. Select Deploy a virtual machine from an OVF or OVA file, and click Next.



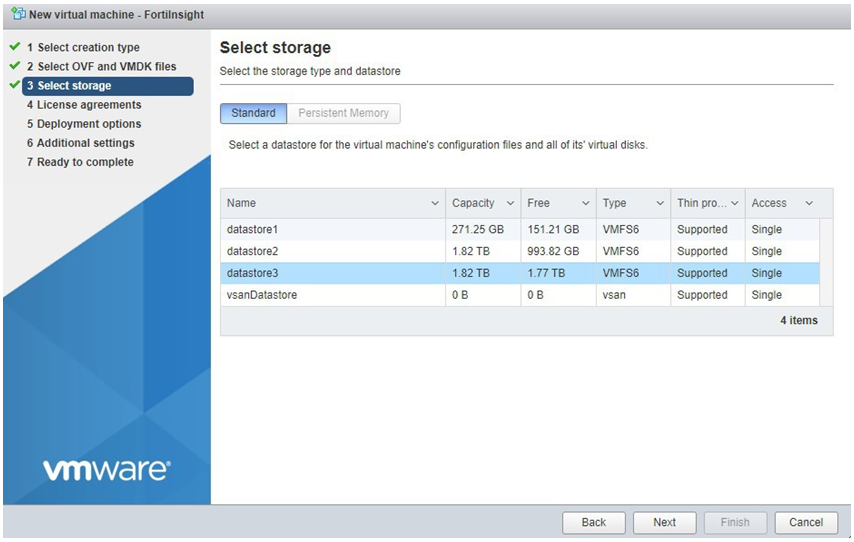
Deploy the FortiInsight virtual appliance image

4. Enter a name for your VM and select the OVF (FortiInsight-VM.ovf), firmware VMDK (fin.vmdk), and all datadrive* storage VMDK (datadrive*.vmdk) files previously extracted to your management computer, and click **Next**.



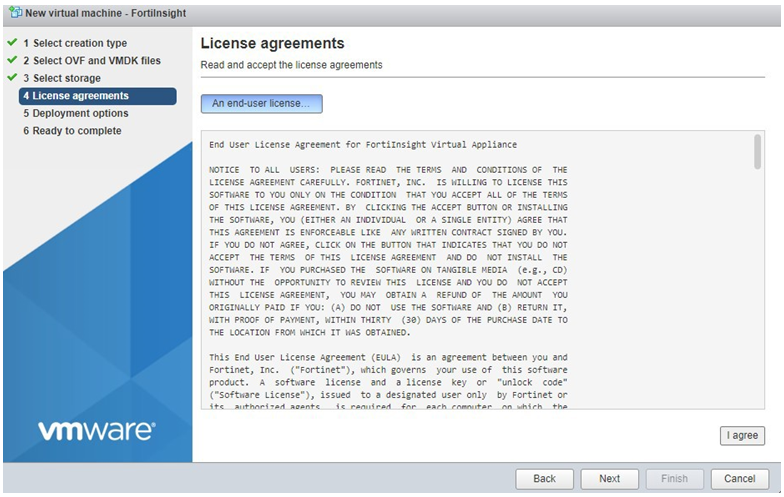
Select the FortiInsight OVF and all Data storage disks.

5. Select which ESXi server's datastore to use for the deployment of FortiInsight-VM, and click **Next**.



Select which storage point to place the FortiInsight Virtual Appliance Image

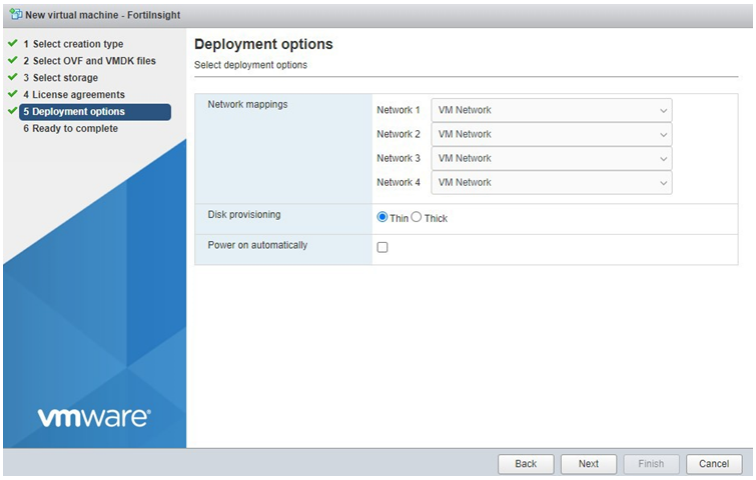
6. Read the licensing terms and click **I agree** and **Next**.



Agree to the license terms

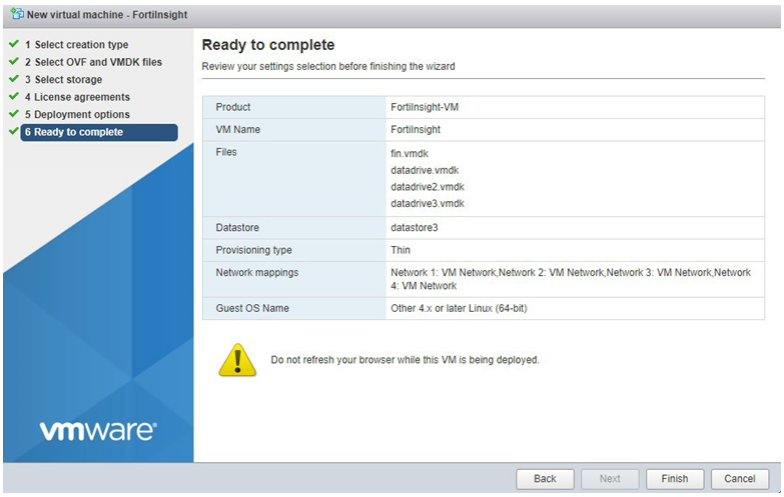
7. Select the appropriate network mappings, disk provisioning, and power on options for your deployment, and click **Next**.

It's best to provision 'Thick Provisioning' as this will provide the best performance for your FortiInsight-VM.



Choose deployment options for the FortiInsight Virtual Appliance Image

8. Review the summary of your VM settings, and click **Finish**.



Review and deploy the FortiInsight Virtual Appliance Image to VMWare.

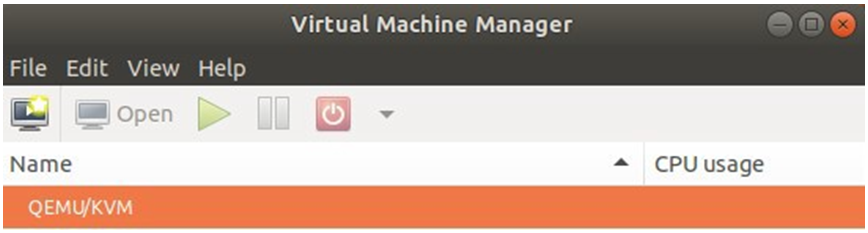
9. Continue with Configure FortiInsight-VM hardware settings on page 25.

Deploying FortiInsight-VM on KVM

Once you have downloaded the out.kvm.zip file and extracted the virtual hard drive image file finkvm.qcow2, you can create the virtual machine in your KVM environment.

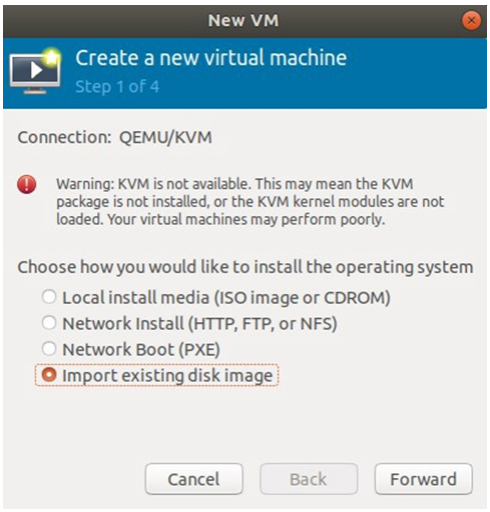
To deploy the FortiInsight-VM virtual machine:

1. Launch **Virtual Machine Manager** on your KVM host server.
2. From the Virtual Machine Manager (VMM) home page, select **Create a new virtual machine**.



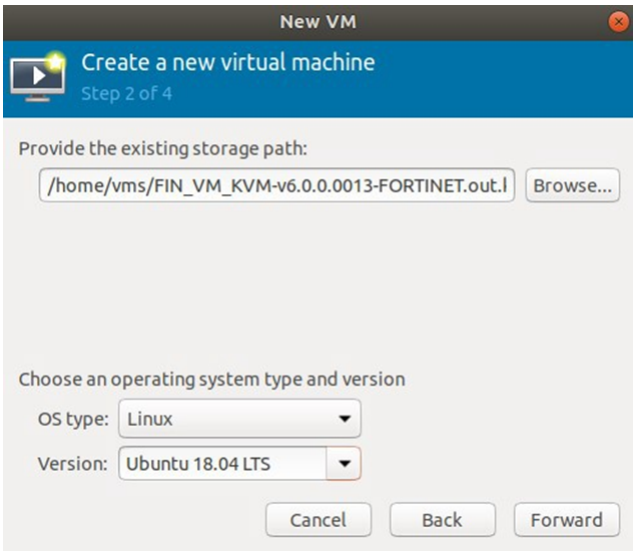
Create a new FortiInsight Virtual Appliance

3. Select **Import existing** disk image and select Forward.



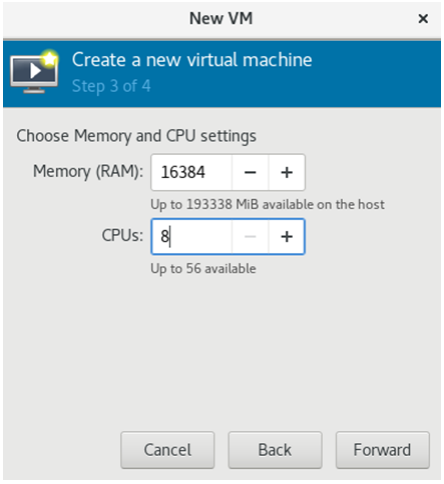
Import an existing disk image for FortiInsight

4. Select Browse. If you saved the finkvm.qcow2 file to */var/lib/libvirt/images*, it will be visible on the right. If you saved it somewhere else on your server, select **Browse Local**, find it, and select **Choose Volume**.
5. Select the **OS type** and **Version** you are running (in this case Linux Ubuntu 16.04), and select **Forward**.

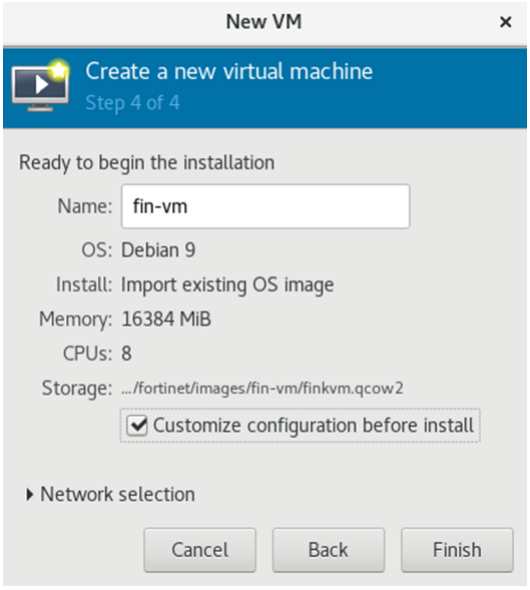


Select required operating system

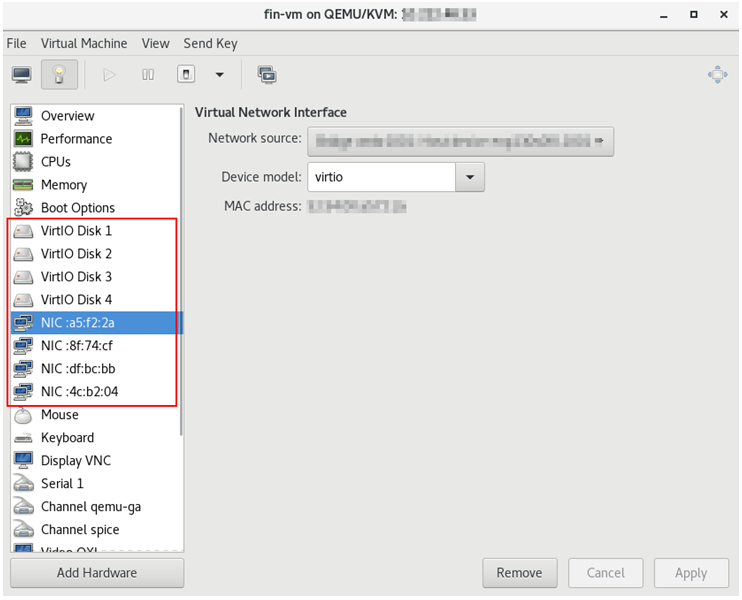
6. Specify the amount of memory and number of CPUs to allocate to this virtual machine. Select **Forward**.



7. Enter a suitable name for the FortiInsight-VM. Check 'Customize configuration before install' and click **Finish**.



8. Add the three additional data disks datadrive.qcow2, datadrive2.qcow2 and datadrive3.qcow2 in order. Add three additional vNICs, and associate the first vNIC with an appropriate virtual network. Select **Apply**.



9. Continue with Configure FortiInsight-VM hardware settings on page 25.

Installing FortiInsight Azure

This document provides instructions on installingFortiInsight VM on Azure. Currently, FortiInsight images are not available in the Azure marketplace. It is recommended to use your own account to download and launch FortiInsight Virtual Machine (VM).

Step 1

Download the FortiInsight Azure Super image (VHD) file from the Fortinet Support website https://support.fortinet.com.

Step 2

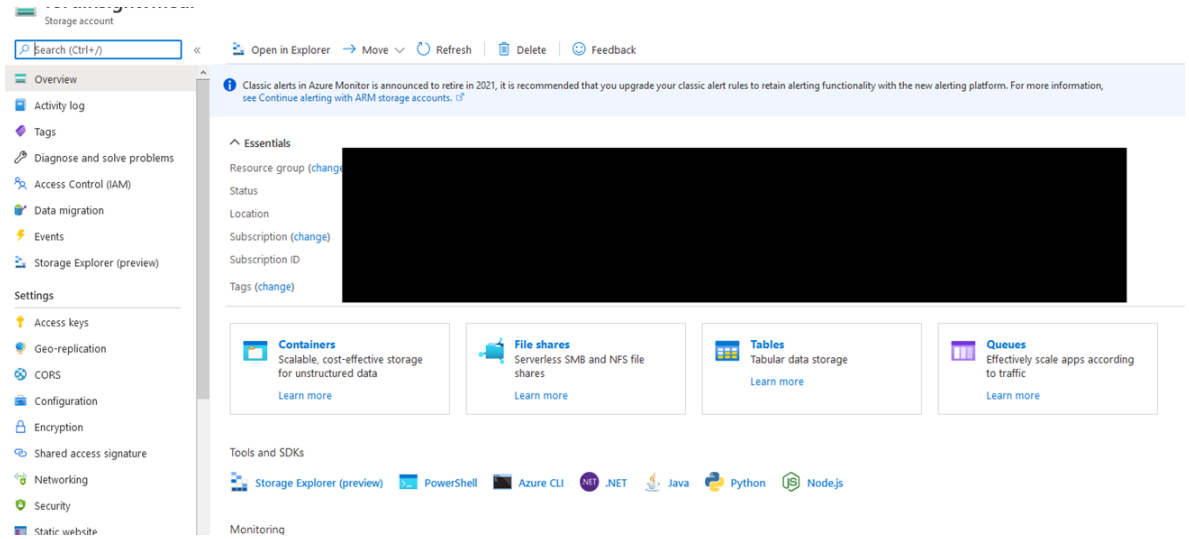
Log in to Azure portal.

Step 3

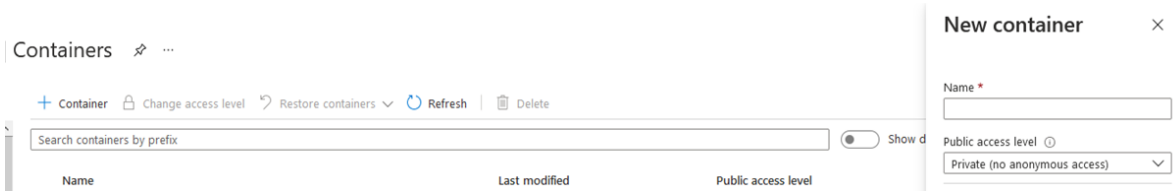
Upload the vhd file in the Azure Portal:

1. Click **Storage Accounts** and select the storage account where the FortiInsight vhd file will be uploaded to. If you do not have a storage account, click **Add** to create one.

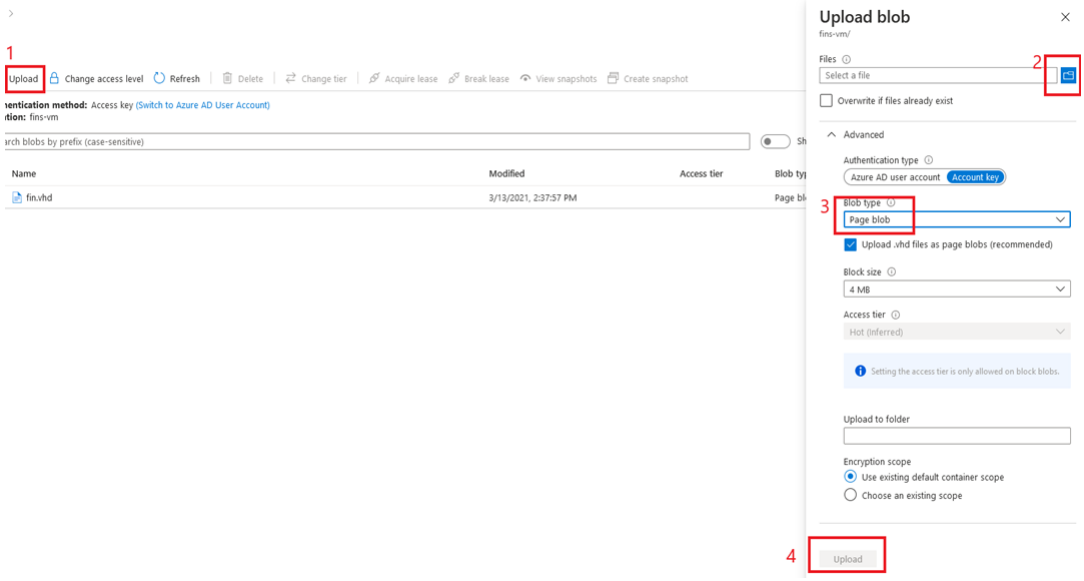
The selected location will determine where the image can be created and subsequently deployed.



2. Under **Blob Service**, select **Containers**.
3. Select a container to upload the FortiInsight vhd file.
   If you do not have a storage container, click **Add Container** to create one.



4. Click **Upload** and select the Azure-compliant FortiInsight(fin.vhd) vhd file to upload.
   Ensure that the **Blob type** is set to "Page Blob". This process might take a long time depending on your network connection and the location of your Azure storage account.

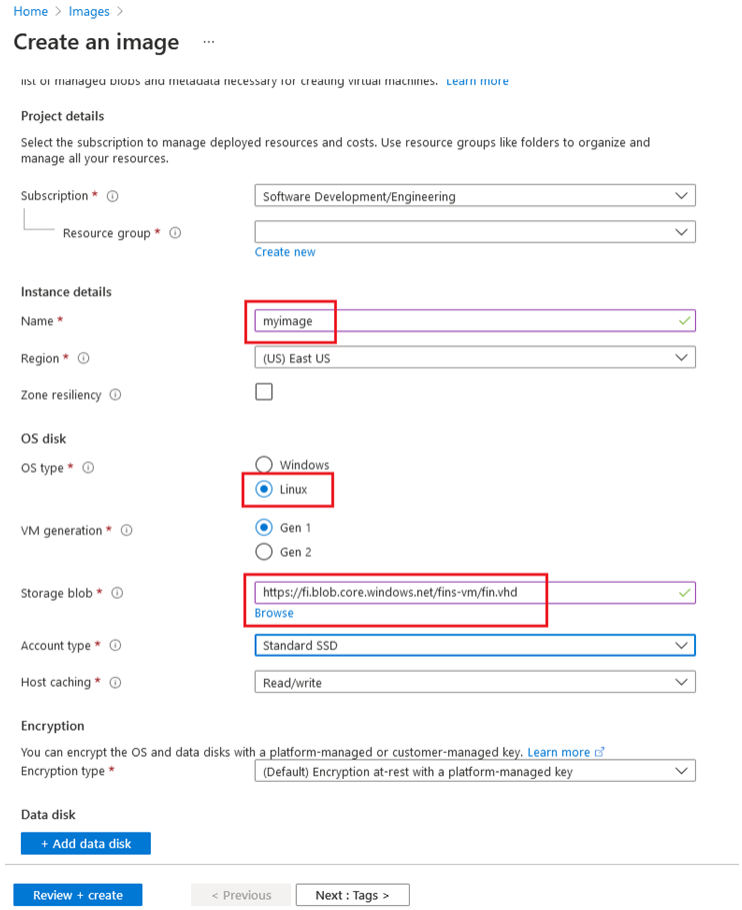


Step 4

Create an image in the Azure Portal.

A. Select **Images** and click **Add** to create a new image.

1. Enter a **Name** for the image. Remember that this image is a template that will be later deployed to a virtual machine with a different name.
2. Ensure that the location is the same as the location of your storage account.
3. In the **OS disk** section:
   - Select **Linux** and the **OS type**.
   - Click **Browse** on the **Storage Blob** field. A new panel will list your storage accounts.
   - Using this panel, navigate through the storage account and container to locate the FortiInsight vhd that was uploaded.
4. Click **Create** to start the image creation process. This process typically takes few minutes to complete.



B. When the process is completed, return to the **Images** panel and verify that the new image was created.

This image can now be used to deploy a new FortiInsight virtual machine in Azure.

Step 5

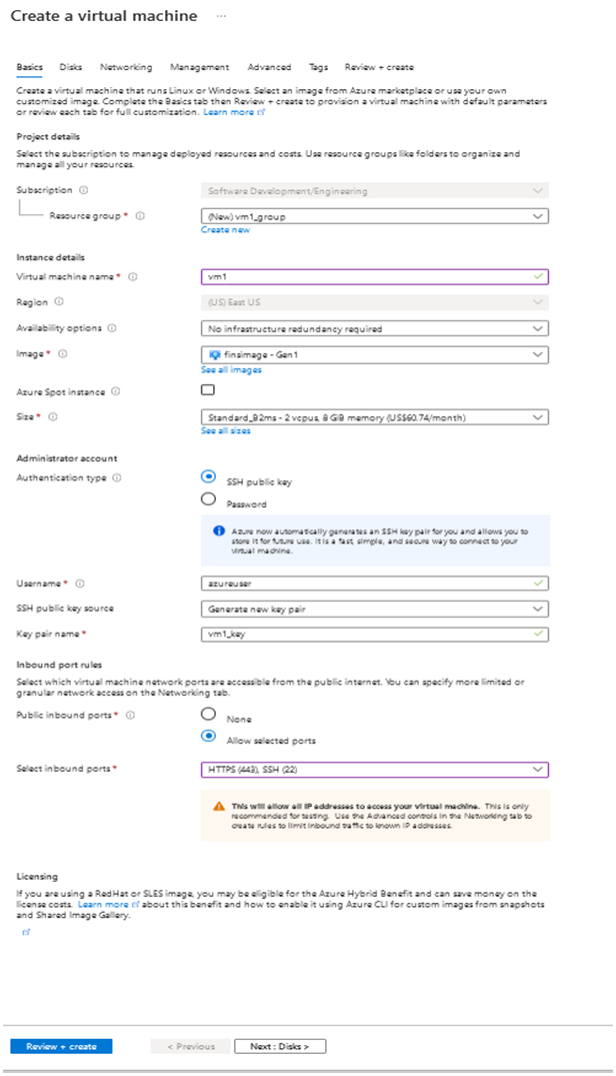
Go to **All services > Images** and select the Virtual Image created in Step 4 above.

Step 6

Click **Create VM** to create a VM and launch with reference to the Azure documentation here:

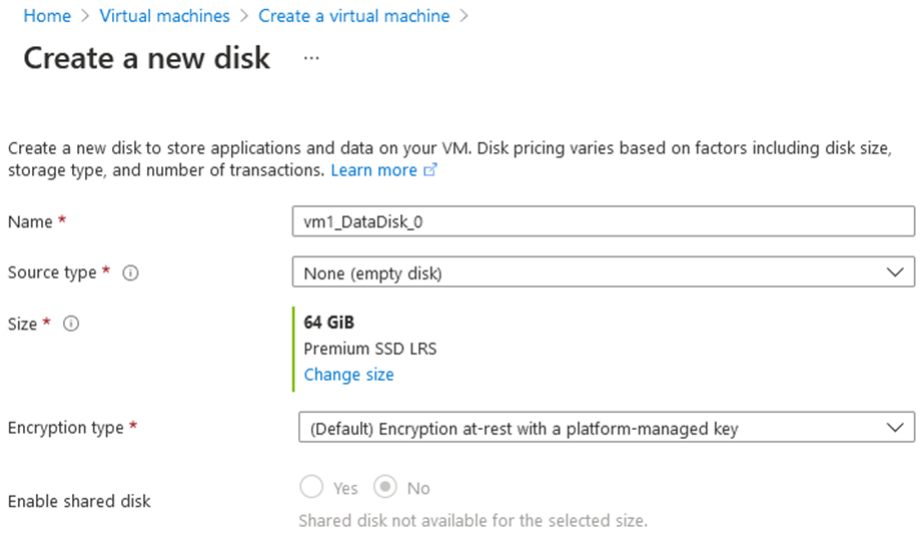
https://docs.microsoft.com/en-us/azure/virtual-machines/linux/quick-create-portal

You must use the image from Step 5 above instead of selecting one from Azure Marketplace. Follow the minimum hardware requirements for the VM with reference to the FortiInsight VM Installation Guide - System Requirements.

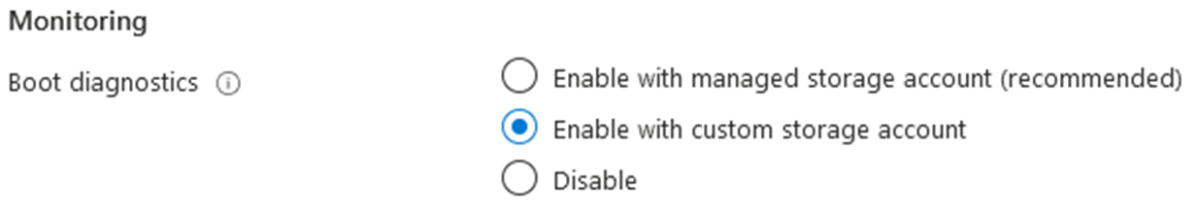


Click **Add disks** and add three disks(MIN/MAX size).

- 64GB/2TB for Data Disk 1
- 64GB/2TB for Data Disk 2
- 64GB/2TB for Data Disk 3



Under the **Management > Monitoring** option choose Enable with custom storage *account* for *Boot Diagnostics*. This will give you console access to the VM. This can also be enabled once the VM has been created.



Step 7

Go to **All Services > Virtual machines**, then click the recently created VM.

Step 8

On the VM, go to **Settings > Networking** and click **Network Interface > Settings > IP configurations**, then click "ipconfig1" to change **Private IP address settings** to "Static" and save the changes.

Step 9

On the VM, go to **Settings > Networking** and click the **Add inbound port rule**.

Add port 8080/TCP for the collector connection. The source IP can also be tied down here to your public IP.

Step 10

Connect to the VM via the console, and set up as the FortiInsight VM Installation Guide - Initial Configuration.

Configure FortiInsight-VM hardware settings

Before powering on your FortiInsight-VM you must configure the virtual memory, virtual CPU, and virtual disks (VMDK) configuration, and map the virtual network adapters.

The instructions below are for VMware deployments. Refer to the hypervisor vendors documentation for instructions on how to perform similar configuration changes on KVM and Hyper-V.

These settings cannot be configured inside FortiInsight-VM, and must be configured in the VM environment. Some settings cannot be reconfigured after you power on the virtual appliance.

Resizing the virtual disk (vDisk)

If you configure the virtual appliance's storage repository to be internal (i.e. local, on its own vDisk), resize the vDisk before powering on.

The FortiInsight-VM package that you downloaded includes pre-sized VMDK (Virtual Machine Disk Format) files of 1GB for disk 1 (for the OS) and 60GB for disk 2, and 3, and 4 data, which is large enough for most trial deployments.

Resize the vDisk before powering on the virtual machine.

The maximum disk size can be affected by the VM datastore block size. Consult VMware documentation for details. See http://communities.vmware.com/docs/DOC-11920.

Consider also that, depending on the size of your organization's network, you might require more or less storage for the FortiInsight data storage layer for anomalies, alerts and event telemetry.

To resize the vDisk:

1. In the VMware vSphere Client, right-click the name of the virtual appliance, and select **Edit Settings**. The Virtual Machine Properties page is displayed.
2. Select the Hardware tab and select **Hard Disk 2**.
3. Select **Remove**.
4. Select Add. The **Add Hardware** page is displayed.
5. In the list of device types, select **Hard Disk** and select **Next**.
6. Select **Create a new virtual disk** and select **Next**.
7. In **Disk Size**, enter the size of the vDisk in GB and select **Next**.
8. Select the bottom option in Virtual Device Node, select IDE (0:1) from the drop-down list, then select **Next**.
9. Select **Finish** to close the **Add Hardware** page and then select OK to save the settings to Virtual Machine Properties.
10. Repeat for Hard Disk 3, and 4.

All disks must be the same size, and Hard Disk 1 must not be resized.

Configuring the number of virtual CPUs (vCPUs)

By default, the virtual appliance is configured to use 4 vCPUs, which is sufficient for small deployments. Additional CPUs should be provisioned for larger deployments. FortiInsight-VM is not restricted to how many vCPUs can be configured so you can increase the number according to your requirements (e.g., you can allocate 2, 4, 8, 12, or 16 vCPUs).

Configuring virtual RAM (vRAM) limit

FortiInsight-VM comes pre-configured to use vRAM, which must be increased to at least 16GB before powering on FortiInsight. FortiInsight-Vm is not restricted to how much vRAM that can be assigned, so you can increase the number to your requirements (e.g 32GB, 64GB, 96GB, 128GB)

Mapping the virtual NICs (vNICs) to physical NICs

Assign the FortiInsight-VM vNICs to an appropriate virtual network. Only port 1 is used for FortiInsight communication.

Power on your FortiInsight-VM

You can now proceed to power on your FortiInsight-VM. Select the name of the FortiInsight-VM you deployed in the inventory list and select Power on the virtual machine in the **Getting Started** tab. Optionally, you can select the name of the FortiInsight-VM you deployed, right-click and select **Power > Power On**.

Initial configuration

Before you can connect to the FortiInsight-VM GUI you must configure basic network settings via the console tab in your vSphere client. Once configured, you can connect to the FortiInsight-VM GUI and upload the FortiInsight-VM license file that you downloaded from FortiCloud.

FortiInsight-VM console access

To enable GUI access to the FortiInsight-VM you must configure basic network settings of the FortiInsight-VM in the vSphere Client Console tab.

To configure basic network settings in FortiInsight-VM:

1. In the Inventory list, select the FortiInsight-VM that you deployed. In the Getting Started tab select **Power** on the virtual machine. Optionally, you can right-click the FortiInsight-VM, and select **Power > Power On**.
2. Select the **Console** tab. The Console window appears.
3. At the FortiInsight-VM login prompt enter the username **admin** and password.

Username	admin
Password	<blank>

   - You will be asked to reset the default password on first login.
4. The default **Port1** IP address is set to `192.168.1.99/24`. You can change this IP address with the following CLI command:

```
config system interface
   edit port1
      set ip <address_ipv4/netmask>
end
```

5. You can configure the static route for the default gateway using the following CLI command:

```
config router static
   edit 0
      set device port1
      set dst <destination_ipv4/netmask>
      set gateway <router_ipv4>
end
```

Connect to the FortiInsight-VM GUI

Once you have configured the port1 IP address, network mask, and default gateway, launch a web browser and enter the IP address you configured for port1.

The certificate is not automatically trusted because it is self-signed, rather than being signed by a valid certificate authority (CA). Self-signed certificates cannot be verified with a proper CA, and therefore might be

fraudulent. You must manually indicate whether or not to trust the certificate. The certificate might belong to another web site. The common name (CN) field in the certificate, which usually contains the hostname of the web site, does not exactly match the URLyou requested. This could indicate server identity theft, but could also simply indicate that the certificate contains a domain name while you have entered an IP address. You must manually indicate whether this mismatch is normal or not.

Both warnings are normal for the default certificate. TLS v1.0, TLS v1.1, and TLS v1.2 are supported.

Verify and accept the certificate, either permanently (the web browser will not display the self-signing warning again) or temporarily. You cannot log in until you accept the certificate.

For details on accepting the certificate, see the documentation for your web browser.

At the login page, enter the user name admin and password and select Login. This password will be the same as that set during the initial CLI configuration.