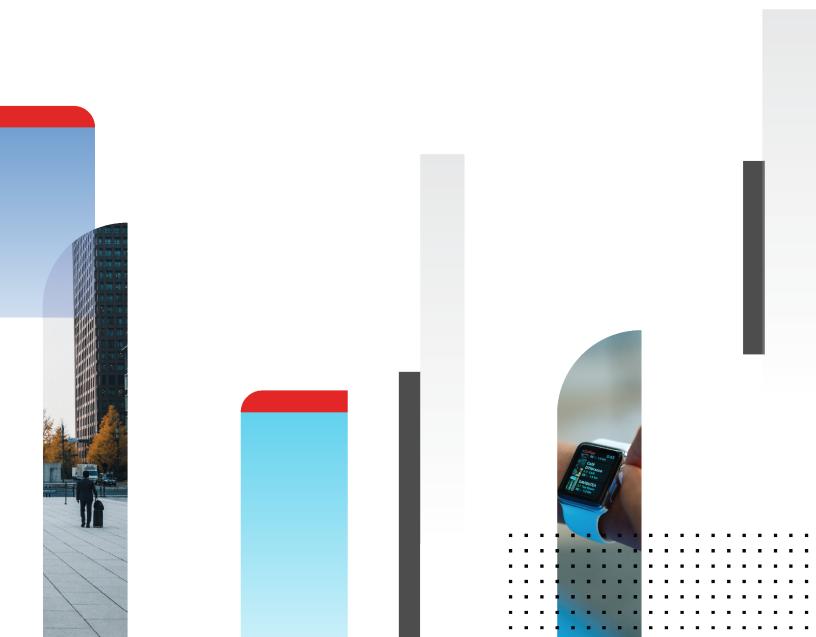


KVM Installation Guide

FortiSIEM 6.3.3



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10/04/2023

FortiSIEM 6.3.3 KVM Installation Guide

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Change Log

Date	Change Description
09/05/2018	Initial version of FortiSIEM - KVM Installation Guide.
03/29/2019	Revision 1: updated instructions for registering on a Supervisor node.
04/08/2019	Revision 2: updated the names of the files imported to KVM.
11/05/2019	Revision 3: changed the names of the volumes in the FortiSIEM distribution.
11/21/2019	Release of FortiSIEM - KVM Installation Guide for 5.2.6.
03/30/2020	Release of FortiSIEM - KVM Installation Guide for 5.3.0.
08/15/2020	Release of FortiSIEM - KVM Installation and Migration Guide for 6.1.0.
12/07/2020	Revision 1: Small addition to Register Collectors.
02/04/2021	Revision 2: Migration update.
03/18/2021	Revision 3: Minor update to Pre-Migration for 6.1.1.
03/23/2021	Release of FortiSIEM - KVM Installation Guide for 6.2.0.
04/22/2021	Revision 1: Added Install Log section.
05/06/2021	Release of FortiSIEM - KVM Installation Guide for 6.2.1.
06/07/2021	Updated Elasticsearch screenshot for 6.2.x guides.
07/06/2021	Release of FortiSIEM - KVM Installation Guide for 6.3.0.
08/26/2021	Release of FortiSIEM - KVM Installation Guide for 6.3.1.
10/15/2021	Release of FortiSIEM - KVM Installation Guide for 6.3.2.
11/17/2021	Updated Register Collectors instructions for 6.x guides.
12/22/2021	Release of FortiSIEM - KVM Installation Guide for 6.3.3.
08/18/2022	Updated All-in-one Installation section.
10/22/2022	Updated Register Collectors instructions for 6.x guides.

Fresh Installation

- Pre-Installation Checklist
- All-in-one Installation
- Cluster Installation

Pre-Installation Checklist

Before you begin, check the following:

- Ensure that your system can connect to the network. You will be asked to provide a DNS Server and a host that can be resolved by the DNS Server and responds to ping. The host can either be an internal host or a public domain host like google.com.
- Deployment type Enterprise or Service Provider. The Service Provider deployment provides multi-tenancy.
- · Whether FIPS should be enabled
- · Install type:
 - · All-in-one with Supervisor only, or
 - · Cluster with Supervisor and Workers
- · Storage type
 - Online Local or NFS or Elasticsearch
 - Archive NFS or HDFS
- Before beginning FortiSIEM deployment, you must configure external storage
- Determine hardware requirements:

Node	vCPU	RAM	Local Disks
Supervisor (All in one)	Minimum – 12 Recommended - 32	Minimum • without UEBA – 24GB • with UEBA - 32GB Recommended • without UEBA – 32GB • with UEBA - 64GB	OS – 25GB OPT – 100GB CMDB – 60GB SVN – 60GB Local Event database – based on need
Supervisor (Cluster)	Minimum – 12 Recommended - 32	Minimum • without UEBA – 24GB • with UEBA - 32GB Recommended • without UEBA – 32GB • with UEBA - 64GB	OS – 25GB OPT – 100GB CMDB – 60GB SVN – 60GB
Workers	Minimum – 8 Recommended - 16	Minimum – 16GB Recommended – 24GB	OS – 25GB OPT – 100GB

Node	vCPU	RAM	Local Disks
Collector	Minimum – 4 Recommended – 8 (based on load)	Minimum – 4GB Recommended – 8GB	OS – 25GB OPT – 100GB

Note: compared to FortiSIEM 5.x, you need one more disk (OPT) which provides a cache for FortiSIEM.

For OPT - 100GB, the 100GB disk for /opt will consist of a single disk that will split into 2 partitions, /OPT and swap. The partitions will be created and managed by FortiSIEM when configFSM.sh runs.

Before proceeding to FortiSIEM deployment, you must configure the external storage.

- For NFS deployment, see FortiSIEM NFS Storage Guide here.
- For Elasticsearch deployment, see FortiSIEM Elasticsearch Storage Guide here.

All-in-one Installation

This is the simplest installation with a single Virtual Appliance. If storage is external, then you must configure external storage before proceeding with installation.

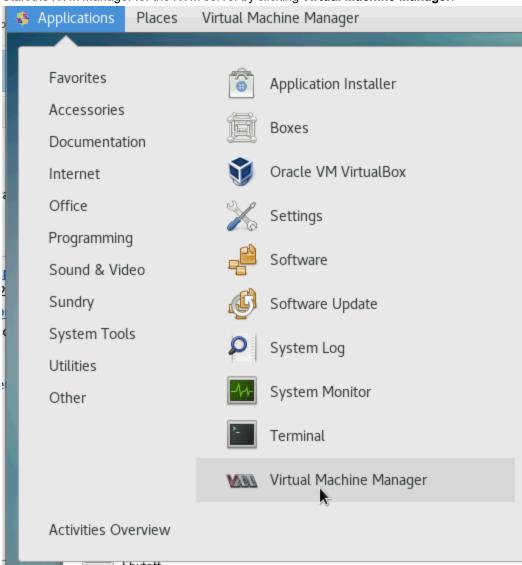
- · Import FortiSIEM into KVM
- · Configure FortiSIEM via GUI
- Upload the FortiSIEM License
- · Choose an Event Database

Import FortiSIEM into KVM

- 1. Go to the Fortinet Support website https://support.fortinet.com to download the KVM package FSM_Full_All_KVM_6.3.3_build0348.zip. See Downloading FortiSIEM Products for more information on downloading products from the support website.
- 2. Download the packages for Super/Worker and Collector to the location where you want to install the image. For example: FSM Full All KVM 6.3.3 build0348.zip.
- 3. Unzip the .zip file to get the FortiSIEM-6.3.3.0348.qcow2 file.
- **4.** Copy the above unzipped qcow2 file into the storage image location separately for the installation of super, worker, and collector. For example:

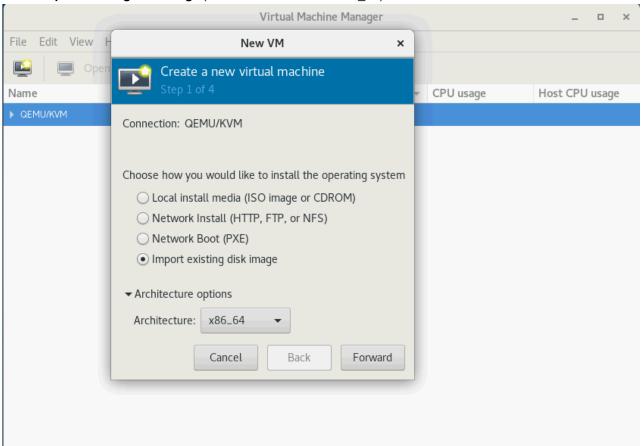
```
/var/lib/libvirt/images/super/FortiSIEM-6.3.3.0348.qcow2
/var/lib/libvirt/images/worker/FortiSIEM-6.3.3.0348.qcow2
/var/lib/libvirt/images/collector/FortiSIEM-6.3.3.0348.qcow2
```

5. Start the KVM Manager for the KVM server by clicking Virtual Machine Manager.

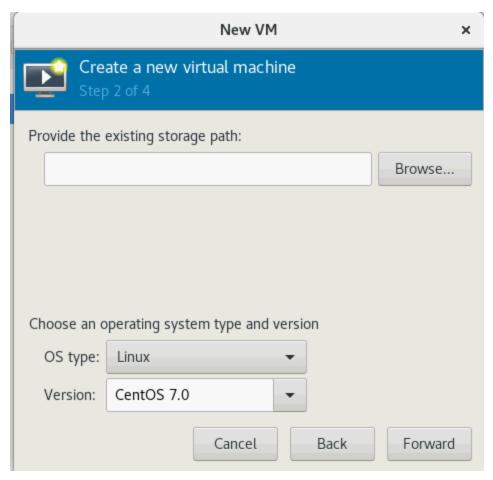


6. Click Create a new virtual machine from the Virtual Machine Manager.

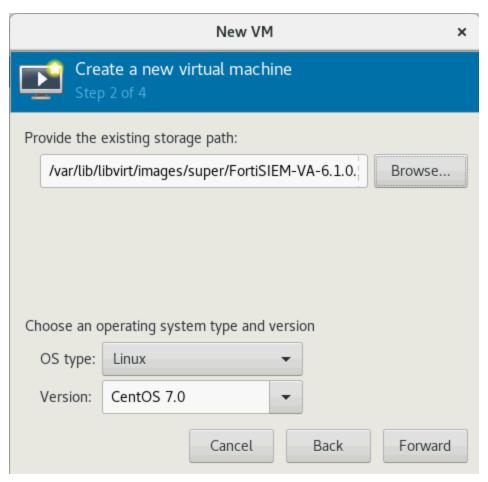
7. Select Import existing disk image (Architecture defaults to x86_64).



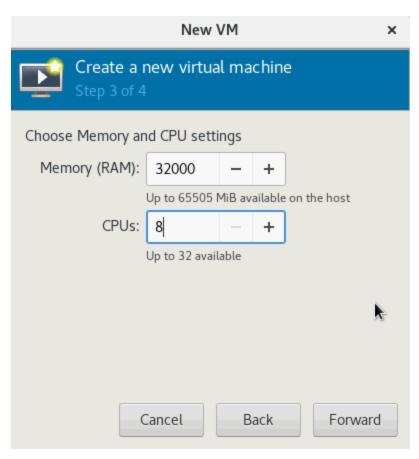
8. Click Forward from the above step, and select the OS type as Linux and Verision to CentOS 7.0, then click Forward.



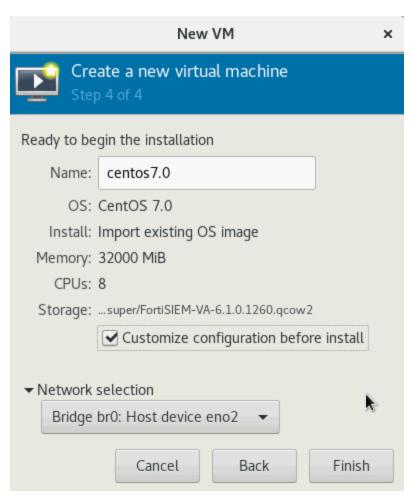
9. Click Browse... from the New VM dialog box to find the location for the file (for example, FortiSIEM-6.3.3.0348.qcow2). Or, you can directly copy the path and the qcow2 file name under Provide the existing storage path. Click Forward.



10. In the New VM dialog box, change **Memory** from 1024 to 32000 (32 GB). Change the CPUs from 1 to 8. Click Forward.



11. Before clicking Finish, make sure to check that the **Network selection** is a **Bridge**, and **Customize configuration before install** is selected. Then, click **Finish**.



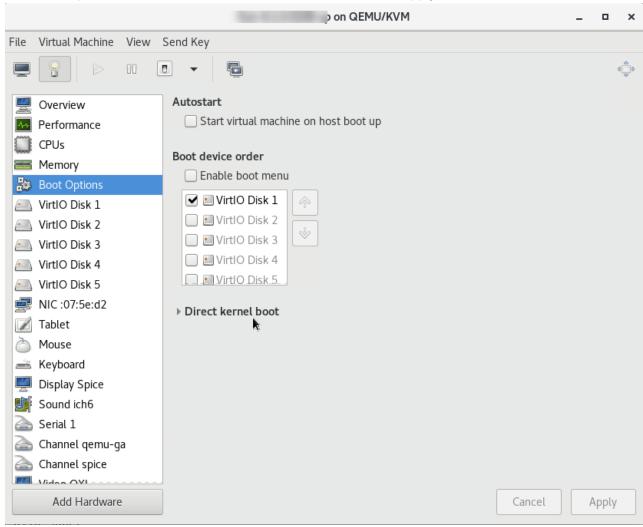
12. Start to make the configuration. This is the place where you change the name from the default name centos 7.0 in the Overview.



In every step in this configuration, you must click **Apply** to save your changes.

13. Click VirtIO Disk 1 (the default disk) and check that the Source path is correct. Click Apply.

14. Click Boot Options and make sure that VirtIO Disk 1 is checked. Click Apply.

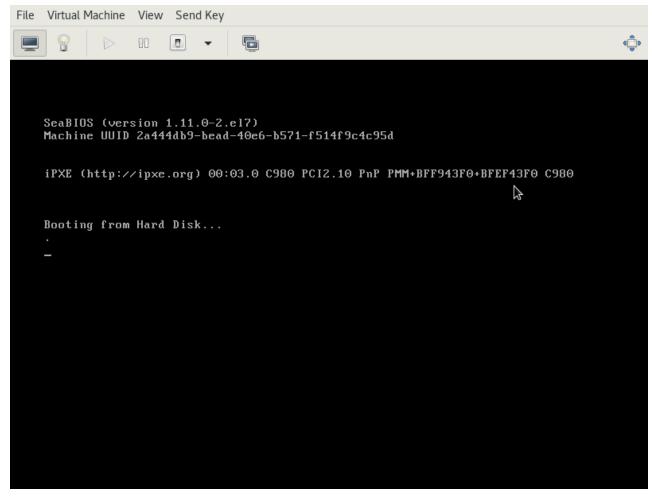


15. Add an extra three disks by clicking **Add Hardware**. Assign to them the disk image size to 100GB, 60GB, and 60GB respectively with the same Bus type of **VirtIO**. Click **Finish** to save the result.

Disk	Size	Disk Name
Hard Disk 2	100GB	/opt For OPT - 100GB, the 100GB disk for /opt will consist of a single disk that will split into 2 partitions, /OPT and swap. The partitions will be created and managed by FortiSIEM when configFSM.shruns.
Hard Disk 3	60GB	/cmdb
Hard Disk 4	60GB	/svn
Hard Disk 5	60GB+	/data (see the following note)

Note on Hard Disk 5:

- Add a 5th disk if using local storage in an All In One deployment. Otherwise, a separate NFS share or Elasticsearch cluster must be used for event storage.
- 60GB is the minimum event DB disk size for small deployments, provision significantly more event storage for higher EPS deployments. See the FortiSIEM Sizing Guide for additional information.
- NFS or Elasticsearch event DB storage is mandatory for multi-node cluster deployments.
- **16.** Click **Begin Installation** at the top of the dialog box to start the installation process.



- 17. At the end of booting, log in with the default login credentials: User: root and Password: ProspectHills.
- **18.** You will be required to change the password. Remember this password for future use. At this point, you can continue configuring FortiSIEM by using the GUI.

Configure FortiSIEM via GUI

Follow these steps to configure FortiSIEM by using a simple GUI.

- 1. Log in as user root with the password you set in Step 18 above.
- 2. At the command prompt, go to /usr/local/bin and enter configFSM.sh, for example:

```
# configFSM.sh
```

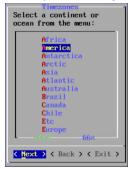
3. In VM console, select 1 Set Timezone and then press Next.



4. Select your Region, and press Next.



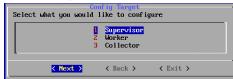
5. Select your Country, and press Next.



6. Select the Country and City for your timezone, and press Next.



7. Select 1 Supervisor. Press Next.





Regardless of whether you select **Supervisor**, **Worker**, or **Collector**, you will see the same series of screens.

8. If you want to enable FIPS, then choose 2. Otherwise, choose 1. You have the option of enabling FIPS (option 3) or disabling FIPS (option 4) later.

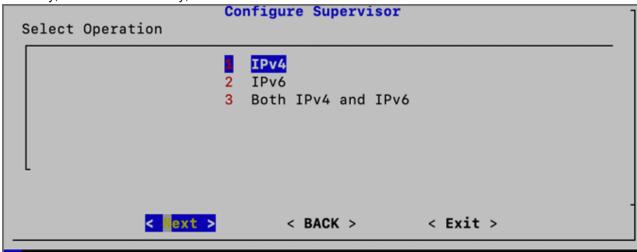
Note: After Installation, a 5th option to change your network configuration (**5 change_network_config**) is available. This allows you to change your network settings and/or host name.

```
Select Operation

install_without_fips
2 install_with_fips
3 enable_fips
4 disable_fips

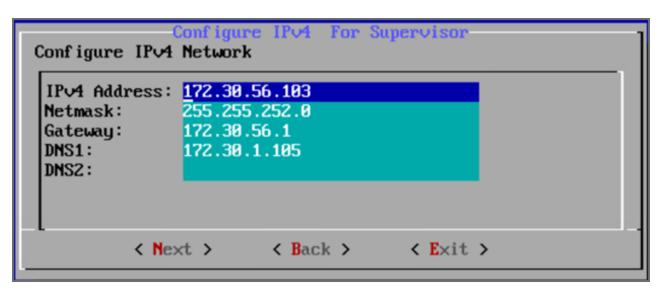
< BACK > < Exit >
```

9. Determine whether your network supports IPv4-only, IPv6-only, or both IPv4 and IPv6 (Dual Stack). Choose **1** for IPv4-only, choose **2** for IPv6-only, or choose **3** for both IPv4 and IPv6.



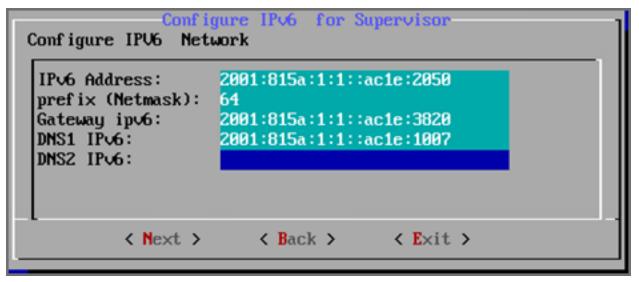
- 10. If you choose 1 (IPv4) or choose 3 (Both IPv4 and IPv6), and press **Next**, then you will move to step 11. If you choose 2 (IPv6), and press **Next**, then skip to step 12.
- 11. Configure the network by entering the following fields. Press **Next**.

Option	Description
IPv4 Address	The Supervisor's IPv4 address
NetMask	The Supervisor's subnet
Gateway	Network gateway address
DNS1, DNS2	Addresses of the DNS servers



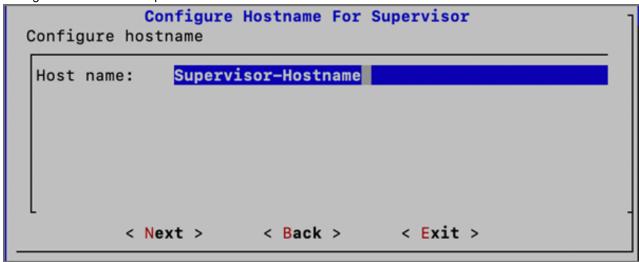
12. If you chose **1** in step 9, then you will need to skip to step 13. If you chose **2** or **3** in step 9, then you will configure the IPv6 network by entering the following fields, then press **Next**.

Option	Description
IPv6 Address	The Supervisor's IPv6 address
prefix (Netmask)	The Supervisor's IPv6 prefix
Gateway ipv6	IPv6 Network gateway address
DNS1 IPv6, DNS2 IPv6	Addresses of the IPv6 DNS server 1 and DNS server2



Note: If you chose option **3** in step 9 for both IPv4 and IPv6, then even if you configure 2 DNS servers for IPv4 and IPv6, the system will only use the first DNS server from IPv4 and the first DNS server from the IPv6 configuration. **Note**: In many dual stack networks, IPv4 DNS server(s) can resolve names to both IPv4 and IPv6. In such environments, if you do not have an IPv6 DNS server, then you can use public IPv6 DNS servers or use IPv4-mapped IPv6 address.

13. Configure Hostname for Supervisor. Press Next.

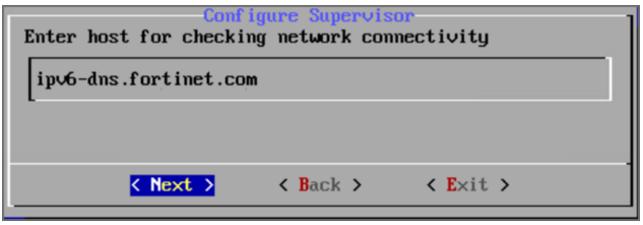


Note: FQDN is no longer needed.

14. Test network connectivity by entering a host name that can be resolved by your DNS Server (entered in the previous step) and can respond to a ping. The host can either be an internal host or a public domain host like google.com. Press **Next**.

Note: By default, "google.com" is shown for the connectivity test, but if configuring IPv6, you must enter an accessible internally approved IPv6 DNS server, for example: "ipv6-dns.fortinet.com"

Note: When configuring both IPv4 and IPv6, only testing connectivity for the IPv6 DNS is required because the IPV6 takes higher precedence. So update the host field with an approved IPv6 DNS server.



15. The final configuration confirmation is displayed. Verify that the parameters are correct. If they are not, then press **Back** to return to previous dialog boxes to correct any errors. If everything is OK, then press **Run**.

```
Run Configuration Command:

python /usr/local/bin/configureFSM.py -r super -z America/Los_Angeles -i
172.30.56.103 -m 255.255.252.0 -g 172.30.56.1 --host sp56103-3103-v46 -t 64
--dns1 172.30.1.105 --dns61 2001:815a:1:1::ac1e:1007 --i6
2001:815a:1:1::ac1e:3103 --m6 64 --g6 2001:815a:1:1::ac1e:3820 -o change_ip
--testpinghost ipv6-dns.fortinet.com
```

The options are described in the following table.

Option	Description
-r	The FortiSIEM component being configured
-Z	The time zone being configured
-i	IPv4-formatted address
-m	Address of the subnet mask
-g	Address of the gateway server used
host	Host name
-f	FQDN address: fully-qualified domain name
-t	The IP type. The values can be either 4 (for ipv4) or 6 (for v6) or 64 (for both ipv4 and ipv6).
dns1,dns2	Addresses of the DNS servers
i6	IPv6-formatted address
m6	IPv6 prefix
g6	IPv6 gateway
-0	Installation option (install_without_fips, install_with_fips, enable_fips, disable_fips, change_network_config*) *Option only available after installation.
-Z	Time zone. Possible values are US/Pacific , Asia/Shanghai , Europe/London , or Africa/Tunis
testpinghost	The URL used to test connectivity

16. It will take some time for this process to finish. When it is done, proceed to Upload the FortiSIEM License. If the VM fails, you can inspect the ansible.log file located at /usr/local/fresh-install/logs to try and identify the problem.

Upload the FortiSIEM License



Before proceeding, make sure that you have obtained valid FortiSIEM license from Forticare. For more information, see the Licensing Guide.

You will now be asked to input a license.

- 1. Open a Web browser and log in to the FortiSIEM UI. Use link https://<supervisor-ip> to login. Please note that if you are logging into FortiSIEM with an IPv6 address, you should input https://[IPv6 address] on the browser tab.
- 2. The License Upload dialog box will open.



- 3. Click **Browse** and upload the license file.
 - Make sure that the Hardware ID shown in the License Upload page matches the license.
- 4. For User ID and Password, choose any Full Admin credentials.
 - For the first time installation, enter admin as the user and admin*1 as the password. You will then be asked to create a new password for GUI access.
- 5. Choose License type as Enterprise or Service Provider.
 - This option is available only for a first time installation. Once the database is configured, this option will not be available.
- 6. Proceed to Choose an Event Database.

Choose an Event Database

For a fresh installation, you will be taken to the Event Database Storage page. You will be asked to choose between **Local Disk**, **NFS** or **Elasticsearch** options. For more details, see Configuring Storage.



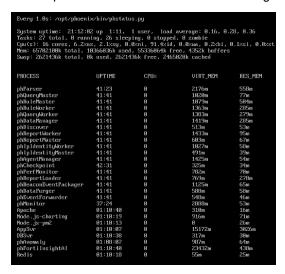
After the License has been uploaded, and the Event Database Storage setup is configured, FortiSIEM installation is complete. If the installation is successful, the VM will reboot automatically. Otherwise, the VM will stop at the failed task.

You can inspect the ansible.log file located at /usr/local/fresh-install/logs if you encounter any issues during FortiSIEM installation.

After installation completes, ensure that the phMonitor is up and running, for example:

phstatus

The response should be similar to the following.



Cluster Installation

For larger installations, you can choose Worker nodes, Collector nodes, and external storage (NFS or Elasticsearch).

- Install Supervisor
- Install Workers
- · Register Workers
- Install Collectors
- Register Collectors

Install Supervisor

Follow the steps in All-in-one Install with two differences:

- Setting up hardware you do not need an event database.
- Setting up an Event database Configure the cluster for either NFS or Elasticsearch.

NFS



Elasticsearch



You must choose external storage listed in Choose an Event Database.

Install Workers

Once the Supervisor is installed, follow the same steps in All-in-one Install to install a Worker except you need to only choose OS and OPT disks. The recommended CPU and memory settings for Worker node, and required hard disk settings are:

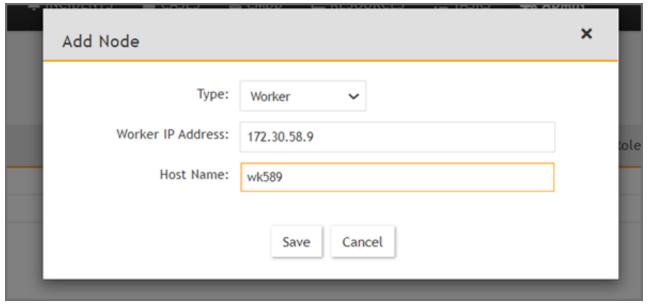
- CPU = 8
- Memory = 24 GB
- · Two hard disks:
 - OS 25GB
 - OPT 100GB

For OPT - 100GB, the 100GB disk for /opt will consist of a single disk that will split into 2 partitions, /OPT and swap. The partitions will be created and managed by FortiSIEM when configFSM.shruns.

Register Workers

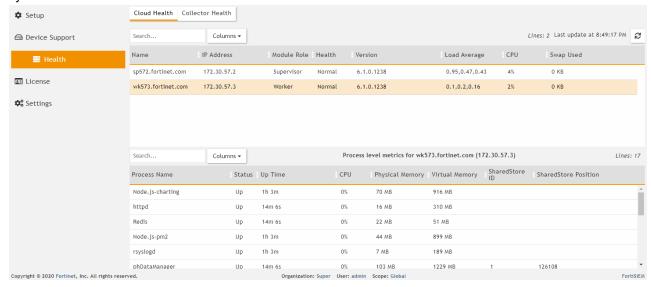
Once the Worker is up and running, add the Worker to the Supervisor node.

- 1. Go to ADMIN > License > Nodes.
- 2. Select Worker from the drop-down list and enter the Worker's IP address and host name. Click Add.



3. See ADMIN > Health > Cloud Health to ensure that the Workers are up, healthy, and properly added to the

system.



Install Collectors

Once Supervisor and Workers are installed, follow the same steps in All-in-one Install to install a Collector except you need to only choose OS and OPT disks. The recommended CPU and memory settings for Collector node, and required hard disk settings are:

- CPU = 4
- Memory = 8GB
- · Two hard disks:
 - OS 25GB
 - OPT 100GB

For OPT - 100GB, the 100GB disk for /opt will consist of a single disk that will split into 2 partitions, /OPT and swap. The partitions will be created and managed by FortiSIEM when <code>configFSM.shruns</code>.

Register Collectors

Collectors can be deployed in Enterprise or Service Provider environments.

- Enterprise Deployments
- Service Provider Deployments

Enterprise Deployments

For Enterprise deployments, follow these steps.

- 1. Log in to Supervisor with 'Admin' privileges.
- 2. Go to ADMIN > Settings > System > Event Worker.
 - a. Enter the IP of the Worker node. If a Supervisor node is only used, then enter the IP of the Supervisor node. Multiple IP addresses can be entered on separate lines. In this case, the Collectors will load balance the upload of events to the listed Event Workers.

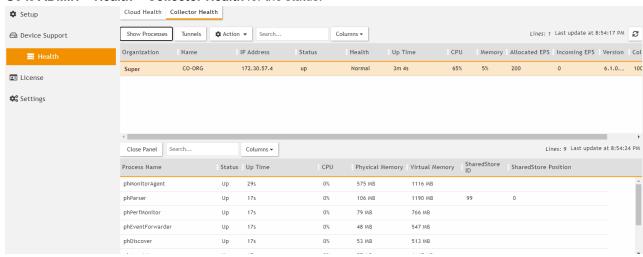
Note: Rather than using IP addresses, a DNS name is recommended. The reasoning is, should the IP addressing change, it becomes a matter of updating the DNS rather than modifying the Event Worker IP addresses in FortiSIEM.

- b. Click OK.
- 3. Go to ADMIN > Setup > Collectors and add a Collector by entering:
 - a. Name Collector Name
 - **b. Guaranteed EPS** this is the EPS that Collector will always be able to send. It could send more if there is excess EPS available.
 - c. Start Time and End Time set to Unlimited.
- 4. SSH to the Collector and run following script to register Collectors:

phProvisionCollector --add <user> '<password>' <Super IP or Host> <Organization>
<CollectorName>

The password should be enclosed in single quotes to ensure that any non-alphanumeric characters are escaped.

- a. Set user and password using the admin user name and password for the Supervisor.
- b. Set Super IP or Host as the Supervisor's IP address.
- **c.** Set Organization. For Enterprise deployments, the default name is Super.
- d. Set CollectorName from Step 2a.The Collector will reboot during the Registration.
- 5. Go to ADMIN > Health > Collector Health for the status.



Service Provider Deployments

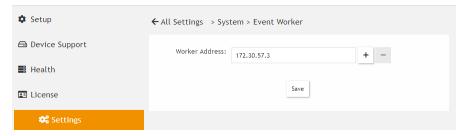
For Service Provider deployments, follow these steps.

- 1. Log in to Supervisor with 'Admin' privileges.
- 2. Go to ADMIN > Settings > System > Event Worker.
 - **a.** Enter the IP of the Worker node. If a Supervisor node is only used, then enter the IP of the Supervisor node. Multiple IP addresses can be entered on separate lines. In this case, the Collectors will load balance the upload

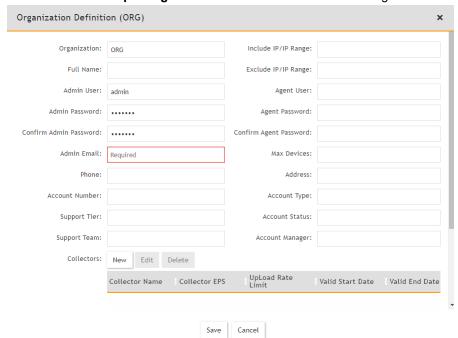
of events to the listed Event Workers.

Note: Rather than using IP addresses, a DNS name is recommended. The reasoning is, should the IP addressing change, it becomes a matter of updating the DNS rather than modifying the Event Worker IP addresses in FortiSIEM.

b. Click OK.

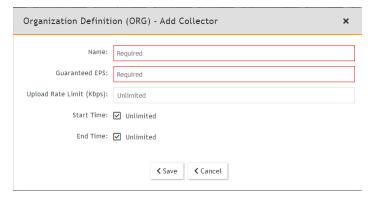


3. Go to ADMIN > Setup > Organizations and click New to add an Organization.



- 4. Enter the Organization Name, Admin User, Admin Password, and Admin Email.
- 5. Under Collectors, click New.
- 6. Enter the Collector Name, Guaranteed EPS, Start Time, and End Time.

The last two values could be set as **Unlimited**. **Guaranteed EPS** is the EPS that the Collector will always be able to send. It could send more if there is excess EPS available.



7. SSH to the Collector and run following script to register Collectors:

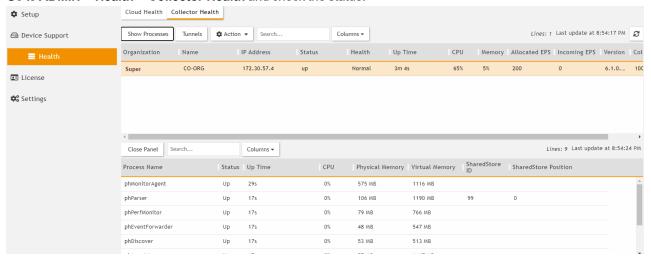
phProvisionCollector --add <user> '<password>' <Super IP or Host> <Organization>
<CollectorName>

The password should be enclosed in single quotes to ensure that any non-alphanumeric characters are escaped.

- **a.** Set user and password using the admin user name and password for the Organization that the Collector is going to be registered to.
- **b.** Set Super IP or Host as the Supervisor's IP address.
- c. Set Organization as the name of an organization created on the Supervisor.
- d. Set CollectorName from Step 6.

The Collector will reboot during the Registration.

8. Go to ADMIN > Health > Collector Health and check the status.



Install Log

The install ansible log file is located here: /usr/local/fresh-install/logs/ansible.log.

Errors can be found at the end of the file.



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