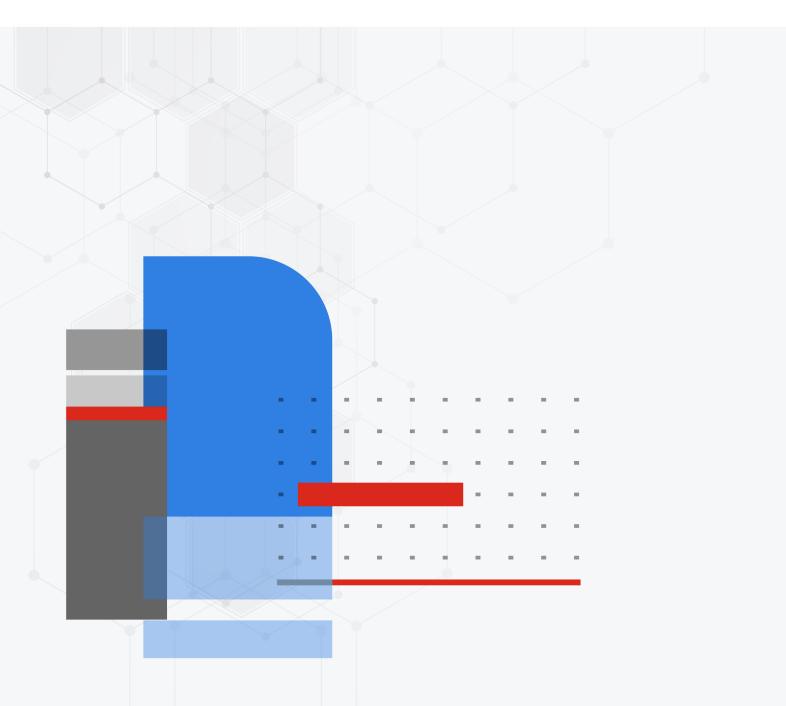


Google Cloud Platform (GCP) Installation Guide

FortiSIEM 6.7.2



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10/03/2023 FortiSIEM 6.7.2 Google Cloud Platform (GCP) Installation Guide

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Change Log

Date	Change Description
02/28/2022	Initial version of FortiSIEM - Google Cloud Platform Installation Guide (6.4.0).
05/03/2022	Added step (step 13) to Import FortiSIEM GCP Image into Google Cloud Image section.
05/09/2022	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.5.0.
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09/12/2022	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.5.1.
09/14/2022	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.6.1.
09/19/2022	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.6.2.
10/20/2022	Updated Register Collectors instructions for 6.x guides.
12/06/2022	Updated Configure FortiSIEM via GUI section.
01/03/2023	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.7.0.
02/13/2023	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.7.1.
02/21/2023	Pre-Installation Checklist, Choose an Event Database, Install Supervisor, Install Workers and Register Workers sections updated for 6.7.x Guides. Added Create ClickHouse Topology (Optional) and Final Check sections to 6.7.x Guides.
03/07/2023	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.7.2.
03/28/2023	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.7.3.
04/11/2023	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.7.4.
05/18/2023	Updated Import FortiSIEM GCP Image into Google Cloud Image section.
05/22/2023	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.7.5.
06/16/2023	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.7.6.
07/13/2023	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.7.7.
09/12/2023	Release of FortiSIEM - Google Cloud Platform Installation Guide for 6.7.8.

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.
- Choose deployment type Enterprise or Service Provider. The Service Provider deployment provides multitenancy.
- Determine whether FIPS should be enabled
- Choose install type:
 - All-in-one with FortiSIEM Manager
 - Cluster with Manager, Supervisor and Workers
 - All-in-one with Supervisor only, or
 - Cluster with Supervisor and Workers
- Choose storage type
 - Online There are 4 choices
 - ClickHouse Recommended for most deployments. Please see ClickHouse Reference Architecture for more information.
 - EventDB on local disk
 - EventDB on NFS
 - Elasticsearch
 - Archive There are 2 choices
 - EventDB on NFS
 - HDFS
- Determine hardware requirements:

Node	vCPU	RAM	Local Disks
Manager	Minimum – 16 Recommended - 32	Minimum • 24GB Recommended • 32GB	OS – 25GB OPT – 100GB CMDB – 60GB SVN – 60GB
Supervisor (All in one)	Minimum – 12 Recommended - 32	Minimum without UEBA – 24GB 	OS – 25GB OPT – 100GB

Node	vCPU	RAM	Local Disks
		 with UEBA - 32GB Recommended without UEBA - 32GB with UEBA - 64GB 	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
Collector	Minimum – 4 Recommended – 8 (based on load)	Minimum – 4GB Recommended – 8GB	OS – 25GB OPT – 100GB

- If your Online event database is external (e.g. EventDB on NFS or Elasticsearch), then you must configure external storage before proceeding to FortiSIEM deployment.
 - For NFS deployment, see here.
 - For Elasticsearch deployment, see here.
- If your Online event database is internal, that is, inside Supervisor or Worker nodes, then you need to determine the size of the disks based on your EPS and event retention needs.
 - For EventDB on local disk, see here.
 - For ClickHouse, see here.
- 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.

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 GCP Image into Google Cloud Image
- Configure FortiSIEM
- Upload the FortiSIEM License
- Configure an Event Database
- Final Check

Import FortiSIEM GCP Image into Google Cloud Image

- 1. Go to the Fortinet Support website https://support.fortinet.com to download the GCP package fortisiem-gcp-6-7-2-1727.tar.gz. See Downloading FortiSIEM Products for more information on downloading products from the support website.
- 2. Identify the Google Cloud storage bucket where you plan to upload the FortiSIEM GCP image. Refer to the Google Cloud documentation on how to create a storage bucket in the appropriate location/region. For example: fsm-image-bucket.

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	Cloud Storage	← Bucket details			C REFRESH
	Browser	fsm-image-bucket			
	Monitoring	Location	Storage class Public acces		1
\$	Settings	us (multiple regions in United States)	Standard Not public	None	
		OBJECTS CONFIGURATION	PERMISSIONS PROT	ECTION	LIFECYCLE
		Buckets > fsm-image-bucket 🗖			
		UPLOAD FILES UPLOAD FOLDER DELETE	CREATE FOLDER MAN	AGE HOLDS	DOWNLOAD

3. Click UPLOAD FILES and navigate to the downloaded FortiSIEM gcp image file - fortisiem-gcp-6-7-2-1727.tar.gz.

≡	Google Cloud Platform	8 • s	software-development-4700	• [Q Search Pr	~	5.	0	0		S
	Cloud Storage	÷	Bucket details						C	7 REFRI	ESH
•	Browser	fs	n-image-bucket					_			
	Monitoring	Lo	Cancel		File Upload Searching in data	1				۹	Open
\$	Settings	us	⊘ Recent		Q, fortisiem					Ð	3
		OF	🔂 Home	Name			Locatio	n	Size	Μ	lodified
	-		Documents	📋 fort	isiem-gcp-6-4-0-141	2.tar.gz	-	•	4.3 G	31	1 Feb
		В	↓ Downloads								
			J Music								
		Filt	D Pictures								
			Videos								
		No								A	ll Files 👻

4. Wait for upload to complete by keeping track of the progress information/bar.

	Google Cloud Platform	software-development-4700 🗸 🔍 Search Pr 🗸 🖸 1 🗄 S						
	Cloud Storage	← Bucket details C REFRESH						
•	Browser	fsm-image-bucket						
ين ب	Monitoring Settings	Location Storage class Public access Protection us (multiple regions in United States) Standard Not public None						
		OBJECTS CONFIGURATION PERMISSIONS PROTECTION LIFECYCLE						
		Buckets > fsm-image-bucket □ UPLOAD FILES UPLOAD FOLDER CREATE FOLDER MANAGE HOLDS DELETE Filter by name prefix only ▼ = Filter Filter objects and folders Show deleted data						
		Name Size Type Created ♥ Storage class Last modified Public access ♥ Ve No rows to display						
\ <u>*</u>	Marketplace							
Ē	Release Notes	Uploads and software-development-47 operations \checkmark						
<۱		C fortisiem-gcp-6-4-0-1412.tar.gz						

5. Once the upload is complete, navigate to Google Cloud Images service.

6. Click CREATE IMAGE.

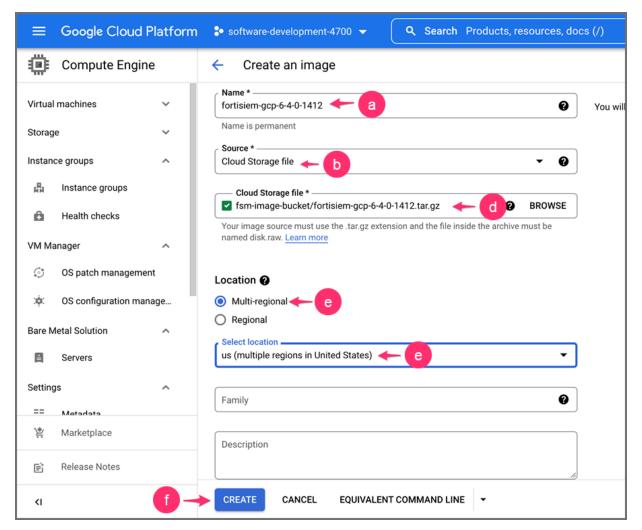
≡ Google Cloud	Platform	🐉 software-de	velopment-4700 🔻	٩ ٩	Search Pro			
Compute Engin	ne	Images	[+] CREATE IMAGE	C REFRESH	DELETE			
Virtual machines	~	An image is a replica of a disk that contains the applications and operating system needed to start a VM. You can create custom images or use public images pre-						
Storage	^	configured with	Linux or Windows OSes. Lea	arn more				
Disks		IMAGES	IMAGE IMPORT HISTO	RY IMAGE	EXPORT HISTORY			

- 7. From the Create an image section, take the following steps.
 - a. In the Name field, enter the name of the image as fortisiem-gcp-6-7-2-1727 (lowercase alphanumeric with dashes allowed only).

- b. From the Source drop-down list, choose Cloud Storage file.
- c. Click **BROWSE** and browse to the storage bucket where you uploaded the image tar.gz file.
- d. Select the bucket, and then select the uploaded file fortisiem-gcp-6-7-2-1727.tar.gz.

Start your Free Trial with \$300 in cre	dit. Don't worry—you won't be charged if you run out of credits. Learn more	Select object
\equiv Google Cloud Platform	software-development-4700 👻 🔍 Q. Search Products, resources, doc	Search by name prefix
Compute Engine	← Create an image	
Virtual machines 🗸 🗸	Name *	Buckets that start with "fsm"
Storage 🗸 🗸	Name is permanent	fsm-image-bucket
Instance groups	Cloud Storage file	
		C
Health checks	Cloud Storage file * BROWSE BROWSE	
VM Manager	Your image source must use the .tar.gz extension and the file inside the archive must be named disk.raw. Learn more	
OS patch management		
🔅 OS configuration manage	Location @	
Bare Metal Solution	O Regional	
Servers	Select location	
Settings		
== Motodoto	Family	
🖄 Marketplace		d
🕞 Release Notes	Description	Ŧ
<1	CREATE CANCEL EQUIVALENT COMMAND LINE -	SELECT CANCEL

- e. For Location, select Multi-regional, and choose your location. You can leave the rest of the options as default unless you have specific requirements to change them.
- f. When done, click CREATE.



8. Click on Filter, select Name and type in fortisiem-gcp to see the image you have created. Make sure this image exists.

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۲	Compute Engine		Images	[+] c	REATE IMAGE	C REFRES	H 👕 DELETE		
Virtual Storag	machines e Disks	~ ^	needed to	start a VM. You d with Linux or W		om images or u earn more	ons and operating system se public images pre- AGE EXPORT HISTORY		
0	Snapshots		두 Filt	Name : fo	ortisiem-gcp 🛞	← ×	Show	w deprecated images	m
[#]	Images			Enter prop	erty name or val	le			
Instan	ce groups Instance groups	^		Status	Name fortisiem- gcp-6-4-0- 1412	Location	Archive size ? 4.02 GB	Disk size	Actions
â	Health checks				1712				
VM Ma	anager	^							

9. Click on the 3 dots below the Actions column and click Create instance.

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۲	Compute Engine	e	Images	S	[+] CREATE IMAGE	C REFRESH	H 👕 DELETE			🖻 HELF
Virtual	machines	~	An image	n image is a replica of a disk that contains the applications and operating system						
Storag	e	^			M. You can create custo ux or Windows OSes. Le	-	e public images pre-			PERMISS
۵	Disks	- 1	IMAG	SES	IMAGE IMPORT HIST	DRY IMA	AGE EXPORT HISTORY			Edit or dele
0	Snapshots	_	Ξ Fil	lter Na	me : fortisiem-gcp 😣	×	n 🔊 Sh	ow deprecated images	m	"Add Princ
	Images				er property name or valu		Ū			
		_	~	Status	Name	Location	Archive size 💡	Disk size	Actions	
Instan	ce groups	^		0	fortisiem-	us	4.02 GB	25 GB	→: ↓	〒 Filter
អង	Instance groups				<u>gcp-6-4-0-</u> 1412				Creat	e instance
â	Health checks								⊖ Depre	ecate

- 10. Choose defaults for all remaining items until the Firewall section. Choose Allow HTTPS Traffic.
- 11. For the Networking section, you can leave it as default unless you need to change some values.
- 12. In the Disks section, add an extra three disks by clicking Add NEW DISK. Assign to them, the disk image size of 100GB, 60GB, and 60GB respectively with Disk source type as blank, appropriate Disk type Balanced, Extreme, SSD, or Standard (Refer to Google Cloud documentation for details on performance differences). Click Save to save the result. Make sure to name your disks properly so each disk can be found/identified easily.

Disk	Size	Disk Name
Disk 2	100GB	/opt

Disk	Size	Disk Name
		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.
Disk 3	60GB	/cmdb
Disk 4	60GB	/svn
Disk 5	60GB+	/data (see the following note)

Note on Hard Disk 5:

- Add the 5th disk only if using EventDB on local storage or ClickHouse. In all other cases, this disk is not required. ClickHouse is recommended for most deployments. Please see ClickHouse Reference Architecture for more information.
- For EventDB on local disk, choose a disk based on your EPS and event retention policy. See EventDB Sizing Guide for guidance. 60GB is the minimum.
- For ClickHouse, choose disks based on the number of Tiers and disks on each Tier. These depend on your EPS and event retention policy. See ClickHouse Sizing Guide for guidance. For example, you can choose 1 large disk for Hot Tier. Or you can choose 2 Tiers - Hot Tier comprised of one or more SSD disks and Warm Tier comprised of one or more magnetic hard disks.

=	Google Cloud Platform software-d	evelopment-4700 👻	Q Search Products, resources, docs (/)
÷	Create an instance		
To cr	reate a VM instance, select one of the options:	Disks Additional disks	ks
Ħ	New VM instance Create a single VM instance from scratch	New disk	opt-fsm-super-640-gcp, Blank, 100 GB 🖍 🗙
÷	New VM instance from template	New disk New disk	cmdb-fsm-super-640-gcp, Blank, 60 GB / X svn-fsm-super-640-gcp, Blank, 60 GB / X
	Create a single VM instance from an existing template	New disk	data-fsm-super-640-gcp, Blank, 120 GB
:::	New VM instance from machine image Create a single VM instance from an existing	+ ADD NEW	EW DISK + ATTACH EXISTING DISK + ADD LOCAL SSD

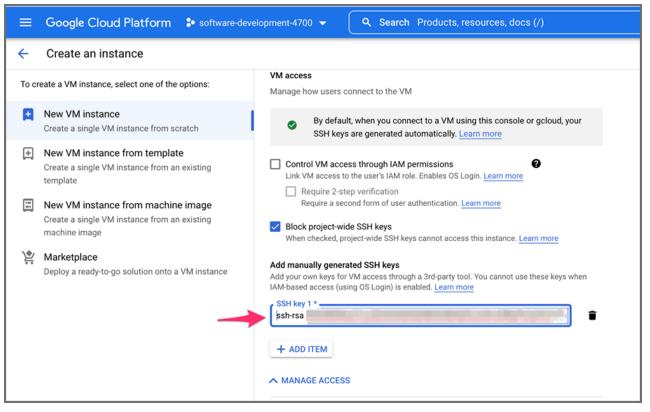
13. Under Deletion rule, select Delete disk.



14. Under the Security section, select Manage Access. If you would like to ssh access the instance from your own terminal, then you will need to provide manually generated ssh public keys (RSA or DSA) with a user name at the end like below

ssh-rsa <public-key> <username>

If you only wish to connect to the instance from GCP's browser based terminal, you should choose **Control VM** access through IAM permissions.



- 15. Leave Management and Tenancy sections with their default values unless you need to change it per your needs.
- 16. Click Create.
- **17.** The **VM Instances** page should now appear. In the Name Filter, enter your VM instance name, for example, fsm-640-super-gcp. This will show your instance. You can click on **SSH** button.

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۲	Compute Engine	VM instances		INSTANCE	L IMPORT VM	:	© OPERATIONS ▼
Virtual	machines ^	12 instances	could be resized	to save you up 1	o an estimated \$389 per month.	Learn m	nore
A	VM instances	DISMISS ALL					
	Instance templates						
8	Sole-tenant nodes		INSTANCE SCHEI		running workloads on Google		
	Machine images	infrastructure. Learn mor	-				
~	TPUs	∓ Filter Name :	fsm-640-super-go	p 🙁 Enter p	roperty name or value	×	0 III
%	Committed use discounts	Status	Name 🕇	Zone	Recommendations In use by	Conne	ect
٩	Migrate for Compute Engi		fsm-640- super-gcp	us- central1- a		SSH	- i
Storag	e 🗸			-			
Instan	ce groups						

18. When you click on **SSH**, you will be logged in on the browser based ssh console. You can now run sudo su - to get to root.

	VM inst X O Goog	gle 🗙 🛛 🎒 Open s 🗙	Setting X	Submiti	root@fsm-640-super-gcp:~
← -:		gle.com/compute/inst			ssh.cloud.google.com/projects/software-development-4700/zones/us-central1-a/instances/fsm-64
ñ	Start your Free Trial with \$300 in cred	it. Don't worry—you won't be	charged if you run out of		acted, host fingerprint: scherch () because it for the AP-secured fundels bedre 200 Please consider adding the IAP-secured funnel User IAM role to start using Cloud IAP for TCP forwarding for better @fsm=640-super-gop ~ performance. Learn more Dismiss
≡	Google Cloud Platform	software-develop	ment-4700 🔻	Q Sear[s [s	@fsm-640-super-gcp ~}\$ @fsm-640-super-gcp ~}\$ @fsm-640-super-gcp ~}\$
۲	Compute Engine	VM instances	CREATE INST	[S	@fsm-640-super-gcp ~]\$ @fsm-640-super-gcp ~]\$ @fsm-640-super-gcp ~]\$ sudo su - loqin: Mon Feb 28 17:57:41 UTC 2022 on pts/0
Virtual	machines ^	 12 instanc 	es could be resized to s	[roo	login don rep zo 17:57-91 of 2022 on ployo 28fsm=640-super-gcp ~]∦ ■
A	VM instances	DISMISS A	ш		
	Instance templates				
8	Sole-tenant nodes	INSTANCES	INSTANCE SCHEDUL		
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-%-	Committed use discounts	Status	Name 🛧 Zo	ne	
٩	Migrate for Compute Engi			- ntral1-	
Storag	e ~		a	-	
Instan	ce groups				
品	Instance groups				
A	Haalth charke				

At this point, you can continue configuring FortiSIEM by using the GUI.

Configure FortiSIEM

Follow these steps to configure FortiSIEM.

- 1. At the command prompt, go to /usr/local/bin and enter configFSM.sh, for example:
 # configFSM.sh
- 2. In VM console, select 1 Set Timezone and then press Next.



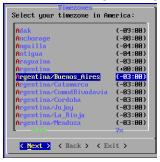
3. Select your Region, and press Next.



4. Select your Country, and press Next.



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



6. If installing a Supervisor, select 1 Supervisor. Press Next. If installing a Worker, select 2 Worker, and press Next. If installing a Collector, select 3 Collector, and press Next. If Installing FortiSIEM Manager, select 4 FortiSIEM Manager, and press Next. If Installing FortiSIEM Supervisor Follower, select 5 Supervisor Follower and press Next. Note: The appliance type cannot be changed once it is deployed, so ensure you have selected the correct option.

Config Target Select what you would like to configure			
4	Supervisor Worker Collector FortiSIEM Manager Supervisor Follower		
< Next >	< Back > < Exit >	-	



Regardless of whether you select **FortiSIEM Manager, Supervisor**, **Supervisor Follower**, **Worker**, or **Collector**, you will see the same series of screens with only the header changed to reflect your target installation, unless noted otherwise.

A dedicated ClickHouse Keeper uses a Worker, so first install a Worker and then in later steps configure the Worker as a ClickHouse Keeper.

7. 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.

C Select Operation	ontigure Supervisor	
2 3 4	<pre>install_without_fip install_with_fips enable_fips disable_fips</pre>)S
< Mext >	< BACK >	< Exit >

8. 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.

Select Operation	Configure Supervisor
	IPv4 2 IPv6 3 Both IPv4 and IPv6
	3 Both IPV4 and IPV6
L	
< Next >	< BACK > < Exit >

- 9. 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.
- **10.** Configure the network by entering the following fields. Press **Next**.

Option	Description
IPv4 Address	The Manager/Supervisor/Worker/Collector's IPv4 address
NetMask	The Manager/Supervisor/Worker/Collector's IPv4 subnet
Gateway	IPv4 Network gateway address
DNS1, DNS2	Addresses of the IPv4 DNS server 1 and DNS server2

Configure IPv4 IPv4 Address: Netmask: Gateway: DNS1: DNS2:		;)r
- < Nex	t > < Back	: > < Ex i	.t >

11. 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 Manager/Supervisor/Worker/Collector's IPv6 address
prefix (Netmask)	The Manager/Supervisor/Worker/Collector's IPv6 prefix
Gateway ipv6	IPv6 Network gateway address
DNS1 IPv6, DNS2 IPv6	Addresses of the IPv6 DNS server 1 and DNS server2

Confi Configure IPV6 Net	gure IPv6 for Supervisor work
IPv6 Address: prefix (Netmask): Gateway ipv6: DNS1 IPv6: DNS2 IPv6:	2001:815a:1:1::ac1e:2050 64 2001:815a:1:1::ac1e:3820 2001:815a:1:1::ac1e:1007
<pre></pre>	<pre>< Back > < Exit ></pre>

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.

12. Configure Hostname for FortiSIEM Manager/Supervisor/Worker/Collector. Press Next.

Co Configure host	nfigure Hostname For Supervisor
Host name:	Supervisor-Hostname
	xt > < Back > < Exit >
< Ne	XT > < Back > < EXIT >

Note: FQDN is no longer needed.

13. 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.

Configure Supervisor Enter host for checking network connectivity			
ipv6-dns.fortinet.com			
< Next >	< Back >	< Exit >	-

14. 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:	gure Supervisor	
<pre>python /usr/local/bin/configureF -m 255.255.255.255 -g 10.128.0.1 169.254.169.254dns61 2001:81 2001:815a:1:1::acle:2050m6 64 install_without_fipstestpingh</pre>	host fsm-640- 5a:1:1::acle:100 g6 2001:815a:	super-gcp -t 64dns1 7i6
< Run >	< Back >	< Exit >

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

Option	Description
-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

15. 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.

😿 FortiSIEM			
Hardware ID:	17082942-2e97-01cd-7f81-d0eb9fd682f2		
Select license file:	Browse		
User ID:			
Password:			
License Type:	ullet Enterprise $igodot$ Service Provider		
	Upload		

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.

For FortiSIEM Manager, **License Type** is not an available option, and will not appear. At this point, FortiSIEM Manager installation is complete. You will not be taken the Event Database Storage page, so you can skip **Configure an Event Database**.

Note: The FortiSIEM Manager license allows a certain number of instances that can be registered to FortiSIEM Manager.

6. Proceed to Configure an Event Database.

Configure an Event Database

Choose the event database.

FortiSIEM			
Event Database:	EventDB on Local Disk 🗸		
Disk Name:	EventDB on Local Disk EventDB on NFS ClickHouse Elasticsearch	e	

If the Event Database is one of the following options, additional disk configuration is required.

- ClickHouse: See Case 2 in Creating ClickHouse Online Storage.
 Recommended for most deployments. Please see ClickHouse Reference Architecture for more information.
- EventDB on Local Disk: See Case 2 in Creating EventDB Online Storage.

Final Check

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

For the Supervisor, Supervisor Follower, Worker and Collector, the response should be similar to the following.

	ix/bin/phstatu	s.py		
System uptime: 21:12:0 Tasks: 27 total, 0 runn Cpu(s): 16 cores, 6.2xu Mem: 65702100k total, 3 Swap: 2621436k total, 6	ning, 26 sleep us, 2.1%sy, 0.1 10366036k used	ing, 0 stopped 8%ni, 91.4%id , 55336064k fi	l, 0 zombie , 0.0%wa, 0.2%hi, ree, 4352k buffers	0.1%si, 0.0%st
PROCESS	UPTIME	CPU×	VIRT_MEM	RES_MEM
phParser	41:23	Ø	2176m	558m
phQueruMaster	41:41	й Й	1020m	77m
phquergraster phRuleMaster	41:41	в Я	1020m	504m
phRuleWorker	41:41	0	1363m	285m
phQueryWorker	41:41	0	1383m	279m
phDataManager	41:41	0	1419m	285m
phDiscover	41:41	Ø	513m	53m
phBreportWorker	41:41	0	1433m	95m
phReportMaster	41:41	0	603m	55m 67m
phreportraster	41:41	0	1027m	58m
phipidentityWorker	41:41	Ø	1027m 491m	39m
phipiaentlitymaster	41:41	0	1425m	54m
	41:41	0	1425m 325m	59m 34m
phCheckpoint	42:31	Ø	325m 782m	39m 70m
phPerfMonitor	41:41	Ю	782m 769m	70m 278m
phReportLoader				
phBeaconEventPackager	41:41	0	1125m	65m
phDataPurger	41:41	0	588m	58m
phEventForwarder	41:41	0	548m	46m
phMonitor	37:24		2888m	53m
Apache	01:10:40		310m	16m
Node.js-charting	01:10:19		916m	71m
Node.js-pm2	01:10:13			26m
AppSvr	01:10:07	0	15172m	3026m
DBSvr	01:10:38		317m	30m
phAnoma ly	01:08:07		987m	64m
phFortiInsightAI	01:10:40	0	23432m	438m
Redis	01:10:18		55m	25m

For FortiSIEM Manager, the response should look similar to the following.

Every 1.0s: /opt/phoenix/bin/phstatus.py

System uptime: 11:34:52 up 1 day, 1:39, 2 users, load average: 0.80, 0.88, 0.92 Tasks: 5 total, 0 running, 5 sleeping, 0 stopped, 0 zombie Cpu(s): 8 cores, 7.2%us, 0.2%sy, 0.0%ni, 92.3%id, 0.0%wa, 0.1%hi, 0.1%si, 0.0%st Mem: 24468724k total, 6696192k used, 16212508k free, 5248k buffers Swap: 26058744k total, 0k used, 26058744k free, 2352072k cached

PROCESS	UPTIME	CPU%	VIRT_MEM	RES_MEM
ph M onitor	20:57:20	0	1130m	64m
Apache	1-01:20:00	0	305m	16m
Rsyslogd	1-01:38:42	0	192m	7388k
AppSvr	1-01:38:34	5	11153m	4182m
DBSvr	1-01:38:43	0	425m	39m

Cluster Installation

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

- Install Supervisor
- Install Workers
- Register Workers
- Create ClickHouse Topology (Optional)

- Install Collectors
- Register Collectors
- Install Manager
- Register Instances to Manager

Install Supervisor

Follow the steps in All-in-one Installation, except with the following differences.

- 1. Event Database choices are EventDB on NFS, ClickHouse, or Elasticsearch.
- 2. If you choose EventDB on NFS
 - a. Disk 5 is not required (From Import FortiSIEM GCP Image into Google Cloud Image Step 12).
 - b. You need to configure NFS after license upload.

	FortiSIEM
Event Database:	EventDB on NFS 🗸
Server:	IP O Host Server IP/Host
Exported Directory:	Exported Directory
	Test

3. If you choose ClickHouse

a. You need to create disks during Import FortiSIEM GCP Image into Google Cloud Image Step 12 based on the role of the Supervisor node in the ClickHouse cluster. See the ClickHouse Sizing Guide for details.

b. You need to configure disks after license upload.

	🔆 FortiSl	EM
Event Database:	ClickHouse V	
Hot Tier:	Disk Path	Row +
Warm Tier:	Disk Path	Row + -
	Test Save]

4. If you choose **Elasticsearch**, define Elasticsearch endpoints after license upload. See the Elasticsearch Sizing Guide for details.

	🔀 FortiS	SIEM		
Event Database:	Elasticsearch 🗸			
ES Service Type:	● Native ○ Amazon ○ Elasti	ic Cloud		
Endpoint:	URL	Ingest	Query	Row
	https://		•	•
REST Port:	443			
User Name:	(Optional)			
Password:	(Optional)			
Confirm Password:				
Shard Allocation:	⊖ Fixed			
Shards:	5			
Replicas:	1			
Per Org Index				
	Test	2		

Install Workers

Once the Supervisor is installed, take the same steps in All-in-one Installation to install a Worker with the following differences.

- 1. Choose appropriate CPU and memory for the Worker nodes based on Sizing guide.
- 2. Two hard disks for Operating Systems and FortiSIEM Application:
 - 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.

3. If you are running ClickHouse, then create additional data disks based on the role of the Worker in ClickHouse topology. If it is a Keeper node, then a smaller disk is needed. If it is a data node, then a bigger disk is needed based on your EPS and retention policy. See ClickHouse Sizing Guide for details.

Sizing Guide References:

- ClickHouse Sizing Guide
- EventDB Sizing Guide
- Elasticsearch Sizing Guide

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 Mode drop-down list and enter the following information:
 - a. In the Host Name field, enter the Worker's host name.
 - b. In the IP Address field, enter the Worker's IP address.
 - c. If you are running ClickHouse, then select the number for Storage Tiers from the **Storage Tiers** drop-down list, and input disk paths for disks in each Tier in the **Disk Path** fields.

For **Disk Path**, use one of the following CLI commands to find the disk names.

fdisk -l

or

lsblk

When using lsblk to find the disk name, please note that the path will be /dev/<disk>. As an example, /dev/vdc.

d. Click Test.

Add Node				×
Mode: W	orker 🗸			
Host Name: wk	-example			
IP Address: 19	2.0.2.0			
Running On: V/	Λ 🗸			
Storage Tiers:	2 🗸			
Hot Tier:	Disk Path	Mounted On	Row	
		/data-clickhouse-hot-1	•	
Warm Tier:	Disk Path	Mounted On	Row	
		/data-clickhouse-warm-1	•	
	Test S	ave Cancel		

- e. If the test succeeds, then click Save.
- 3. See ADMIN > Health > Cloud Health to ensure that the Workers are up, healthy, and properly added to the system.

🌣 Setup	Cloud Health Collec	tor Health							
🖨 Device Support	Search	Columns 🕶						Lines: 2 Last update at 8:4	9:17 PM 🔁
📕 Health	Name	IP Address	Module Role H	lealth Ve	rsion	Load Average	e CPU	Swap Used	
	sp572.fortinet.com	172.30.57.2	Supervisor N	Normal 6.1	.0.1238	0.95,0.47,0.4	3 4%	0 KB	
License	wk573.fortinet.com	172.30.57.3	Worker M	Normal 6.1	.0.1238	0.1,0.2,0.16	2%	0 KB	
🕫 Settings									
	Search	Columns 🗸		Process	level metrics for wk	73.fortinet.com (1	72.30.57.3)		Lines: 17
	Process Name	Status	Up Time	CPU	Physical Memory	Virtual Memory	SharedStore ID	SharedStore Position	
	Node.js-charting	Up	1h 3m	0%	70 MB	916 MB			^
	httpd	Up	14m 6s	0%	16 MB	310 MB			_
	Redis	Up	14m 6s	0%	22 MB	51 MB			
	Node.js-pm2	Up	1h 3m	0%	44 MB	899 MB			
	rsyslogd	Up	1h 3m	0%	7 MB	189 MB			
	phDataManager	UD	14m 6s	0%	103 MB	1229 MB	1	126108	-
Copyright © 2020 Fortinet, Inc. All rights reserve	red.		Organization: S	uper User: admi	n Scope: Global				FortiSIEM

Create ClickHouse Topology (Optional)

If you are running ClickHouse, you need to configure ClickHouse topology by specifying which nodes belong to ClickHouse Keeper and Data Clusters. Follow the steps in Configuring ClickHouse Topology.

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 settings for Collector node 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 configFSM.shruns.

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 > Cluster Config.
 - a. Enter the IP of the Worker node in the Event Upload Workers column. 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 Save.
 - c. In the Supervisors column, enter the IP of the Supervisor node and click Save.
- 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.

🌣 Setup	Cloud Health	Collector Healt	h											
🗇 Device Support	Show Processes	Tunnels	Cartion 🗘	• Search		Column	s -				Lines: 1	Last update at 8	8:54:17 PM	ø
📑 Health	Organization	Name	11	P Address	Status	÷ H	ealth l	Jp Time	CPU	Memory	Allocated EPS	Incoming EPS	Version	l Col
E License	Super	CO-ORG		172.30.57.4	up	N	ormal	3m 4s	65%	5%	200	0	6.1.0	100
✿ Settings														
	4													-
	Close Panel	Search		Columns 🗸							Lii	nes: 9 Last updat	te at 8:54:2	24 PM
	Process Name		Status	Up Time	C	PU	Physical Mem	ory Virtual M		SharedStore ID	SharedStore P	osition		
	phMonitorAgent		Up	29s	0	%	575 MB	1116 MB						^
	phParser		Up	17s	0	%	106 MB	1190 MB		99	0			- 11
	phPerfMonitor		Up	17s	0	%	79 MB	766 MB						- 11
	phEventForwarde	er	Up	17s	0	95	48 MB	547 MB						
	phDiscover		Up	17s	0	%	53 MB	513 MB						
														÷

Service Provider Deployments

For Service Provider deployments, follow these steps.

- 1. Log in to Supervisor with 'Admin' privileges.
- 2. Go to ADMIN > Settings > System > Cluster Config.
 - a. Enter the IP of the Worker node in the Event Upload Workers column. 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 Save.

c. In the Supervisors column, enter the IP of the Supervisor node and click Save.

FortiSIEM	ø ⊾ ▲ ■ € ਘ ≅ ✿	8	▲	1	•	•
🌣 Setup	← All Settings > System > Cluster Config					
🖨 Device Support	Supervisors Event Upload Workers					
📕 Health	Address: + - Address:		+	-		
E License	1.0.07		+	-		
S Content Update	Save					
🗱 Settings						

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

Organization Definiti	on (ORG)		×
Organization:	ORG	Include IP/IP Range:	
Full Name:		Exclude IP/IP Range:	
Admin User:	admin	Agent User:	
Admin Password:	•••••	Agent Password:	
Confirm Admin Password:	•••••	Confirm Agent Password:	
Admin Email:	Required	Max Devices:	
Phone:		Address:	
Account Number:		Account Type:	
Support Tier:		Account Status:	
Support Team:		Account Manager:	
Collectors:	New Edit Delete		
	Collector Name Collector EPS	UpLoad Rate Limit	Valid Start Date Valid End Date
	Save	Cancel	

- 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.

Organization Definition (ORG) - Add Collector								
Name:	Required							
Guaranteed EPS:	Required							
Upload Rate Limit (Kbps):	Unlimited							
Start Time:	Unlimited							
End Time:	Unlimited							
	✓ Save							

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 use 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.

🌣 Setup	Cloud Health	Collector Healt	th									
🖨 Device Support	Show Processes	Tunnels	Action - Searc	:h	Columns 🕶				Lines: 1	Last update at 8	8:54:17 PM	ø
📑 Health	Organization	Name	IP Address	Status	Health	Up Time	CPU	Memory	Allocated EPS	Incoming EPS	Version	Col
🖪 License	Super	CO-ORG	172.30.57.4	4 up	Normal	3m 4s	65%	5%	200	0	6.1.0	100
🗘 Settings												
	4				_	_			_	_		•
	Close Panel	Search	Columns -	•					Lii	nes: 9 Last upda	te at 8:54:2	24 PM
	Process Name		Status Up Time	CPU	Physical	Memory Virtual /	Aemory S	haredStore)	SharedStore P	osition		
	phMonitorAgent		Up 29s	0%	575 MB	1116 MB						^
	phParser		Up 17s	0%	106 MB	1190 MB	9	9	0			
	phPerfMonitor		Up 17s	0%	79 MB	766 MB						
	phEventForward	er	Up 17s	0%	48 MB	547 MB						
	phDiscover		Up 17s	0%	53 MB	513 MB						

Install Manager

Starting with release 6.5.0, you can install FortiSIEM Manager to monitor and manage multiple FortiSIEM instances. An instance includes a Supervisor and optionally, Workers and Collectors. The FortiSIEM Manager needs to be installed on a separate Virtual Machine and requires a separate license. FortiSIEM Supervisors must be on 6.5.0 or later versions.

Follow the steps in All-in-one Install to install Manager. After any Supervisor, Workers, and Collectors are installed, you add the Supervisor instance to Manager, then Register the instance to Manager. See Register Instances to Manager.

Register Instances to Manager

To register your Supervisor instance with Manager, you will need to do two things in the following order.

- · First, add the instance to Manager
- Then register the instance itself to Manager

Note that Communication between FortiSIEM Manager and instances is via REST APIs over HTTP(S).

Adding Instance to Manager

You can add an instance to Manager by taking the following steps.

Note: Make sure to record the FortiSIEM Instance Name, Admin User and Admin Password, as this is needed when you register your instance.

- 1. Login to FortiSIEM Manager.
- 2. Navigate to ADMIN > Setup.
- 3. Click New.
- 4. In the FortiSIEM Instance field, enter the name of the Supervisor instance you wish to add.
- 5. In the Admin User field, enter the Account name you wish to use to access Manager.
- 6. In the Admin Password field, enter the Password that will be associated with the Admin User account.
- 7. In the Confirm Admin Password field, re-enter the Password.
- 8. (Optional) In the **Description** field, enter any information you wish to provide about the instance.
- 9. Click Save.

	🌲 INCIDENTS 🛢 CMDB 🔛 RESOURCES 🏟 ADMIN						•
🌣 Setup	FortiSIEM Instances						
Health	New Edit Delete Unregister Q (7/1)	2	н <	1/1	1	>	н
License	ID Instance Name Instance FQDN Admin User Registered Description						
S Content Update	FortiSIEM Instance Definition (sp56148)						
🕫 Settings	For tiSIEM Instance Name: sp56148						
	Admin User: admin						
	Admin Password:						
	Confirm Admin Password:						
	Description:						
	Save Cancel						

10. Repeat steps 1-9 to add any additional instances to Manager.

Now, follow the instructions in Register the Instance Itself to Manager for each instance.

Register the Instance Itself to Manager

To register your instance with Manager, take the following steps.

- 1. From your FortiSIEM Supervisor/Instance, navigate to **ADMIN > Setup > FortiSIEM Manager**, and take the following steps.
 - a. In the FortiSIEM Manager FQDN/IP field, enter the FortiSIEM Manager Fully Qualified Domain Name (FQDN) or IP address.
 - **b.** If the Supervisor is under a Supervisor Cluster environment, in the **FortiSIEM super cluster FQDN/IP** field, enter the Supervisor Cluster Fully Qualified Domain Name (FQDN) or IP address.
 - c. In the FortiSIEM Instance Name field, enter the instance name used when adding the instance to Manager.
 - d. In the Account field, enter the Admin User name used when adding the instance to Manager.
 - e. In the **Password** field, enter your password to be associated with the Admin User name.

- f. In the Confirm Password field, re-enter your password.
- g. Click Test to verify the configuration.
- h. Click Register.

A dialog box displaying "Registered successfully" should appear if everything is valid.

FortiSIEM	🙆 DASHBOARD 陆 ANALYTIC:	S 🌲 INCIDEN	ITS 🧧 CASES 🛢	CMDB 🔟 RESOURCE	S /≅ TASKS	😂 ADM	IN		
🌩 Setup	Storage - Organizations (Credentials Di	iscovery Pull Events	Monitor Performance	STM Main	tenance V	Vindows Agent	Linux Agent	FortiSIEM Manager
🗇 Device Support	FortiSIEM Manager FQDN/IP	:							
📑 Health	FortiSIEM Instance FQDN/IP	:	com						
🗷 License	FortiSIEM Instance Name	: DRSetup							
S Content Update	Account	:: admin							
🗘 Settings	Password								
	Confirm Password Registered								
		Test Regist	ter Delete						

- i. Login to Manager, and navigate to any one of the following pages to verify registration.
 - **ADMIN > Setup** and check that the box is marked in the **Registered** column for your instance.
 - **ADMIN > Health**, look for your instance under FortiSIEM Instances.
 - **ADMIN > License**, look for your instance under FortiSIEM Instances.

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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