ExtremeCloud™ IQ - Site Engine, ExtremeControl®, and ExtremeAnalytics® Virtual Engine Installation Guide

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Engine Deployment

This chapter provides an overview of ExtremeCloud IQ - Site Engine, ExtremeControl, and ExtremeAnalytics virtual engine deployment requirements and provides instructions for deploying a virtual engine on a VMware® and Hyper-V server.

Deploying the Virtual Engine on a VMware ESX Server

Deployment Requirements

A virtual engine is a software image that runs on a virtual machine. The ExtremeCloud IQ - Site Engine, ExtremeControl, and ExtremeAnalytics virtual engines are packaged in the `.ova` file format defined by VMware and must be deployed on a VMware ESXi™ 6.0 server with a vSphere™ client, or on a VMware ESXi™ 6.5, 6.7, or 7.0 server using the web client.

For information about the different ExtremeCloud IQ - Site Engine, ExtremeControl, and ExtremeAnalytics virtual engine configurations, see the latest ExtremeCloud IQ - Site Engine Release Notes.

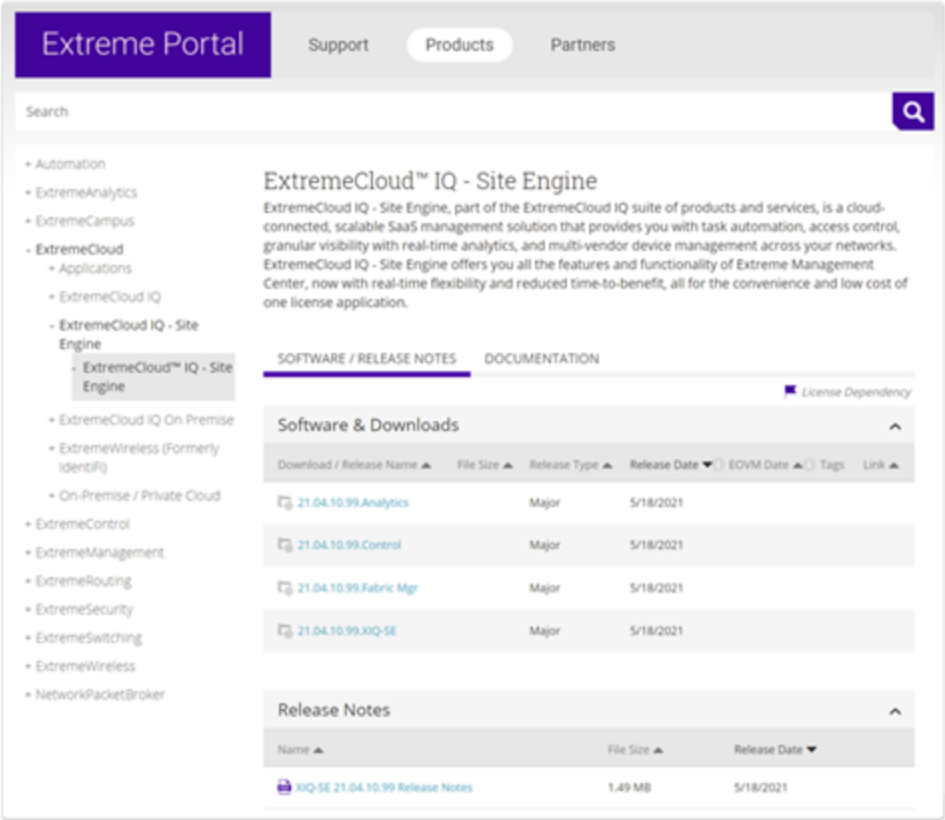
Deploying the Virtual Engine

Use the following steps to deploy an ExtremeCloud IQ - Site Engine, ExtremeControl, or ExtremeAnalytics virtual engine on a VMware ESX or ESXi server.

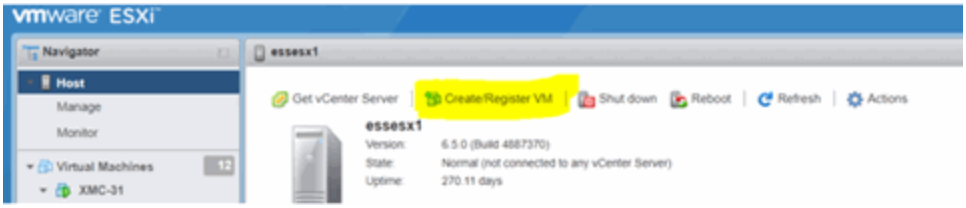
1. Download the ExtremeCloud IQ - Site Engine, ExtremeControl, or ExtremeAnalytics virtual engine software image to your local machine where the client is installed and running.

   To download an engine image:

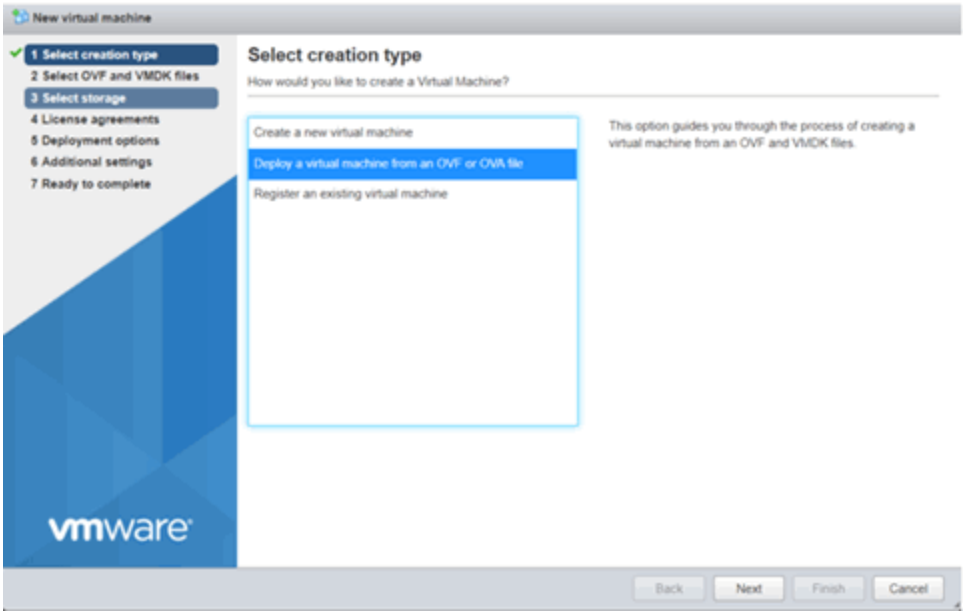
   1. Access the Extreme Portal at: https://extremeportal.force.com/.
   2. After entering your email address and password, you are on the Support page.
   3. Select the **Products** tab and select ExtremeManagement.
   4. Select **ExtremeCloud IQ - Site Engine** in the right-panel.
   5. Select a version.
   6. Download the ExtremeCloud IQ - Site Engine, ExtremeControl, or ExtremeAnalytics virtual engine (appliance) image from the appropriate section.



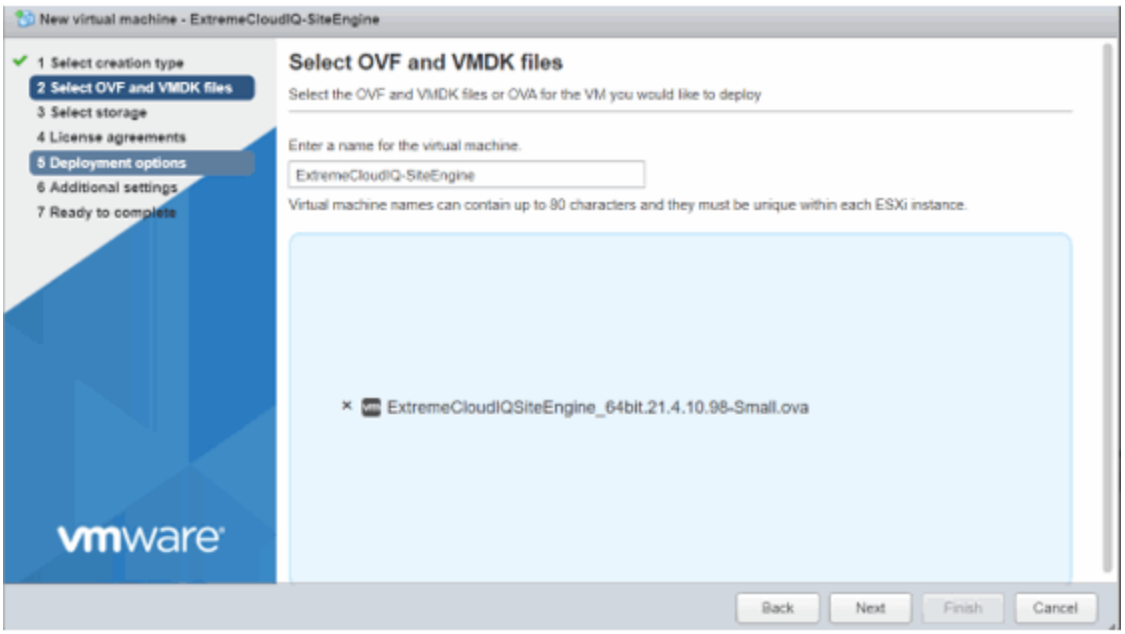
2. Open the VMWare software. From the **Host** menu, select **Create/Register VM.**



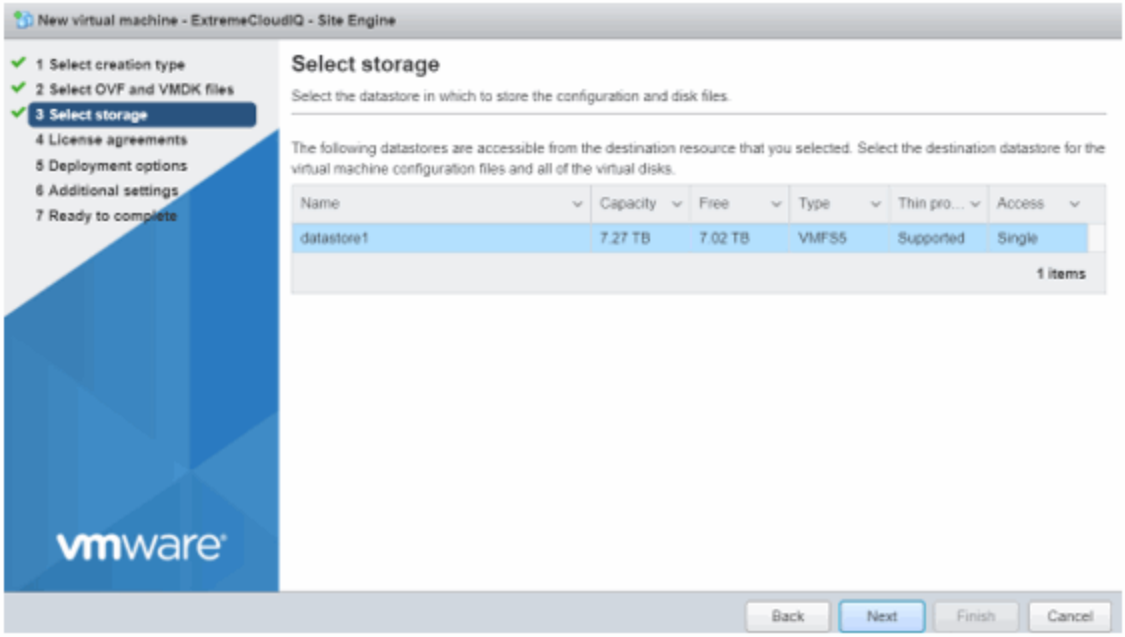
3. From the **Select creation type** panel, select **Deploy a virtual machine from an .OVF or .OVA file**. Select **Next**.



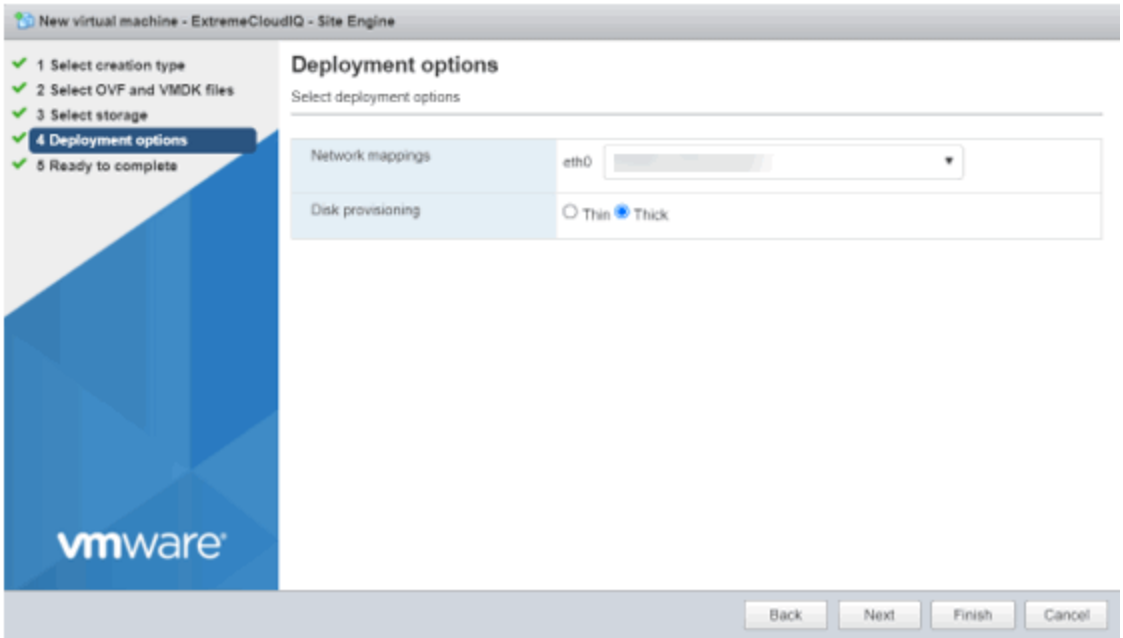
4. Enter the name of the virtual machine and select the .OVA file. Select **Next** to continue.



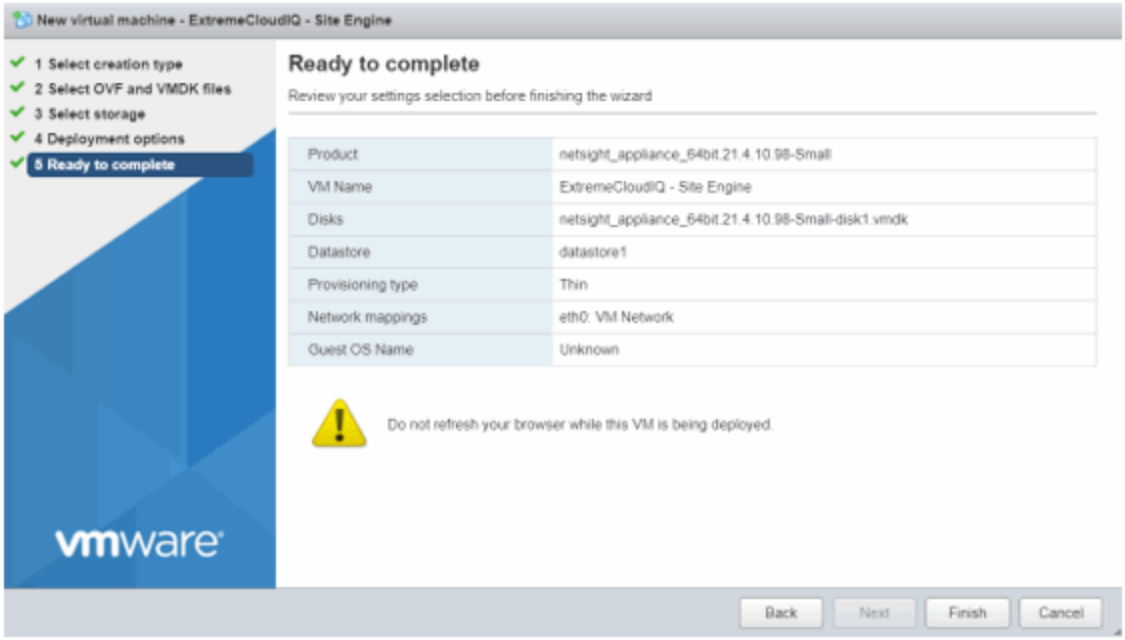
5. Select your datastore. Select **Next** to continue.



6. Select your deployment options and select **Next**.



7. Review and select **Finish** to start the deployment.



After the .OVA file has finished uploading and importing, you are now ready to begin configuring the engine.

Shutting Down the Engine

To properly shut down the virtual engine, enter the following command at the login prompt in the vSphere client **Console** tab:

```
poweroff
```

This shuts down the engine and updates the vSphere client with the new engine state.

Deploying the Virtual Engine on a Hyper-V Server

Deployment Requirements

A virtual engine is a software image that runs on a virtual machine. The , ExtremeCloud IQ - Site Engine, ExtremeControl, and ExtremeAnalytics virtual engines are packaged in the .ZIP file format and must be deployed on a Microsoft Hyper-V server.

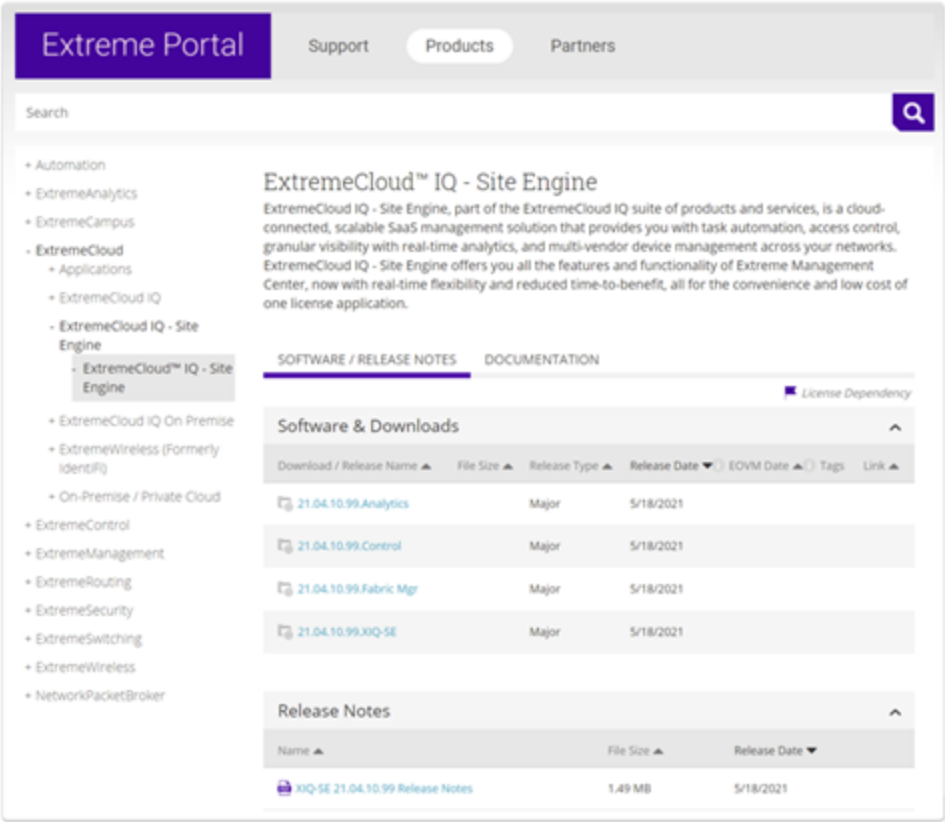
Deploying the Virtual Engine

Use the following steps to deploy an ExtremeCloud IQ - Site Engine, ExtremeControl, or ExtremeAnalytics virtual engine on a VMware ESX or ESXi server.

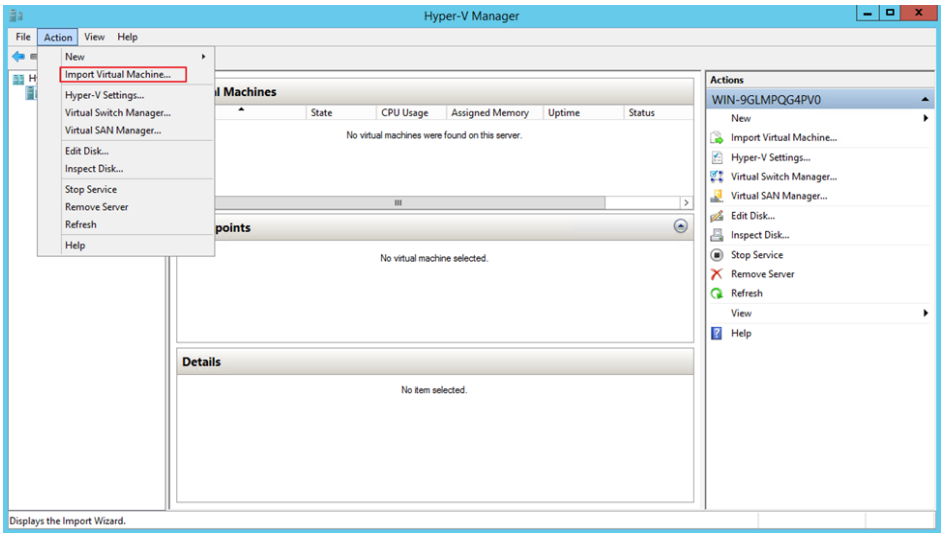
1. Download the ExtremeCloud IQ - Site Engine, ExtremeControl, or ExtremeAnalytics virtual engine software image to your local machine where the vSphere client is installed and running.

   To download an engine image:

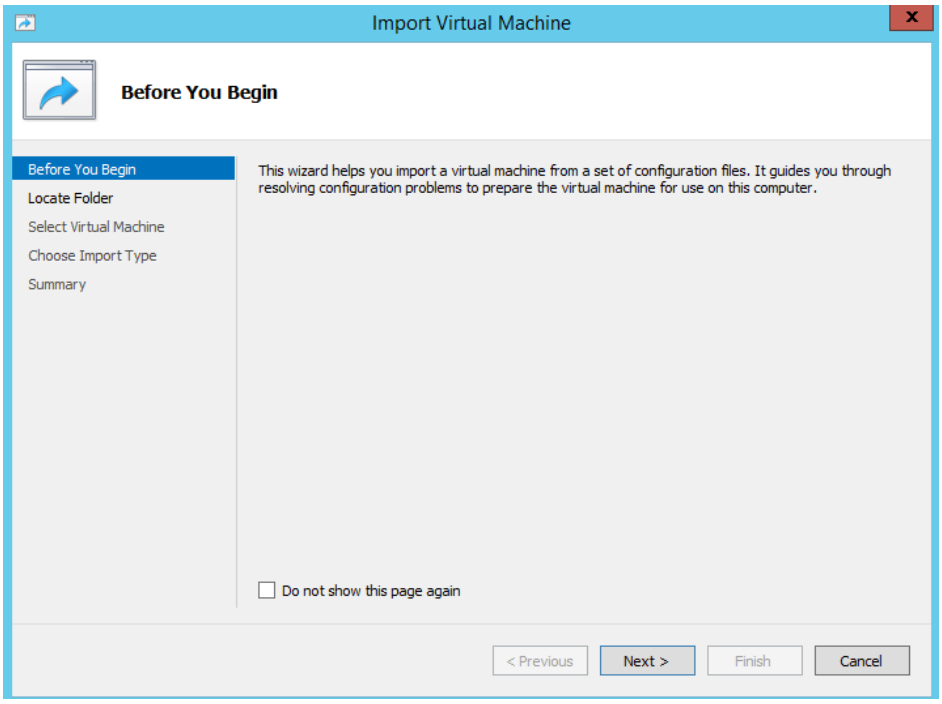
   1. Access the Extreme Portal at: https://extremeportal.force.com/.
   2. After entering your email address and password, you are on the Support page.
   3. Select the **Products** tab and select ExtremeCloud IQ - Site Engine.
   4. Select **ExtremeCloud IQ - Site Engine** in the right-panel.
   5. Select a version.
   6. Download the ExtremeCloud IQ - Site Engine, ExtremeControl, or ExtremeAnalytics virtual engine (appliance) image from the appropriate section.



2. Extract the virtual engine file to a local directory.
3. Open the Hyper-V Manager.
4. From the **Action** menu, select **Import Virtual Machine**.

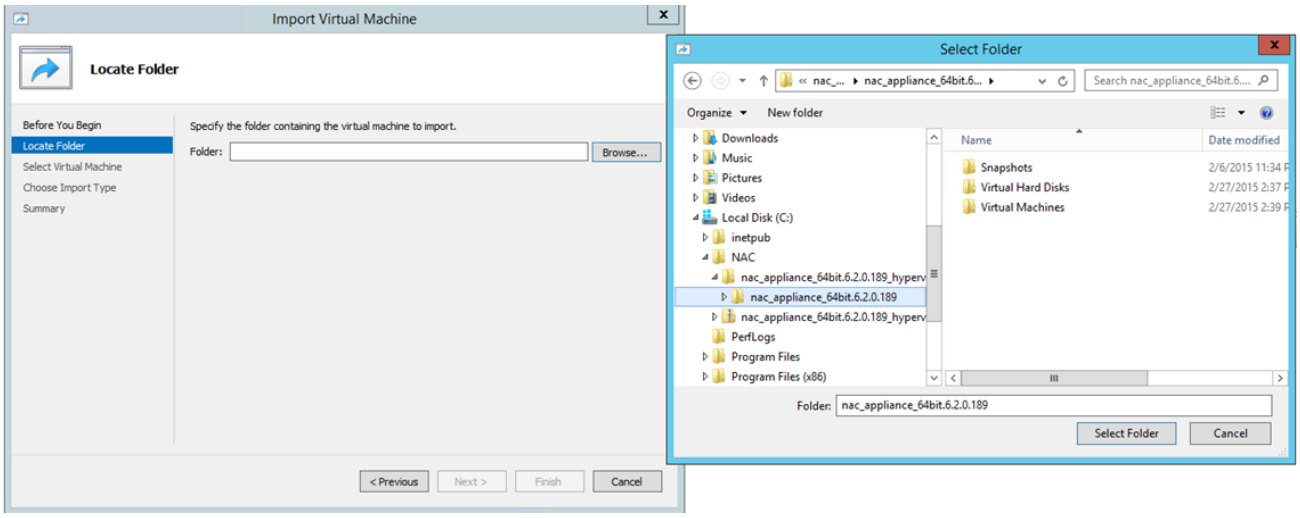


The **Import Virtual Machine** wizard opens to the Before You Begin panel.



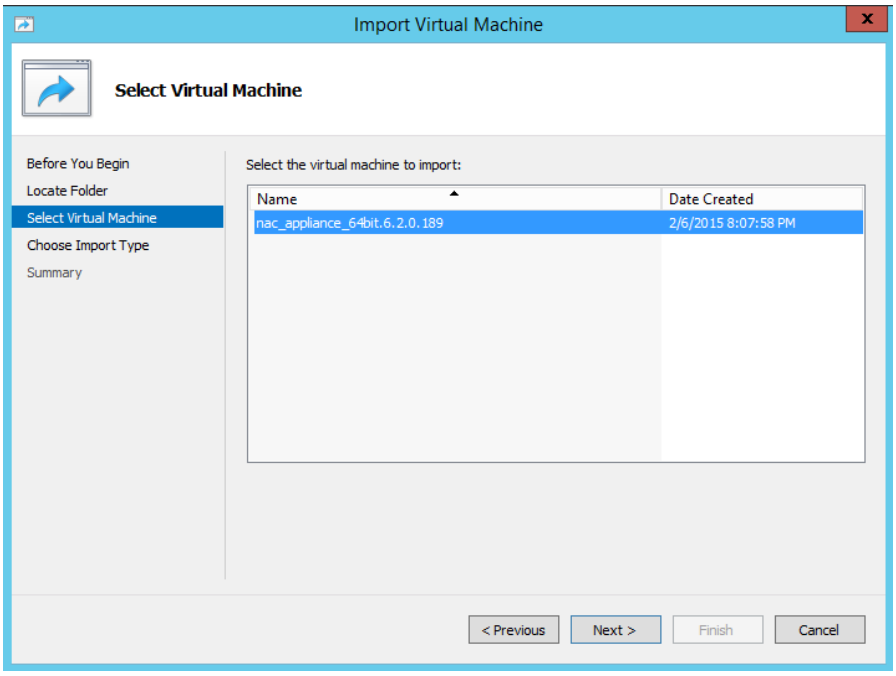
Select **Next.**

5. **The Locate Folder panel opens.**
6. Select the Browse button and navigate to the folder where you saved the engine image.
7. Select Select Folder, and then Next.

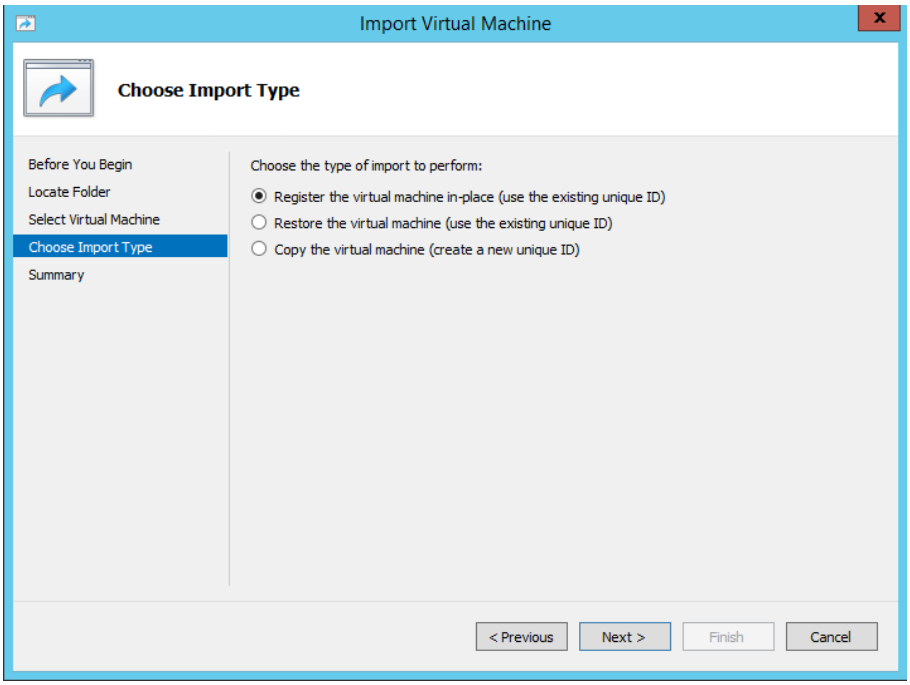


The Select Virtual Machine panel opens.

8. Select the virtual machine you are importing, and then select **Next**.

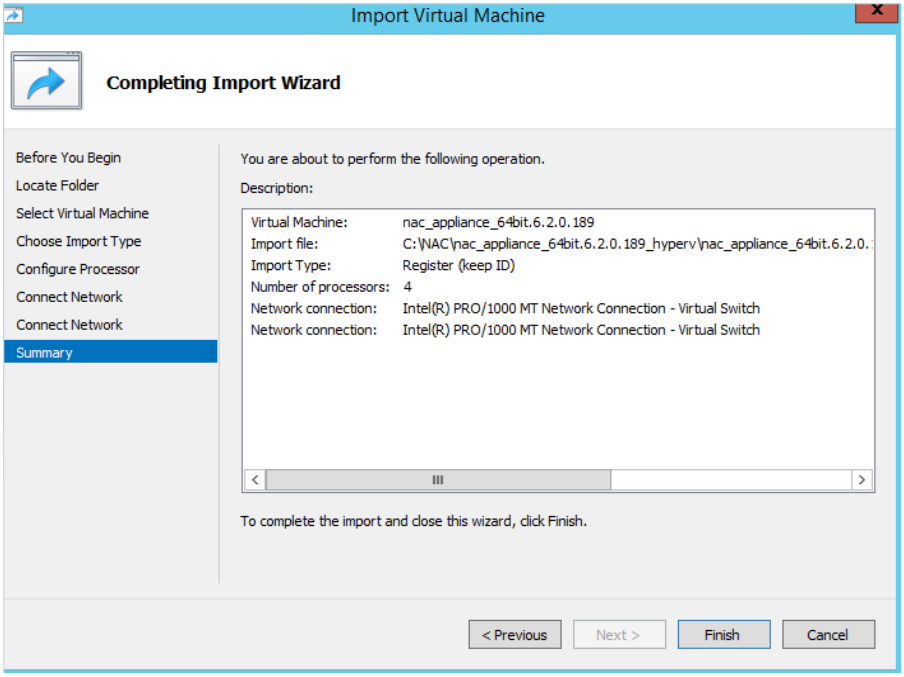


The Choose Import Type panel opens.



9. Select the radio button that corresponds to the appropriate type for your machine.
    - Register the virtual machine in-place (use the existing unique ID)—Select this option if your virtual machine files are saved on your virtual machine in the correct location.
    - Restore the virtual machine (use the existing unique ID)—Select this option if your virtual machine files are saved on a file share or removable drive and you want Hyper-V to move the files to the correct location.
    - Copy the virtual machine (create a new unique ID)—Select this option if you have a set of virtual files you want to import multiple times (e.g., if you are using them as a template for new virtual machines).
10. Select Next.

The Summary panel opens.



You are now ready to begin configuring the engine.

- If you are configuring an ExtremeCloud IQ - Site Engine virtual engine, see ExtremeCloud IQ - Site Engine Engine Configuration.
- If you are configuring an ExtremeControl virtual engine, see ExtremeControl Engine Configuration.
- If you are configuring on an ExtremeAnalytics virtual engine, see ExtremeAnalytics Engine Configuration.

ExtremeCloud IQ - Site Engine Engine Configuration

After the ExtremeCloud IQ - Site Engine virtual engine has been deployed on a VMware ESX or ESXi server, or a Hyper-V server using the instructions in Engine Deployment, you are ready to perform the initial engine configuration process described in this chapter.

This chapter also includes information on how to change your engine settings following your initial configuration, and how to upgrade or reinstall the engine software.

Pre-Configuration Tasks

Ensure that you have the following information prior to executing any of the procedures in this chapter:

- Engine hostname, IP address, and netmask
- Default Gateway IP address
- Name Server IP address and domain name
- NIS (Network Information Services) Server IP address *(optional)*
- Network Time Protocol (NTP) server IP address

ExtremeCloud IQ - Site Engine And ExtremeAnalytics Licensing

If you are an existing Extreme Management Center customer, contact your representative to have your Extreme Management Center license migrated to an ExtremeCloud IQ - Site Engine license. The ExtremeCloud IQ - Site Engine license also includes licensing for ExtremeAnalytics.

NOTES:

- ExtremeCloud IQ - Site Engine is a subscription-based -only licensing model.
- ExtremeCloud IQ - Site Engine is not compatible with ExtremeCloud IQ Connect level account. Either the Pilot or Navigator level is mandatory.

You can view ExtremeCloud IQ and ExtremeCloud IQ - Site Engine license information by accessing Administration > Licenses.

There are three tiers of licenses for ExtremeCloud IQ - Site Engine and devices:

- Pilot - Extreme devices
- Navigator - 3rd party devices
- No License - Status-Only devices

As you begin to onboard ExtremeCloud IQ - Site Engine and your devices, ExtremeCloud IQ will determine if you meet or exceed the license limits for each license type.

NOTE: Devices that do not have serial numbers or MAC addresses in Extreme Management Center must be Rediscovered after you upgrade to ExtremeCloud IQ - Site Engine before they can be onboarded to ExtremeCloud IQ.

For the first 90 days after ExtremeCloud IQ - Site Engine is released, license usage will not be enforced for devices onboarded to ExtremeCloud IQ. When ExtremeCloud IQ starts evaluating license usage, if your number of devices exceeds your licenses available, ExtremeCloud IQ - Site Engine transitions to a license violation state and your access to ExtremeCloud IQ - Site Engine features and functionality is locked. To resolve the license shortage you need to access the Extreme Networks portal or ExtremeCloud IQ to evaluate the quantities of available Pilot and Navigator licenses versus the number of licenses required by ExtremeCloud IQ - Site Engine.

Licensing for Devices

When ExtremeCloud IQ - Site Engine has been onboarded, it starts sending requests to add the devices from its database to ExtremeCloud IQ.

As devices are added and discovered in ExtremeCloud IQ - Site Engine, they are onboarded to ExtremeCloud IQ, with a request for a license of the appropriate tier (Navigator, Pilot or No License) that each device will require.

Devices can be marked as Unmanaged in ExtremeCloud IQ, which means they are not using a license and available features are very limited.

The following grid details the type of license required by each device and engine type:

Device Type	License Tier Type	Number of Licenses Per Device
Extreme-supported Device (Includes VOSS/Fabric Engine, SLX, Extreme Access, VDX, Fabric Manager, Unified Switching VOSS/Fabric Engine, Unified Switching EXOS/Switch Engine, Summit Series, ERS Series, 200 Series, 700 Series, A Series, B Series, C Series, ICX Series, Security Appliances, MLXe Series)	Pilot	1
Chassis	Pilot	1
ExtremeControlengine	Pilot	1

ExtremeAnalyticsengine	Pilot	1
ExtremeCloud IQ - Site Engine	Pilot	1
Extreme Management Center	Pilot	1
vSensor	Pilot	1
All Other Devices (Includes Non-Extreme Device)	Navigator	1
Devices with Ping-Only profile	No License	0
Devices Added with No Access Profile	No License (These are not onboarded to ExtremeCloud IQ)	0
Status-Only Devices	No License (These are not onboarded to ExtremeCloud IQ)	0

NOTE: For HiveOS APs, a Pilot license is required, but currently not enforced in ExtremeCloud IQ - Site Engine Version 21.04.10. These are not onboarded to ExtremeCloud IQ through ExtremeCloud IQ - Site Engine.

License Limits and Violations

For each request to add a device to ExtremeCloud IQ - Site Engine, ExtremeCloud IQ determines if there are enough licenses of that type available.

As a result, one of the following actions happens:

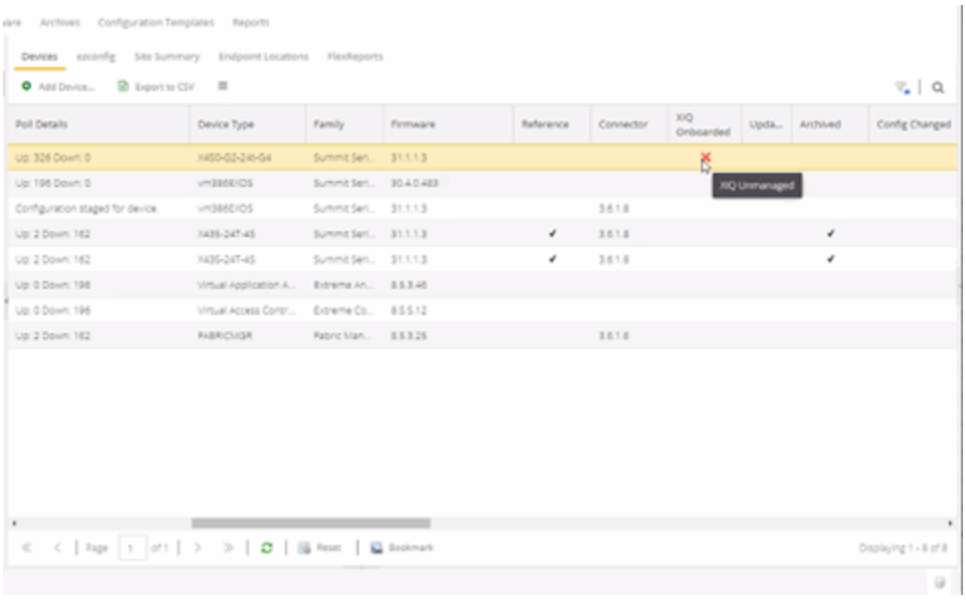
- If there are enough licenses, device onboarding is successful.
- If there are not enough Navigator licenses, a Pilot license is used instead.
- If there are not enough Pilot licenses, the request is considered a license violation.

To correct a license limit violation, you must acquire more licenses (and, when the updated license is sent to ExtremeCloud IQ, it is used by ExtremeCloud IQ - Site Engine).

Devices Marked as Unmanaged

When devices are marked as Unmanaged in ExtremeCloud IQ, they are also Unmanaged in ExtremeCloud IQ - Site Engine.

Onboarded Unmanaged devices are indicated in the XIQ Onboarded column of the Network > Site > Device table by a red X.



For more details on the **Network > Site > Device** table, visit [Onboarding Unmanaged Devices](#).

[Logging into ExtremeCloud IQ - Site Engine](#)

Configuring the ExtremeCloud IQ - Site Engine Engine

To configure the virtual engine to run the ExtremeCloud IQ - Site Engine applications:

1. In the **Console** tab of the vSphere client, login as root with no password, and then press **[Enter]**. **The following screen displays.**

```
================================================================================
Extreme Networks, Inc. - ExtremeCloud IQ - Site Engine - Welcome to the Site Engine Setup
================================================================================
Please enter the information as it is requested to continue with
the configuration.  Typically a default value is displayed in brackets.
Pressing the [enter] key without entering a new value will use the
bracketed value and proceed to the next item.

If a default value cannot be provided, the prompt will indicate that the item
is either (Required) or (Optional). The [enter] key may be pressed without
entering data for (Optional) items. A value must be entered for (Required) items.

At the end of the setup process, the existing settings will be displayed
and opportunity will be provided to correct any errors.
================================================================================

Press [enter] to begin setup or CTRL-C to exit:
```

2. Press [Enter] to begin the setup.
   The Root Password Configuration screen displays:

```
================================================================================
Root Password Configuration
================================================================================
The root password is currently set for this appliance.
================================================================================

Would you like to set a root password (y/n) [y]?
```

   Note: You must set a new root password. The root password will be used to access the CLI of the ExtremeCloud IQ - Site Engine VM.

3. Press [Enter] to set a new root password. Enter the new password as prompted.

```
================================================================================
Root Password Configuration
================================================================================
The root password is currently set for this appliance.
================================================================================

Would you like to set a root password (y/n) [y]?


Enter new UNIX password:
Retype new UNIX password:
```

   After you create the new root password, a screen displays where you can specify a user other than root to run the ExtremeCloud IQ - Site Engine server, if desired. This user becomes the admin user for the server. (Use the root user account when performing upgrades and accessing CLI).

```
================================================================================
Select the user to run the server as
================================================================================
Do you want to run the Site Engine Server as the root user? (y/n) [y] _
```

4. Enter y to use the root user. Accept your selection.
   Enter n to either use the "netsight" user or to specify a different user. Re-enter the password and then accept your selection.

```
==============================================================================
Select the user to run the server as
==============================================================================
Do you want to run the Site Engine Server as the root user? (y/n) [y] n
Enter user to run the Site Engine Server as [netsight]:

User does not exist, we need to create it.

New password for user netsight:
Re-enter new password:
```

5. In the Suite Network Configuration screen, enter the requested configuration information for each line and press [Enter].
   Enter the IP address of the name server. If you are using a name server, you must enter a domain name for the engine (appliance). If you are using an NIS server to authenticate users logging into the engine, make sure the NIS domain name is valid or users will not be able to log in to the ExtremeCloud IQ - Site Engine applications.

```
==============================================================================
ExtremeCloud IQ - Site Engine Network Configuration
==============================================================================
Enter the hostname for the appliance (Required): xiqse

Enter the IP address for xiqse [

Enter the IP netmask [          ]:

Enter the gateway address [          ]:

Enter the IP address of the name server (Required):

Enter the IP address of an alternate name server (Optional):

Enter the domain name for xiqse (Required): extremenetworks.com

Do you want to use NIS (y/n) [n]? y

Enter the IP address of the NIS server :

Enter the NIS domain name (Required): extremenetworks.com_
```

6. In the Confirm Network Settings screen, you can accept the current configuration or modify the settings.

```
==============================================================================
Confirm Network Settings
==============================================================================
These are the settings you have entered. Enter 0 or any key other than a
valid selection to continue. If you need to make a change, enter the
appropriate number now or run the /usr/postinstall/dnetconfig script at a
later time.
==============================================================================

0. Accept settings and continue
1. Hostname:            xiqse
2. IP address:
3. Netmask:
4. Gateway:
5. Nameserver:
6. Domain name:         extremenetworks.com
7. NIS Server/Domain:   /extremenetworks.com

Enter selection [0]:_
```

7. In the SNMP Configuration screen, enter the requested information for each line and press [Enter].

```
==============================================================================
SNMP Configuration
==============================================================================
The following information will be used to configure SNMP management of this
device.  The SNMP information entered here must be used to contact this device
with remote management applications such as NetSight Console.
==============================================================================

Please enter the SNMP user name [snmpuser]:

Please enter the SNMP authentication protocol - MD5 or SHA [MD5]:

Please enter the SNMP authentication credential [snmpauthcred]:

Please enter the SNMP privacy protocol - DES or AES [DES]:

Please enter the SNMP privacy credential [snmpprivcred]: _
```

8. In the SNMP Configuration summary screen, enter 0 to accept the settings.

```
==============================================================================
SNMP Configuration
==============================================================================
These are the current SNMP V3 settings.  To accept them and complete
SNMP configuration, enter 0 or any key other than the selection choices.
If you need to make a change, enter the appropriate number now or
run the /usr/postinstall/snmpconfig script at a later time.

0. Accept the current settings
1. SNMP User:                    snmpuser
2. SNMP Authentication Protocol: MD5
3. SNMP Authentication:          snmpauthcred
4. SNMP Privacy Protocol:        DES
5. SNMP Privacy:                 snmpprivcred
6. Modify all settings
==============================================================================

Enter selection [0]:
```

9. In the Configure Date and Time Settings screen, select whether you want to use an external Network Time Protocol (NTP) server. Enter y to use NTP, and enter your NTP server IP address(es). Enter n to configure the date and time manually and proceed to step 11.
   Note that your NTP server should be using the same NTP settings as those configured for your virtual engine (i.e., the same settings as the VMs that are hosted on the NTP server).

```
==============================================================================
Configure Date And Time Settings
==============================================================================
The engine date and time can be set manually or using an external
Network Time Protocol (NTP) server. It is strongly recommended that
NTP is used to configure the date and time to ensure accuracy of time
values for SNMP communications and logged events. Up to 5
server IP addresses may be entered if NTP is used.
==============================================================================

Do you want to use NTP (y/n) [y]?


Please enter a NTP Server IP Address (Required): 192.168.1.200

Would you like to add another server (y/n) [n]?
```

10. In the **NTP Servers validate selection** screen, enter **0** to accept the current settings and proceed to the Set Time Zone screen at step 13.

```
==============================================================================
NTP Servers
==============================================================================
These are the currently specified NTP servers:

[redacted]

Enter 0 or any key other than a valid selection to complete NTP configuration and continue.
If you need to make a change, enter the appropriate number from the
choices listed below.

0. Accept the current settings and continue
1. Restart NTP server selection
2. Set date and time manually
==============================================================================

Enter selection [0]:
```

11. If you answered no to using an NTP server to set date and time, set the date and time in the **Set Date and Time** screen.

```
================================================================================
Set Date And Time
================================================================================
The current system date and time is:    Fri 14 May 2021 01:01:58 PM EDT
Please enter the values for date and time as directed where input is expected in
the following format:

MM   - 2 digit month of year
DD   - 2 digit day of month
YYYY - 4 digit year
hh   - 2 digit hour of day using a 24 hour clock
mm   - 2 digit minute of hour
ss   - 2 digit seconds
================================================================================


Please enter the month [05]:

Please enter the day of the month [14]:

Please enter the year [2021]:

Please enter the hour of day [13]:

Please enter the minutes [04]:

Please enter the seconds [04]:
```

12. In the **Use UTC** screen, select whether you want the system clock to be set to use UTC.

```
================================================================================
Use UTC
================================================================================
The system clock can be set to use UTC. Specifying no for using UTC,
sets the hardware clock using localtime.
================================================================================

Do you want to use UTC (y/n) [n]?
```

13. In the **Set Time Zone** screen, type the number that corresponds to the appropriate time zone and press [Enter].

```
================================================================================
Set Time Zone
================================================================================
You will now be asked to enter the time zone information for this system.
Available time zones are stored in files in the /usr/share/zoneinfo directory.
Please select from one of the following example time zones:

1. US Eastern
2. US Central
3. US Mountain
4. US Pacific
5. Other - Shows a graphical list
================================================================================

Enter selection [1]:
```

14. In the **Modify Settings** screen, you can accept the current configuration or modify the settings.

```
==============================================================================
Modify Settings
==============================================================================
All of the information needed to complete the installation of the ExtremeCloud
IQ - Site Engine Appliance has been entered. Enter 0 or any key other than a
valid selection to continue.  If you need to make a change, enter the
appropriate number from the choices listed below.
==============================================================================

   0. Accept settings and continue
   1. Set the root user password
   2. Set user to run server as
   3. Set host name and network settings
   4. Set SNMP settings
   5. Set the system time
   6. Modify all settings

Enter selection [0]:_
```

The ExtremeCloud IQ - Site Engine application software is automatically installed. This could take a few minutes. When you see the following screen, configuration is complete.

```
==============================================================================
Extreme Networks, Inc. - ExtremeCloud IQ - Site Engine - Setup Complete
==============================================================================
Setup of the ExtremeCloud IQ - Site Engine is now complete. The appliance is
now operational and ready to accept remote connections.  Details of
the installation are located in the /var/log/install directory.
==============================================================================

root@xiqse:~$ _
```

Note: After you have completed the configuration, it is important to take a snapshot of your engine configuration to be used in the event an engine image recovery is required. For instructions on how to take a snapshot, see your vSphere client documentation.

Launching ExtremeCloud IQ - Site Engine

Now that you have configured the ExtremeCloud IQ - Site Engine virtual engine, you are ready to access ExtremeCloud IQ - Site Engine from a remote client machine.

Open a browser window on the remote client machine and enter the ExtremeCloud IQ - Site Engine Launch page URL in the following format:

`https://<servername>:8443/`

where *<servername>* is the ExtremeCloud IQ - Site Engine virtual engine IP address or hostname, and 8080 is the required port number. For example,
`https://10.20.30.40:8443/`
ExtremeCloud IQ - Site Engine login page opens.

Log in as root with the same password you defined in step 3 or as the user you specified in step 4.

This is because the ExtremeCloud IQ - Site Engine Server has a single pre-defined user, which is the user who performed the ExtremeCloud IQ - Site Engine installation. After the initial user has logged in, additional users (with usernames valid for Ubuntu) can log in.

Onboarding ExtremeCloud IQ - Site Engine

To access ExtremeCloud IQ - Site Engine, you must first complete the steps to onboard ExtremeCloud IQ - Site Engine to ExtremeCloud IQ.

There are two scenarios by which you can onboard ExtremeCloud IQ - Site Engine:

- After Upgrading to ExtremeCloud IQ - Site Engine from Extreme Management Center Versions 8.4.4 or 8.5.5.
- After Initial Installation of ExtremeCloud IQ - Site Engine

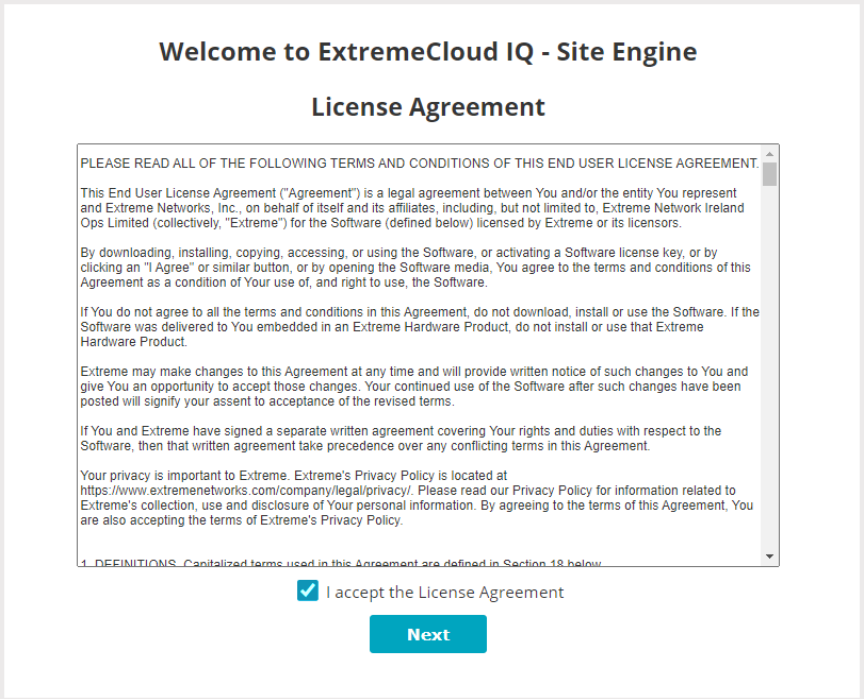
After Upgrading to ExtremeCloud IQ - Site Engine from Extreme Management Center Versions 8.4.4 or 8.5.5

When you upgrade from Extreme Management Center to ExtremeCloud IQ - Site Engine, if you used the softlaunch feature of Extreme Management Center in ExtremeCloud IQ, you need to remove Extreme Management Center from ExtremeCloud IQ before onboarding ExtremeCloud IQ - Site Engine.

After you upgrade your Extreme Management Center to ExtremeCloud IQ - Site Engine, you need to onboard ExtremeCloud IQ - Site Engine:

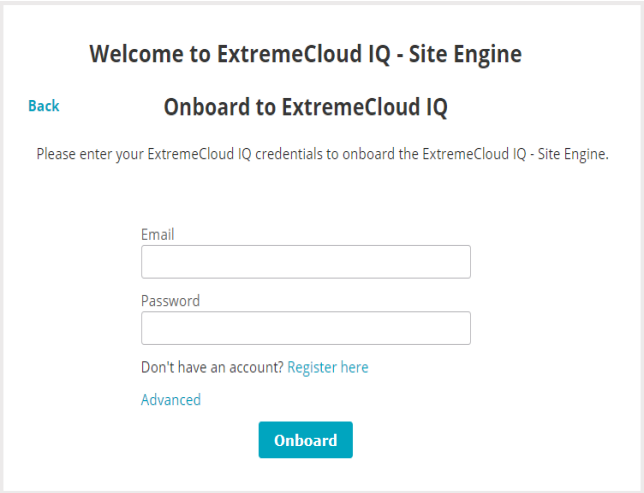
1. Log in to ExtremeCloud IQ - Site Engine. Enter your ExtremeCloud IQ - Site Engine username and password. Select **Login**.

2. Accept the License Agreement.



Select **Next**.

3. To onboard ExtremeCloud IQ - Site Engine to ExtremeCloud IQ, provide your ExtremeCloud IQ email address and password.



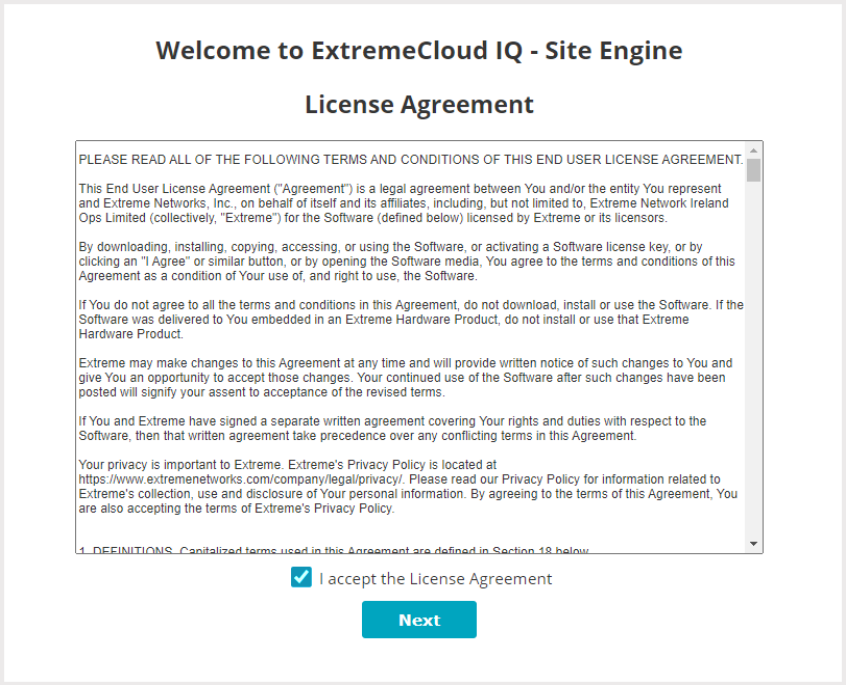
After ExtremeCloud IQ - Site Engine has successfully onboarded, you can now access ExtremeCloud IQ - Site Engine.

If your environment requires HTTP Proxy or other advanced settings, select the Advanced link. If you do not have an ExtremeCloud IQ account, select the Register Here link.

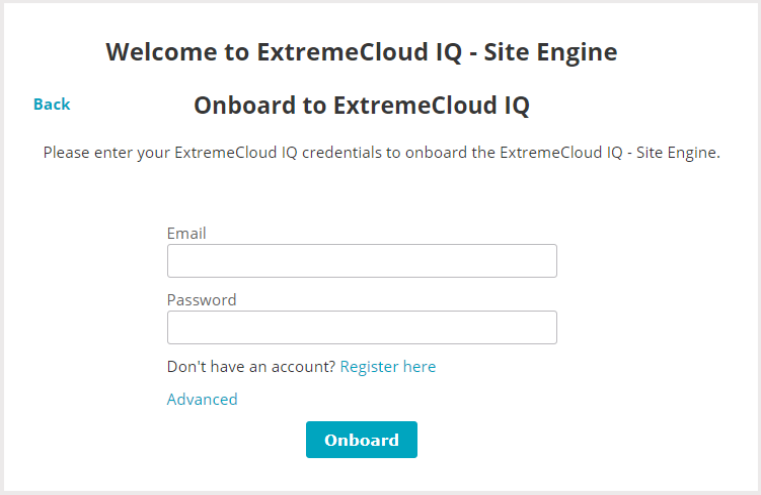
After Initial Installation of ExtremeCloud IQ - Site Engine

Complete the following steps to onboard ExtremeCloud IQ - Site Engine after you install ExtremeCloud IQ - Site Engine:

1. Accept the ExtremeCloud IQ - Site Engine License Agreement.



2. Enter your ExtremeCloud IQ email address and password. Select **Login.**



If your environment requires HTTP Proxy or other advanced settings, select the Advanced link. If you do not have an ExtremeCloud IQ account, select the Register Here link.

3. ExtremeCloud IQ retrieves the license information and sends it to ExtremeCloud IQ - Site Engine. ExtremeCloud IQ - Site Engine is onboarded to ExtremeCloud IQ.

   You can now access the ExtremeCloud IQ - Site Engine login page.

   Enter the Username and Password you specified during the ExtremeCloud IQ - Site Engine installation.

Onboarding Devices

When ExtremeCloud IQ - Site Engine has been onboarded, it can start sending requests to add the devices from its database to ExtremeCloud IQ.

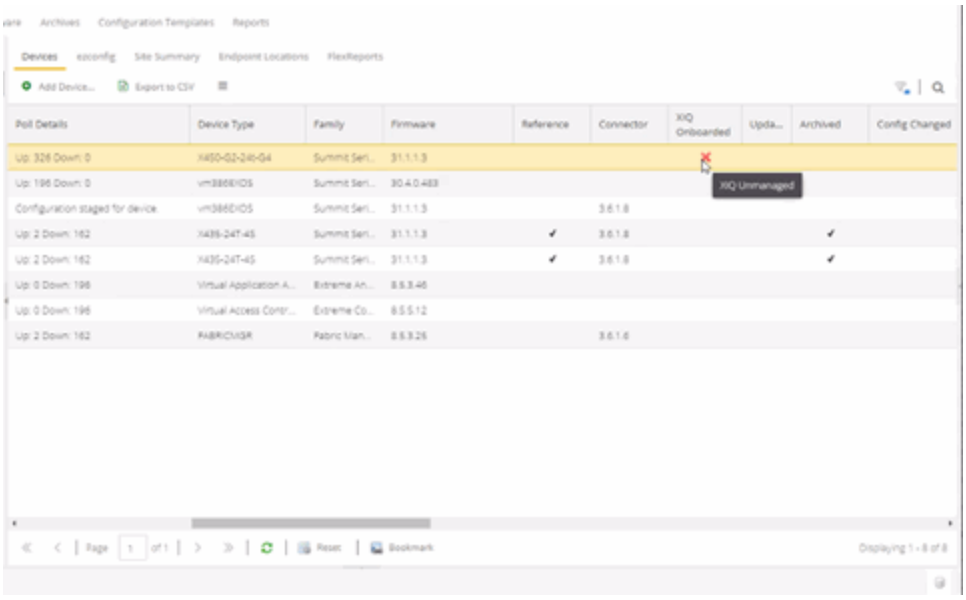
NOTES: Devices with IPv6 addresses in ExtremeCloud IQ - Site Engine will not be onboarded as locally-managed devices in ExtremeCloud IQ. Only devices with IPv4 addresses qualify.

As devices are added and discovered in ExtremeCloud IQ - Site Engine, they are onboarded to ExtremeCloud IQ, with a request for a license of the appropriate tier (Navigator, Pilot or No License) that each device will require.

View the ExtremeCloud IQ - Site Engine and ExtremeCloud IQ Onboarding Flowchart for a detailed chart on how devices are onboarded to ExtremeCloud IQ and managed by ExtremeCloud IQ - Site Engine.

XIQ Onboarded Status for Devices

After an attempt is made to onboard a device, the XIQ Onboarded column of the **Network > Site > Device** table indicates the status of the onboarding attempt.



- Black check mark - Indicates that the device is onboarded to ExtremeCloud IQ.

- Red X - Indicates the device is onboarded but Unmanaged, which means it is not using a license, it has read-only device-level support, and available features in ExtremeCloud IQ - Site Engine are limited. Other functionality, including Status Polling, Historical Device + Port Statistics Collection, Existing Scheduled Tasks, and Archives, are supported for devices with Unmanaged status, but these devices cannot be configured for new tasks or new archives.

NOTES: In ExtremeCloud IQ - Site Engine version 22.09.10, only use ExtremeCloud IQ to set an ExtremeCloud IQ - Site Engine onboarded device to Unmanaged as a temporary measure while you obtain more licenses.

If you mark a device as Unmanaged so it does not trigger a license limit violation, you can then access ExtremeCloud IQ - Site Engine and delete the device before the license violation occurs.

You can perform an enforce for an ExtremeControl engine with an Unmanaged status; however, if the device has an Unmanaged status, then the enforce does not reconfigure the device and changes are not written to the device.

When devices are marked as Unmanaged in ExtremeCloud IQ, they are also Unmanaged in ExtremeCloud IQ - Site Engine.

In addition, existing ExtremeAnalytics functionality for devices with an Unmanaged status is still supported, but only with existing configuration.

- Blank - Indicates the device is not successfully onboarded to ExtremeCloud IQ from the ExtremeCloud IQ - Site Engine because either it is already onboarded to ExtremeCloud IQ (either from another ExtremeCloud IQ - Site Engine or by using the IQ Agent to connect directly), or because ExtremeCloud

IQ - Site Engine lost its connection to ExtremeCloud IQ.

NOTE: If a device's status is Blank, it has limited features available in ExtremeCloud IQ - Site Engine because management of the device is owned by ExtremeCloud IQ.

- N/A - Indicates the device is not eligible to be onboarded to ExtremeCloud IQ because it does not have a valid serial number or MAC address, or Extreme does not yet offer onboarding support for the device.

NOTE: If ExtremeCloud IQ - Site Engine does not recognize a device's serial number or MAC address, right-click on the device and select Rediscover to attempt to discover the device's serial number or MAC address. After the device's serial number or MAC address is discovered, it can be onboarded to ExtremeCloud IQ during the next onboarding cycle.

.

Restoring a Database from a Windows Server to the Engine

This section describes several ExtremeCloud IQ - Site Engine configuration changes that are required if you are moving your installation from a Windows platform system to the ExtremeCloud IQ - Site Engine virtual engine. Perform these steps after restoring your database to the new engine. (For information on restoring a database, see the Server Information section in the *ExtremeCloud IQ - Site Engine Suite-Wide Tools User Guide*.)

Changing Console

Use the following instructions to change the location of syslog and trap information to the new location on the engine.

Changing Syslog Location

Change the Syslog Log Manager to point to the new location on the engine. This will enable the display of syslog information in the Syslog Event View tab.

1. From the Console menu bar, select Alarm/Event > Tools > Event View Manager.
2. Select on the Syslog entry under Available Log Managers, and select the Edit button.
   The Log Manager Parameters window opens.
3. Change the path in the Log Directory field to /var/log/messages.
4. Change the Pattern to Red Hat LINUX Syslog Pattern.
5. Select OK.

Changing Traps Location

Change the Traps Log Manager to point to the new location on the engine. This will enable the display of trap information in the Traps Event View tab.

1. From the Console menu bar, select Tools > Alarm/Event > Event View Manager.
2. Select the Traps entry under Available Log Managers, and select the Edit button.
   The Log Manager Parameters window opens.
3. Change the path in the Log Directory field to %logdir%/traps.
4. Select OK.

Changing Inventory Settings

If you are using Inventory Settings in ExtremeCloud IQ - Site Engine, you must change the Data Storage Directory path to point to the new location on the engine. The Data Storage Directory is where all Inventory data is stored, including capacity planning reports, configuration templates, archived configurations, and property files.

1. Select Administration > Options.
2. Expand the Inventory Manager options folder and select Directory Path in the Data Storage section.
3. Change the path to the correct new location.
   On a default installation, the path would b**e :** `/usr/local/Extreme_Networks/NetSight/appdata/InventoryMgr/`
4. Select OK.

Changing ExtremeCloud IQ - Site Engine Engine Settings

Use these steps if you need to change your ExtremeCloud IQ - Site Engine virtual engine settings following your initial engine configuration. Perform these steps in the vSphere client Console tab or login using an ssh session to ExtremeCloud IQ - Site Engine CLI..

Changing Basic Network Configuration

To change basic network configuration settings such as hostname and engine IP address, enter the following command at the login prompt in the Console tab:
`/usr/postinstall/dnetconfig`

This will start the network configuration script and enable you to make the required changes. You must reboot the engine for the new settings to take effect.

Changing SNMP Configuration

To change SNMP configuration settings such as system contact, system location, Trap Server, SNMP Trap Community String, SNMP User, SNMP Authentication, and SNMP Privacy

credentials, enter the following command at the login prompt in the Console tab:
`/usr/postinstall/snmpconfig`

This will start the SNMP configuration script and enable you to make the required changes.

Changing Date and Time Settings

To enable or disable NTP for engine date and time, or to manually set the date and time on the engine, enter the following command at the login prompt in the Console tab:
`/usr/postinstall/dateconfig`

This will start the date and time configuration script and enable you to change the settings.

Upgrading ExtremeCloud IQ - Site Engine Engine Software

Upgrades to the ExtremeCloud IQ - Site Engine engine software are available on the ExtremeCloud IQ - Site Engine web page.

Prior to performing an upgrade, you can create a snapshot of the engine that you can revert to in the event an upgrade fails. Refer to the vSphere client documentation for instructions on creating a snapshot.

1. On a system with an internet connection, go to the ExtremeCloud IQ - Site Engine web page: http://extranet.extremenetworks.com/downloads/pages/NMS.aspx.
2. Enter your email address and password.
   You will be on the ExtremeCloud IQ - Site Engine page.
3. Select the Software tab and select a version of ExtremeCloud IQ - Site Engine.
4. Download the ExtremeCloud IQ - Site Engine virtual engine image from the ExtremeCloud IQ - Site Engine Virtual Appliance (engine) section.
5. Use FTP, SCP, or a shared mount point, to copy the file to the ExtremeCloud IQ - Site Engine virtual engine.
6. SSH to the engine.
7. Cd to the directory where you downloaded the upgrade file.
8. Change the permissions on the upgrade file by entering the following command:
   `chmod + x ./ExtremeCloudIQSiteEngine_<version>_64bit_install.bin`
9. Run the install program by entering the following command:
   `./ExtremeCloudIQSiteEngine_<version>_64bit_install.bin`
   The upgrade automatically begins.

The ExtremeCloud IQ - Site Engine Server are restarted automatically when the upgrade is complete. Because your ExtremeCloud IQ - Site Engine engine settings were migrated, you are not required to perform any configuration on the engine following the upgrade.

Reinstalling ExtremeCloud IQ - Site Engine Appliance Software

In the event that a software reinstall becomes necessary, restore an engine snapshot that you previously made using the vSphere client. Refer to the vSphere client documentation for instructions on restoring a snapshot.

If you do not have an engine snapshot to restore, you must re-deploy and reconfigure the ExtremeCloud IQ - Site Engine virtual engine following the instructions in Engine Deployment and this chapter.

Note: Be aware that a reinstall procedure reformats the hard drive, reinstalls all the ExtremeCloud IQ - Site Engine engine software, the operating system, and all related Linux packages. We recommend backing up your hard drive before reinstalling.

ExtremeControl Engine Configuration

After the ExtremeControl virtual engine has been deployed on a VMware ESX or ESXi server, or a Hyper-V server using the instructions in Engine Deployment, you are ready to perform the initial engine configuration process described in this chapter.

This chapter also includes information on how to change your engine settings following your initial configuration, and how to upgrade or reinstall the engine software.

Pre-Configuration Tasks

Ensure that you have the following information prior to executing any of the procedures in this chapter:

- Engine Hostname, IP address, and netmask
- Default Gateway IP address
- ExtremeCloud IQ - Site Engine Server IP address
- Name Server IP address and domain name
- Network Time Protocol (NTP) server IP address

Licensing for ExtremeControl

The licensing details for ExtremeControl vary depending on whether ExtremeCloud IQ - Site Engine is onboarded after upgrading from Extreme Management Center or if it is initially installed.

After Upgrading From Extreme Management Center versions 8.4.4 or 8.5.5

If you are upgrading from Extreme Management Center versions 8.4.4 or 8.5.5 to ExtremeCloud IQ - Site Engine version 22.09.10, the licensing and capabilities of ExtremeControl does not change. The following are included in the licenses:

- NMS-ADV License includes 500 Access Control End-Systems and 50 Guest and IoT Manager (GIM) licenses.
- NMS-xx License includes 250 Access Control End-Systems and 25 GIM licenses.

If you had an NMS-xx License with Extreme Management Center, you can upgrade to an NMS-ADV License on the Extreme Portal after you onboard ExtremeCloud IQ - Site Engine.

NOTE: Air gapped mode (where ExtremeCloud IQ - Site Engine is not connected to ExtremeCloud IQ) is not supported for ExtremeCloud IQ - Site Engine version 21.04.10.

Upon Initial Installation

If you are completing an initial install of ExtremeCloud IQ - Site Engine, there is no end-system license included. The evaluation license can be generated on the Extreme Portal which includes unlimited end-systems and Guest and IoT Manager (GIM) licenses.

Configuring the ExtremeControl Engine

To configure the virtual engine to run the ExtremeControl software:

1. In the Console tab of the vSphere client, login as root with no password and press [Enter].

   The following screens display:

```
==================================================================
Welcome to Extreme Networks Access Control Engine 21.4.10.xx
controlengine login: root
==================================================================
Extreme Networks Access Control Engine 21.4.10.xx Configuration

Press CTRL-C to skip configuration for now
==================================================================
Now extracting the Access Control Engine. This may take a few moments...



==================================================================
Welcome to the ExtremeControl Engine Setup
==================================================================
Please enter the information as it is requested to continue with the configuration.
Typically a default value is displayed in brackets. Pressing the [enter] key without
entering a new value will use the bracketed value and proceed to the next item.
If a default value cannot be provided, the prompt will indicate that the item is either
(Required) or (Optional). The [enter] key may be pressed without entering data for
(Optional) items. A value must be entered for (Required) items.
At the end of the setup process, the existing settings will be displayed and opportunity
will be provided to correct any errors.
==================================================================
Press [enter] to begin setup or CTRL-C to exit:
```

2. Press [Enter] to begin the setup.
   The **Root Password Configuration** screen displays:

```
==================================================================
Root Password Configuration
==================================================================
```

```
There is currently no password set in the system administrator account (root). It is
recommended that you set one that is active the first time the machine is rebooted.
==================================================================
Would you like to set a root password (y/n) [y]?
```

3. Press [Enter] to set a new root password. Enter the new password as prompted.

```
Enter new UNIX password:
Retype new UNIX password:
Password updated successfully.
```

4. In the ExtremeControl engine Configuration screen, enter the requested configuration information for each line and press [Enter].

```
==================================================================
ExtremeControl Configuration
==================================================================
Enter the hostname for the appliance [nacappliance]:
Enter the IP address for <hostname> (Required):
Enter the IP netmask [255.255.255.0]:
Enter the gateway address [192.168.2.1]:
Enter the IP address of the name server (Optional):
Enter the domain name for <hostname> (Optional):
Enter the IP address of the   Server (Required):
```

5. In the SNMP Configuration screen, enter the requested information for each line and press [Enter].

```
==================================================================
SNMP Configuration
==================================================================
The following information will be used to configure SNMP management of this device.
The SNMP information entered here must be used to contact this device with remote
management applications such as ExtremeCloud IQ - Site Engine Console.
==================================================================
Please enter the SNMP user name [snmpuser]:
Please enter the SNMP authentication protocol - MD5 or SHA [MD5]:
Please enter the SNMP authentication credential [snmpauthcred]:
Please enter the SNMP privacy protocol - DES or AES [DES]:
Please enter the SNMP privacy credential [snmpprivcred]:
```

6. In the Configure Date and Time Settings screen, select whether you want to use an external Network Time Protocol (NTP) server. Enter y to use NTP, and enter your NTP server IP address(es). Enter n to configure the date and time manually and proceed to step 8.

```
==================================================================
Configure Date And Time Settings
==================================================================
The appliance date and time can be set manually or using an external Network Time
Protocol (NTP) server. It is strongly recommended that NTP is used to configure the
```

```
date and time to ensure accuracy of time values for SNMP communications and logged
events. Up to 5 server IP addresses may be entered if NTP is used.
==================================================================
Do you want to use NTP (y/n) [y]? y
Please enter a NTP Server IP Address (Required): 144.131.10.120
Would you like to add another server (y/n) [n]? y
Please enter a NTP Server IP Address (Required): 144.131.10.121
Would you like to add another server (y/n) [n]? n
```

7. In the NTP Servers validate selection screen, enter 0 to accept the current settings and proceed to the Set Time Zone screen at step 10.

```
==================================================================
NTP Servers
==================================================================
These are the currently specified NTP servers. Enter 0 or any key other than a valid
selection to complete NTP configuration and continue. If you need to make a change,
enter the appropriate number from the choices listed below.
144.131.10.120
144.131.10.121
0. Accept the current settings
1. Restart NTP server selection
2. Set date and time manually
==================================================================
Enter selection [0]: 0
```

8. If you answered no to using an NTP server to set date and time, set the date and time in the Set Date and Time screen.

```
==================================================================
Set Date And Time
==================================================================
The current system date and time is: Thu Apr 24 09:34:08 2018
Please enter the values for date and time as directed where input is expected in the
following format:
MM - 2 digit month of year
DD - 2 digit day of month
YYYY - 4 digit year
hh - 2 digit hour of day using a 24 hour clock mm - 2 digit minute of hour
ss - 2 digit seconds
==================================================================
Please enter the month [04]:
Please enter the day of the month [24]:
Please enter the year [2018]:
Please enter the hour of day [09]:
Please enter the minutes [34]:
Please enter the seconds [34]:
```

9. In the Use UTC screen, select whether you want the system clock to be set to use UTC.

```
==================================================================
Use UTC
==================================================================
The system clock can be set to use UTC. Specifying no for using UTC,
sets the hardware clock using local time.
==================================================================
Do you want to use UTC (y/n) [n]?
```

10. In the Set Time Zone screen, select the appropriate time zone and press [Enter].

```
==================================================================
Set Time Zone
==================================================================
You will now be asked to enter the time zone information for this system.
Available time zones are stored in files in the /usr/share/zoneinfo directory.
Please select from one of the following example time zones:
1. US Eastern
2. US Central
3. US Mountain
4. US Pacific
5. Other - Shows a graphical list
==================================================================
Enter selection [1]:
```

11. In the Current Appliance Configuration screen, review the current settings and press [Enter] to continue.

```
==================================================================
Access Control Configuration
==================================================================
Access Control Engine Configuration:
Host Info: <hostname>/<IP address>/<netmask>
Gateway/Name Server/Domain:   <gateway>/<dns server>/<domain>
SNMP User: snmpuser
SNMP Authentication Protocol: snmpauthcred
SNMP Authentication: snmpprivcred
SNMP Privacy Protocol:
SNMP Privacy:
ExtremeCloud IQ - Site Engine Server IP: <ECC server ip>
Press [enter] to continue:
```

In the Appliance Network Configuration Complete screen, you can accept the current configuration or modify the settings.

```
==================================================================
Appliance Network Configuration Complete
==================================================================
Configuration of the appliance network settings is now complete. Enter 0 or any key other
than a valid selection to continue. If you need to make a change, enter the appropriate
```

```
number from the choices listed below.
==================================================================
0. Accept the current settings
1. Edit NAC Appliance settings
2. Edit SNMP settings
3. Edit date and time
4. Modify all settings
==================================================================
Enter selection [0]:
```

When you see the following screen, configuration is complete.

```
==================================================================
Extreme Networks - ExtremeControl Appliance - Setup Complete
==================================================================
Setup of the NAC Appliance is now complete. Details of the appliance setup process are
located in the log files in the /var/log/install directory.
==================================================================
```

Note: After you have completed the configuration, it is important to take a snapshot of your engine configuration to be used in the event an engine image reinstall is required. For instructions on how to take a snapshot, see your vSphere client documentation.

You are now ready to use ExtremeCloud IQ - Site Engine to manage your ExtremeControl. If this is your initial commissioning of the engine, you can launch ExtremeCloud IQ - Site Engine and select Getting Started from the Help menu for information on using ExtremeCloud IQ - Site Engine to configure and manage your ExtremeControl.

If you have reinstalled your ExtremeControl software, use ExtremeCloud IQ - Site Engine to enforce the engine. Enforcing writes your ExtremeCloud IQ - Site Engine configuration information to the engine.

Note:

When you add the virtual engine to ExtremeCloud IQ - Site Engine, you will be asked to supply a virtual ExtremeControl engine license number. (When you purchased your engine, you received a Licensed Product Entitlement ID. This Entitlement ID allows you to generate a product license. Refer to the instructions included with the Entitlement ID that was sent to you.)

Unlicensed virtual ExtremeControl engines will appear with an orange arrow icon in ExtremeCloud IQ - Site Engine, and cannot be enforced. You can view the engine license status in the Administration > Diagnostics > Server > Server Licenses tab in ExtremeCloud IQ - Site Engine.

Changing ExtremeControl Engine Settings

This section provides instructions for changing your ExtremeControl engine settings following your initial engine configuration, should the need arise. Depending on the settings you want to change, you can use either the Control > Access Control tab of ExtremeCloud IQ - Site Engine or

the vSphere client **Console** tab to make the changes.

Using the Access Control tab

Use the **Access Control** tab to easily change Engine Settings including DNS, NTP, SSH, and SNMP configuration. You can also use the **Access Control** tab to change the engine hostname and default gateway, as well as configure static routes for advanced routing configuration.

Changing DNS, NTP, SSH, and SNMP Settings

Use the **Engine Settings** tab to change the following:

- DNS Configuration — Search domains and DNS servers
- NTP Configuration — Time zone and NTP servers
- SSH Configuration — Port number and authentication
- SNMP Configuration — SNMP credentials for the engine

To access the Engine Settings tab:

1. Open the Control > Access Control tab.
2. In the left-panel tree, expand the Configuration folder.
3. In the Configuration folder, expand the Global & Engine Settings folder.
4. In the Global & Engine Settings folder, expand the Engine Settings folder.
5. Select the desired engine (typically **Default** unless you have configured a custom engine setting).
6. In the right panel, select the Network Settings tab.

Changing Hostname, Gateway, and Static Routes

On the Control > **Access Control** tab, use the **Interfaces** window for an engine to change the engine hostname, default gateway, and static routes.

1. Expand the Engines folder in the left-panel tree.
2. Select the ExtremeControl engine
3. Select the right-panel **Details** tab.
4. In the Interface Summary section, select **Edit** to open the Interfaces window where you can change the engine hostname and default gateway.
5. Select **Save**.
6. In the Interface Summary section, select **Static Routes** to open the Static Route Configuration window where you can add or edit the static routes used for advanced routing configuration.

Using the vSphere Client Console Tab

Use the vSphere client **Console** tab to change the engine IP address, ExtremeCloud IQ - Site Engine server IP address, and web service credentials. If desired, you can also use the **Console** tab to change basic network settings such as engine hostname, SNMP configuration, and date and time settings, although you should use NAC Manager to make these changes, if possible (see Using the Access Control tab).

Changing the ExtremeCloud IQ - Site Engine Server IP Address

To change the IP address of the ExtremeCloud IQ - Site Engine server, enter the following command at the login prompt in the **Console** tab:

```
/opt/nac/configMgmtIP <IP address>
```

Enter the following command to start using the new ExtremeCloud IQ - Site Engine server:

```
nacctl restart
```

Changing Web Service Credentials

The Web Service credentials provide access to the ExtremeControl engine Administration web page and the web services interface for the ExtremeControl engine. Engines are shipped with a preconfigured default password.

If you have changed the credentials on the Access Control tab (in the **Engine Settings** window) and then install a new engine that uses the default password, you will not be able to monitor or enforce to the new engine until you change the password on the engine using the command below. The credentials you enter on the engine must match the credentials specified on the Access Control tab in the **Engine Settings** window.

To change Web Service credentials, enter the following command at the login prompt in the **Console** tab:

```
/opt/nac/configWebCredentials <username> <password>
```

Enter the following command to restart the engine:

```
nacctl restart
```

Changing the Engine IP Address and Basic Network Settings

To change the engine IP address, as well as basic network settings such as hostname and SNMP configuration (including system contact, system location, trap server, SNMP trap community string, SNMP user, SNMP authentication, and SNMP privacy credentials), enter the following command at the login prompt in the **Console** tab:

```
/usr/postinstall/nacconfig
```

This will start the network configuration script and enable you to make the desired changes.

Changing Date and Time Settings

To enable or disable NTP for engine date and time, or to manually set the date and time on the engine, enter the following command at the login prompt in the Console tab:
`/usr/postinstall/dateconfig`

This will start the date and time configuration script and enable you to change the settings.

Upgrading ExtremeControl Engine Software

Instructions for performing the software upgrade are available here.

Prior to performing an upgrade, you can create a snapshot of the engine that you can revert to in the event an upgrade fails. Refer to the vSphere client documentation for instructions on creating a snapshot.

Reinstalling ExtremeControl Engine Software

In the event that a software reinstall becomes necessary, restore an engine snapshot that you previously made using the vSphere client. Refer to the vSphere client documentation for instructions on restoring a snapshot.

If you do not have an engine snapshot to restore, you must re-deploy and reconfigure the ExtremeControl virtual engine following the instructions in Engine Deployment and this chapter.

Note: Be aware that a reinstall procedure reformats the hard drive, reinstalls all the ExtremeControl engine software, the operating system, and all related Linux packages.

ExtremeAnalytics Engine Configuration

After the ExtremeAnalytics virtual engine has been deployed on a VMware ESX or ESXi server, or a Hyper-V server using the instructions in Engine Deployment, you are ready to perform the initial engine configuration process described in this chapter.

This chapter also includes information on how to change your engine settings following your initial configuration, and how to upgrade or reinstall the engine software.

Pre-Configuration Tasks

Ensure that you have the following information prior to executing any of the procedures in this chapter:

- Engine hostname, IP address, and netmask
- Default Gateway IP address
- Name Server IP address and domain name
- NIS (Network Information Services) Server IP address *(optional)*
- Network Time Protocol (NTP) server IP address

ExtremeCloud IQ - Site Engine And ExtremeAnalytics Licensing

If you are an existing Extreme Management Center customer, contact your representative to have your Extreme Management Center license migrated to an ExtremeCloud IQ - Site Engine license. The ExtremeCloud IQ - Site Engine license also includes licensing for ExtremeAnalytics.

NOTES:

- ExtremeCloud IQ - Site Engine is a subscription-based -only licensing model.
- ExtremeCloud IQ - Site Engine is not compatible with ExtremeCloud IQ Connect level account. Either the Pilot or Navigator level is mandatory.

You can view ExtremeCloud IQ and ExtremeCloud IQ - Site Engine license information by accessing Administration > Licenses.

There are three tiers of licenses for ExtremeCloud IQ - Site Engine and devices:

- Pilot - Extreme devices
- Navigator - 3rd party devices
- No License - Status-Only devices

As you begin to onboard ExtremeCloud IQ - Site Engine and your devices, ExtremeCloud IQ will determine if you meet or exceed the license limits for each license type.

NOTE: Devices that do not have serial numbers or MAC addresses in Extreme Management Center must be Rediscovered after you upgrade to ExtremeCloud IQ - Site Engine before they can be onboarded to ExtremeCloud IQ.

For the first 90 days after ExtremeCloud IQ - Site Engine is released, license usage will not be enforced for devices onboarded to ExtremeCloud IQ. When ExtremeCloud IQ starts evaluating license usage, if your number of devices exceeds your licenses available, ExtremeCloud IQ - Site Engine transitions to a license violation state and your access to ExtremeCloud IQ - Site Engine features and functionality is locked. To resolve the license shortage you need to access the Extreme Networks portal or ExtremeCloud IQ to evaluate the quantities of available Pilot and Navigator licenses versus the number of licenses required by ExtremeCloud IQ - Site Engine.

Licensing for Devices

When ExtremeCloud IQ - Site Engine has been onboarded, it starts sending requests to add the devices from its database to ExtremeCloud IQ.

As devices are added and discovered in ExtremeCloud IQ - Site Engine, they are onboarded to ExtremeCloud IQ, with a request for a license of the appropriate tier (Navigator, Pilot or No License) that each device will require.

Devices can be marked as Unmanaged in ExtremeCloud IQ, which means they are not using a license and available features are very limited.

The following grid details the type of license required by each device and engine type:

Device Type	License Tier Type	Number of Licenses Per Device
Extreme-supported Device (Includes VOSS/Fabric Engine, SLX, Extreme Access, VDX, Fabric Manager, Unified Switching VOSS/Fabric Engine, Unified Switching EXOS/Switch Engine, Summit Series, ERS Series, 200 Series, 700 Series, A Series, B Series, C Series, ICX Series, Security Appliances, MLXe Series)	Pilot	1
Chassis	Pilot	1
ExtremeControlengine	Pilot	1
ExtremeAnalyticsengine	Pilot	1

ExtremeCloud IQ - Site Engine	Pilot	1
Extreme Management Center	Pilot	1
vSensor	Pilot	1
All Other Devices (Includes Non-Extreme Device)	Navigator	1
Devices with Ping-Only profile	No License	0
Devices Added with No Access Profile	No License (These are not onboarded to ExtremeCloud IQ)	0
Status-Only Devices	No License (These are not onboarded to ExtremeCloud IQ)	0

NOTE: For HiveOS APs, a Pilot license is required, but currently not enforced in ExtremeCloud IQ - Site Engine Version 21.04.10. These are not onboarded to ExtremeCloud IQ through ExtremeCloud IQ - Site Engine.

License Limits and Violations

For each request to add a device to ExtremeCloud IQ - Site Engine, ExtremeCloud IQ determines if there are enough licenses of that type available.

As a result, one of the following actions happens:

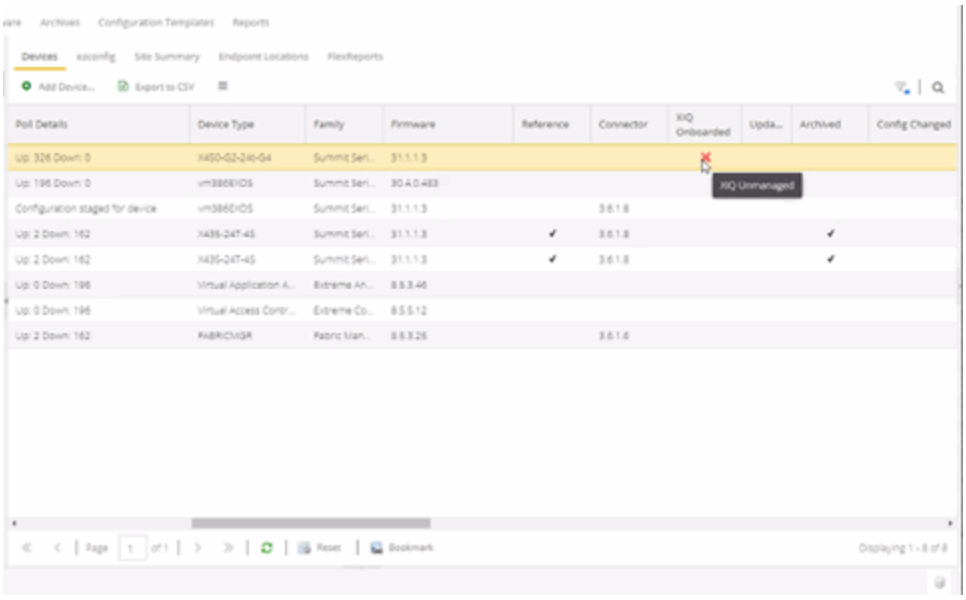
- If there are enough licenses, device onboarding is successful.
- If there are not enough Navigator licenses, a Pilot license is used instead.
- If there are not enough Pilot licenses, the request is considered a license violation.

To correct a license limit violation, you must acquire more licenses (and, when the updated license is sent to ExtremeCloud IQ, it is used by ExtremeCloud IQ - Site Engine).

Devices Marked as Unmanaged

When devices are marked as Unmanaged in ExtremeCloud IQ, they are also Unmanaged in ExtremeCloud IQ - Site Engine.

Onboarded Unmanaged devices are indicated in the XIQ Onboarded column of the **Network > Site > Device** table by a red **X**.



For more details on the **Network > Site > Device** table, visit [Onboarding Unmanaged Devices](#).

[Logging into ExtremeCloud IQ - Site Engine](#)

Configuring the ExtremeAnalytics Engine

To configure the virtual engine to run the ExtremeAnalytics application:

1. In the **Console** tab of the vSphere client, login as root with no password, and then press **[Enter]**.
   The following screen displays.

```
============================================================
Extreme Networks, Inc. - Application Analytics Engine -
Welcome to the Application Analytics Engine 21.4.10.xx Setup
============================================================
Please enter the information as it is requested to continue with the
configuration. Typically a default value is displayed in brackets.
Pressing the [enter] key without entering a new value will use the
bracketed value and proceed to the next item.
If a default value cannot be provided, the prompt will indicate that the
item is either (Required) or (Optional). The [enter] key may be pressed
without
entering data for (Optional) items. A value must be entered for
(Required) items.
At the end of the setup process, the existing settings will be displayed
and opportunity will be provided to correct any errors.
============================================================
Press [enter] to begin setup or CTRL-C to exit:
```

2. Press [Enter] to begin the setup.
   The Root Password Configuration screen displays:

```
============================================================
Root Password Configuration
============================================================
There is currently no password set in the system administrator account
(root). It is recommended that you set one that isactive the first time
the machine is rebooted.
============================================================
Would you like to set a root password (y/n) [y]?
```

   Note: You must set a new root password. This new root password will be used by the initial user when logging in to the ExtremeAnalytics application.

3. Press [Enter] to set a new root password.
   The following text displays where you can enter the new password:

```
Enter new UNIX password:
Retype new UNIX password:
```

4. From the ExtremeAnalytics Appliance (Engine) Deployment Modes screen, select the deployment mode that matches your network environment.
   The default deployment mode is 2.

```
============================================================
ExtremeAnalytics Appliance Deployment Modes
============================================================
This appliance supports multiple deployment modes to suit different
network environments and connectivity characteristics. Please select a
deployment mode below that best fits your requirements.

0. Single Interface
     A single interface is used for both management and monitoring
traffic.
     Suitable for feeds from XOS/VOSS/SLX switches.

1. Single Interface With Tunnel
     A single interface is used for both management and monitoring
traffic.
     A GRE Tunnel will be configured for traffic monitoring.
     Suitable for feeds from Coreflow switches.


2. Interface Mirrored
     Separate interfaces are configured for management and monitoring
```

```
traffic.
     The monitoring interface will put into tap mode for traffic
monitoring.
     Suitable for feeds from XOS/VOSS/SLX switches.


3. Interface Tunnel Mirrored
     Separate interfaces are configured for management and monitoring
traffic.
     The monitoring interface will get its own IP Address and GRE Tunnels
will be configured for traffic monitoring.
     Suitable for feeds from Coreflow switches.

4. Manual Mode
     The interface and tunneling configurations will not be modified by
this script, leaving them to be manually edited by the user instead.

Please select a deployment mode [2]:
```

Note: If you select deployment mode 4, refer to the *ExtremeAnalytics Deployment Guide* for information on how to configure your deployment manually.

5. If you selected deployment mode 1, 2, or 3, the Appliance (Engine) Network Configuration for eth0 screen displays. For each line, enter the requested configuration information and press [Enter].
   If you will be using DNS, the IP address of the name server should be provided. If you are using a name server then you must enter a domain name for the engine. The NIS server is used to authenticate users logging into the engine. If you are using an NIS server, make sure the NIS domain name is valid or users might not be able to log in to the ExtremeCloud IQ - Site Engine applications.

```
============================================================
ExtremeAnalytics Appliance Network Configuration for eth0
============================================================
Enter information below to configure eth0
Enter the hostname for the appliance (Required):
Enter the IP address for eth0 on 10.54.56.141 [10.54.56.141]:
Enter the IP netmask [255.255.255.0]:
Enter the gateway address [10.54.56.2]:
Enter the IP address of the name server (Optional):
Enter the domain name for 10.54.56.141 (Optional):

Enable NIS (y/n) [n]?
```

6. Continue as follows:
   For deployment mode 1, go to step 10.
   For deployment mode 2, go to step 7.
   For deployment mode 3, go to step 9.

7. If you are using a VMware server, proceed to Step 8. If you are using a Hyper-V server, you need to change the configuration on the Windows Server system to promiscuous mode by running the `set_promiscuous.ps1` script, included in the ZIP file containing the virtual engine. When the files are extracted, the script is saved in the directory to which you extracted the engine. The script enables the ExtremeAnalytics sensor to see all traffic coming into the interface.

   From an Administrator PowerShell on the Windows Server system, enter the following command to run the script:

   `.\set_promiscuous.ps1` *VM Nameeth1*

   VM Name - `The name of the virtual machine as reported by Get-VM`

   eth1 - `The default interface. This entry is optional.`

8. On the ExtremeAnalytics Engine, specify one or more tap ports. For each line, enter the requested configuration information and press **[Enter]**.

```
============================================================
ExtremeAnalytics Appliance Network Configuration for Tap Mode
============================================================
Enter the interface name for Tap Mode [eth1]:  eth4
Would you like to add another interface for Tap Mode (y/n) [n]? y
Enter the interface name for Tap Mode [eth2]:  eth5
Would you like to add another interface for Tap Mode (y/n) [n]? n
```

   Go to step 11.

9. Specify one or more GRE tunnel interfaces. For each line, enter the requested configuration information and press **[Enter]**.

```
============================================================
ExtremeAnalytics Appliance Network Configuration for Tunnel Interfaces
============================================================
Enter the interface name for Tunnel Configuration [eth1]: eth4
Enter information below to configure eth4
Enter the IP address for eth4 on pv88 [10.54.211.116]:
Enter the IP netmask [255.255.255.0]:
Enter the gateway address [10.54.211.1]:
Would you like to add another interface for Tunnel Configuration (y/n)
[n]? y
Enter the interface name for Tunnel Configuration [eth1]: eth5
Enter information below to configure eth5
Enter the IP address for eth5 on pv88 [10.54.222.117]:
Enter the IP netmask [255.255.255.0]:
Enter the gateway address [10.54.222.1]:
Would you like to add another interface for Tunnel Configuration (y/n)
```

```
[n]? n
```

10. Enter the IP addresses for one or more GRE tunnels. For each line, enter the requested configuration information and press **[Enter]**

```
============================================================
ExtremeAnalytics Appliance GRE Configuration
============================================================
Remote mirroring can be configured in Coreflow Switches using GRE
tunnels.
This requires a specific mirroring configuration enabled on the switches.

Enter the SRC IP address for the GRE Tunnel [10.54.211.116]:
Enter the DST IP address for the GRE Tunnel [192.168.1.1]: 10.54.1.116
Add another GRE Tunnel (y/n) [n]? y
Enter the SRC IP address for the GRE Tunnel [10.54.222.117]:
Enter the DST IP address for the GRE Tunnel [192.168.1.1]: 10.54.2.117

Add another GRE Tunnel (y/n) [n]? n
```

11. A screen displays asking you to confirm your network setting. Enter 0 to accept the settings.

    The following example shows the Confirm Network Settings screen for **deployment mode 2.**

```
============================================================
Confirm Network Settings
============================================================
These are the settings you have entered. Enter 0 or any key other than a
valid selection to continue. If you need to make a change, enter the
appropriate number now or run the /usr/postinstall/dnetconfig script at a
later time.
============================================================

0. Accept settings and continue
1. Hostname:  pv88
2. Deployment Mode:                            Dual Interface Mirrored
3. Management Interface Configuration (eth0):
       Address:    10.54.184.88
       Netmask:    255.255.255.0
       Gateway:    10.54.184.1
       Nameserver: 10.54.188.120
       Domain name:    nac2003.com
4. NIS Server/Domain:  Not Configured
5. Monitor Interface Configuration:
       Tap Mode Interfaces:  eth4, eth5
```

The following example shows the Confirm Network Settings screen for **deployment mode 3**.

```
============================================================
Confirm Network Settings
============================================================
These are the settings you have entered. Enter 0 or any key other than a
valid selection to continue. If you need to make a change, enter the
appropriate number now or run the /usr/postinstall/dnetconfig script at a
later time.
============================================================

0. Accept settings and continue
1. Hostname:  pv88
2. Deployment Mode:  Dual Interface Tunnel Mirrored
3. Management Interface Configuration (eth0):
       Address:     10.54.184.88
       Netmask:     255.255.255.0
       Gateway:     10.54.184.1
       Nameserver:  10.54.188.120
       Domain name:    nac2003.com
4. NIS Server/Domain:  Not Configured
5. Mirror Interface Configuration:
       Name:       eth4
       Address:    10.54.211.116
       Netmask:    255.255.255.0
       Gateway:    10.54.211.1
       Name:       eth5
       Address:    10.54.222.117
       Netmask:    255.255.255.0
       Gateway:    10.54.222.1
6. GRE tunnels:    10.54.211.116/10.54.1.116
                   10.54.222.117/10.54.2.117
```

12. The SNMP Configuration screen displays. For each line, enter the requested information and press **[Enter]**.

```
============================================================
SNMP Configuration
============================================================
The following information will be used to configure SNMP management of
this device. The SNMP information entered here must be used to contact
this device with remote management applications such as  ExtremeCloud IQ
- Site Engine Console.
============================================================
Please enter the SNMP user name [snmpuser]:
```

```
Please enter the SNMP authentication protocol - MD5 or SHA [MD5]:
Please enter the SNMP authentication credential [snmpauthcred]:
Please enter the SNMP privacy protocol - DES or AES [DES]:
Please enter the SNMP privacy credential [snmpprivcred]:
```

13. A summary screen displays asking you to accept your SNMP Configuration settings. Enter 0 to accept the settings.

```
============================================================
SNMP Configuration
============================================================
These are the current SNMP V3 settings. To accept them and complete SNMP
configuration, enter 0 or any key other than the selection choices.
If you need to make a change, enter the appropriate number now or run the
/usr/postinstall/snmpconfig script at a later time.

0. Accept the current settings
1. SNMP User: snmpv3user
2. SNMP Authentication Protocol: SHA
3. SNMP Authentication: shaauthpassword
4. SNMP Privacy Protocol: AES
5. SNMP Privacy: aesprivpassword
6. Modify all settings
============================================================
Enter selection [0]: 0
```

14. The Configure Date and Time Settings screen displays where you are asked if you want to use an external Network Time Protocol (NTP) server. Enter y to use NTP, and enter your NTP server IP address (es). Enter n to configure the date and time manually and proceed to step 16.
Note that your VMS server should be using the same NTP settings as those configured for your virtual engine (i.e., the same settings as the VMs that are hosted on the VMS server).

```
============================================================
Configure Date And Time Settings
============================================================
The appliance date and time can be set manually or using an external
Network Time Protocol (NTP) server. It is strongly recommended that NTP
is used to configure the date and time to ensure accuracy of time values
for SNMP communications and logged events. Up to 5 server IP addresses
may be entered if NTP is used.
============================================================

Do you want to use NTP (y/n) [y]? y
Please enter a NTP Server IP Address (Required): 144.131.10.120
Would you like to add another server (y/n) [n]? y
```

15. The NTP validate selection screen displays. Enter **0** to accept the current settings and proceed to the Set Time Zone screen at step 17.

```
============================================================
NTP Servers
============================================================
These are the currently specified NTP servers. Enter 0 or any key other
than a valid selection to complete NTP configuration and continue.
If you need to make a change, enter the appropriate number from the
choices listed below.
144.131.10.120

0. Accept the current settings
1. Restart NTP server selection
2. Set date and time manually
============================================================
Enter selection [0]: 0
```

16. If you answered no to using an NTP server to set date and time, the following manual set date and time screen displays.

```
============================================================
Set Date And Time
============================================================
The current system date and time is: Thu 14 Nov 2018 04:34:08 PM EST
Please enter the values for date and time as directed where input is
expected in
the following format:

MM   - 2 digit month of year
DD   - 2 digit day of month
YYYY - 4 digit year
hh   - 2 digit hour of day using a 24 hour clock
mm   - 2 digit minute of hour
ss   - 2 digit seconds
============================================================

Please enter the month [11]:
Please enter the day of the month [14]:
Please enter the year [2018]:
Please enter the hour of day [04]:
Please enter the minutes [34]:
Please enter the seconds [08]:
```

17. Enter **n** at the Use UTC screen.

```
============================================================
Use UTC
============================================================
The system clock can be set to use UTC. Specifying no for using UTC, sets
the hardware clock using localtime.
============================================================

Do you want to use UTC (y/n) [n]?
```

18. The Set Time Zone screen displays. Select the appropriate time zone and press **[Enter]**

```
============================================================
Set Time Zone
============================================================
You will now be asked to enter the time zone information for this system.
Available time zones are stored in files in the /usr/share/zoneinfo
directory.
Please select from one of the following example time zones:

1. US Eastern
2. US Central
3. US Mountain
4. US Pacific
5. Other - Shows a graphical list
============================================================

Enter selection [1]:
```

19. The **Modify Settings** screen displays. This screen summarizes the settings you have entered and provides an opportunity to modify the settings, if desired. Enter **0** to accept the settings.

```
============================================================
Modify Settings
============================================================
All of the information needed to complete the installation of the
ExtremeAnalytics Appliance has been entered. Enter 0 or any key other
than a valid selection to continue. If you need to make a change, enter
the appropriate number from the choices listed below.
============================================================
0. Accept settings and continue
1. Set the root user password
2. Set the host and network settings
3. Set SNMP settings
4. Set the system time
5. Modify all settings
```

```
Enter selection [0]:
```

The ExtremeAnalytics application software is automatically installed. This could take a few minutes. When the installation is complete, you'll see the following screen.

```
============================================================
Extreme Networks - ExtremeAnalytics Appliance - Setup Complete
============================================================
Setup of the ExtremeAnalytics Appliance is now complete.

The appliance is now operational and ready to accept remote connections.

Details of the installation are located in the /var/log/install
directory.
============================================================
```

Note: After you have completed the configuration, it is important to take a snapshot of your engine configuration to be used in the event an engine image reinstall is required. For instructions on how to take a snapshot, see your vSphere client documentation.

Launching the ExtremeAnalytics Application

Now that you have configured the ExtremeAnalytics appliance, you are ready to access the ExtremeCloud IQ - Site Engine Launch Page and run ExtremeAnalytics from a remote client machine.

1. Open a browser window on the remote client machine and enter the ExtremeCloud IQ - Site Engine Launch page URL in the following format: `http://<servername>:8080/`.
   where *<servername>* is the ExtremeCloud IQ - Site Engine server IP address or hostname, and 8080 is the required port number. For example: `http://10.20.30.40:8080/`.
2. On the ExtremeCloud IQ - Site Engine Launch Page, select OneView.
   Note: The first time you attempt to launch an ExtremeCloud IQ - Site Engine application, you will be prompted for the license text you received when you generated your ExtremeCloud IQ - Site Engine product license.
3. At the login window, enter your ExtremeCloud IQ - Site Engine user name and password.
4. On the ExtremeCloud IQ - Site Engine screen, select Analytics at the top of the screen.
5. Select Dashboard.
   The Dashboard tab displays.

Adding the ExtremeAnalytics Engine

To add the ExtremeAnalytics engine to ExtremeAnalytics:

1. Select the **Analytics Configuration** tabAnalytics Configuration tab
2. Open the drop-down list below Overview and select **Add Engine**.
3. Enter the following information:
    - IP address of the eth0 interface
    - Name of the ExtremeAnalytics engine
4. From the **Profile** list, select the appropriate SNMP profile.
5. Select **OK**.
6. Open the drop-down list below Overview and select **Enforce Engine**.

Changing ExtremeAnalytics Engine Settings

Use these steps if you need to change your ExtremeAnalytics virtual engine settings following your initial engine configuration. Perform these steps in the vSphere client Console tab.

Changing Basic Network Configuration

To change basic network configuration settings such as hostname and engine IP address, enter the following command at the login prompt in the **Console** tab:
`/usr/postinstall/dnetconfig`

This will start the network configuration script and enable you to make the required changes. You must reboot the engine for the new settings to take effect.

Changing SNMP Configuration

To change SNMP configuration settings such as SNMP Trap Community String, SNMP User, SNMP Authentication, and SNMP Privacy credentials, enter the following command at the login prompt in the **Console** tab:
`/usr/postinstall/snmpconfig`

This will start the SNMP configuration script and enable you to make the required changes.

Changing Date and Time Settings

To enable or disable using NTP to configure the engine date and time, or to manually set the date and time on the engine, enter the following command at the login prompt in the **Console** tab:
`/usr/postinstall/dateconfig`

This will start the date and time configuration script and enable you to change the settings.

Changing the ExtremeAnalytics Server IP Address

To change the IP address of the ExtremeAnalytics server, enter the following command at the login prompt in the Console tab:
`/opt/appid/configMgmtIP <IP address>`

Then, start using the new ExtremeAnalytics server by typing: `appidctl restart`.

Changing the Web Service Credentials

The Web Service credentials provide access to the ExtremeAnalytics Appliance Administration web page and the web services interface for the ExtremeAnalytics engine. Engines are shipped with a preconfigured default password.

If you have changed the credentials in the Analytics tab and then install a new engine that is using the default password, you will not be able to monitor or enforce to the new engine until you change the password on the engine using this command. The credentials you enter on the engine must match the credentials specified in the Web Credentials section in Analytics > Configuration > Configuration.

To change Web Service credentials, enter the following command at the login prompt in the Console tab:
`/opt/appid/configWebCredentials <username> <password>`

Then, restart the engine by typing: `appidctl restart`

Upgrading ExtremeAnalytics Engine Software

Upgrades to the ExtremeCloud IQ - Site Engine engine software will be made available from the Network Management Suite (NMS) Download webpage.

Prior to performing an upgrade, you can create a snapshot of the engine that you can revert to in the event an upgrade fails. Refer to the vSphere client documentation for instructions on creating a snapshot.

1. On a system with an Internet connection, go to the Network Management Suite (NMS) Download web page: http://extranet.extremenetworks.com/downloads/pages/NMS.aspx.
2. After entering your email address (username) and password, follow this path to the download page: Visibility & Control > Network Management Suite (NMS) > Software > select a version.
3. Download the following ExtremeAnalytics virtual engine file from the NMS Downloads section:

   `purview_appliance_upgrade_to_<version>.bin`
4. Use FTP, SCP, or a shared mount point, to copy the file to the ExtremeAnalytics virtual engine.
5. SSH to the engine.
6. Cd to the directory where you downloaded the files.

7. Change the permissions on the upgrade file by entering the following command:

   ```
   chmod 777 purview_appliance_upgrade_to_<version>.bin
   ```

8. Run the install program by entering the following command:

   ```
   ./purview_appliance_upgrade_to_<version>.bin
   ```

   The upgrade automatically begins. You are notified when the upgrade completes.

Reinstalling ExtremeAnalytics Engine Software

In the event that a software reinstall becomes necessary, it is recommended that you restore an engine snapshot that you previously made using the vSphere client. Refer to the vSphere client documentation for instructions on restoring a snapshot.

If you do not have an engine snapshot to restore, you will need to re-deploy and reconfigure the ExtremeAnalytics virtual engine following the instructions in Engine Deployment and this section.

Note: The re-installation procedure reformats the hard drive, reinstalls all the ExtremeAnalytics engine software, the operating system, and all related Linux packages.