



ExtremeCloud™ IQ - Site Engine Release Notes

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23.02.10 Release Notes

ExtremeCloud IQ - Site Engine includes all the features and functionality of Extreme Management Center as well as issues that have been resolved and configuration changes for this release.

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.

IMPORTANT:

- For upgrade and installation requirements, as well as configuration considerations, see [ExtremeCloud IQ - Site Engine Configuration and Requirements](#).
- ExtremeCloud IQ - Site Engine version 23.02.10 consumes licenses from ExtremeCloud IQ in a connected deployment mode or from a license file in air gap deployment mode. ExtremeCloud IQ - Site Engine is a subscription-based -only licensing model. Existing NMS licenses do not provide access to ExtremeCloud IQ - Site Engine. You can view the status of your license by accessing [Administration > Licenses](#) after the installation is complete.
- ExtremeCloud IQ - Site Engine is not compatible with ExtremeCloud IQ Connect level account. Either the Evaluation or Pilot level is mandatory.
- In Connected mode, ports statistics are shared with ExtremeCloud IQ only for ports that are enabled to Collect Port Statistics.
- Onboarding ExtremeCloud IQ - Site Engine devices using an ExtremeCloud IQ HIQ account is not supported. You must use a VIQ Account to onboard ExtremeCloud IQ - Site Engine devices.

For information regarding the features supported by specific devices, see the [Firmware Support Matrix](#). Version 23.02.10 of ExtremeCloud IQ - Site Engine supports the devices listed in the matrix.

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.

Connected mode only - 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 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 Changes

Starting in ExtremeCloud IQ - Site Engine version 23.2.10 each stack member consumes a license in connected mode. In connected mode, ExtremeCloud IQ - Site Engine now reports

stack members to ExtremeCloud IQ. If you use stacks in connected mode, ensure that enough ExtremeCloud IQ Pilot licenses are in the license pool before upgrading to ExtremeCloud IQ - Site Engine 23.2.10 or later.

Beginning with ExtremeCloud IQ - Site Engine version 21.04.10, your ExtremeAnalytics license is included as part of your ExtremeCloud IQ Pilot license. Separate licenses are no longer required.

For users upgrading from Extreme Management Center to ExtremeCloud IQ - Site Engine, note that the XIQ-NAC subscription must be used instead of IA-ES- license. For new users that complete an initial install of ExtremeCloud IQ - Site Engine, ExtremeControl licensing does not include end-system capabilities.

Onboarding ExtremeCloud IQ - Site Engine from ExtremeCloud IQ in Connected Deployment Mode

After installing or upgrading to ExtremeCloud IQ - Site Engine, you need to [onboard](#) ExtremeCloud IQ - Site Engine to ExtremeCloud IQ. When the onboarding is complete, you can then access ExtremeCloud IQ - Site Engine.

Entering your ExtremeCloud IQ name and password are required during the first-time login to ExtremeCloud IQ - Site Engine.

NOTE:

If Extreme Management Center is onboarded to ExtremeCloud IQ, when you upgrade to ExtremeCloud IQ - Site Engine, you need to remove Extreme Management Center from ExtremeCloud IQ before onboarding ExtremeCloud IQ - Site Engine.

Enhancements

The following enhancements were made to ExtremeCloud IQ - Site Engine in this release. For additional information about each of the enhancements listed in the release notes, see [ExtremeCloud IQ - Site Engine Documentation](#).

ExtremeCloud IQ - Site Engine

ExtremeCloud IQ - Site Engine Enhancements

In connected mode, the ExtremeCloud IQ - Site Engine now reports stack members to ExtremeCloud IQ. Each stack member consumes a license in connected mode, the same way as in air gap deployment mode.

ExtremeAnalytics

ExtremeAnalytics Enhancements

Added a new option to **Enable Fabric Mode** for the Application Analytics Engine configuration.

The Application Analytics Engine must see both directions of each flow to deliver the full details. Both directions of the flow must reach the same process thread to calculate the network and application response time. Ensure to select Enable Fabric Mode in the Application Analytics Engine configuration if the analytics engine gathers data from Extreme Fabric Connect or Extreme IP Fabric.

Added support and configuration for Flowmon feature (IPFIX and K-mirror) on Universal Series Switches 5520 running Switch Engine firmware 32.3 and newer.

Universal Series Switches 5420 running Switch Engine can be used for limited/lab use.

ExtremeManagement

ExtremeManagement Enhancements

Added a new **Filters** option for selecting traps in the alarm definition.

Added support to enforce the Fabric Connect service names.

Added a new option to show Fabric Connect L2 VSNs from a device right click menu > More Views > **Fabric L2VSNs**.

Added a new option to **Show Fabric Connect** in the views menu of Topology and Geography maps. Show Fabric Connect displays the primary and secondary Unicast paths, showing the ISIS Areas and Fabric Connect services together in the new ISIS Links option.

Added a new option for **NOS Persona Change** in the ZTP+ Device Defaults of Site options. NOS Persona Change is also available in the Device Settings. A supported device running the Switch Engine Network OS can now change to Fabric Engine through the ZTP+ process.

Added a new API call to reload the configuration from the device.

ExtremeControl

ExtremeControl Enhancements

Updated the MAC OUI vendor list with standards from IEEE. 895 changes since last update to the oui.txt file.

Added a Use RADIUS Accounting Packets (IPv6 Address) option in Engine Settings. If enabled the IPv6 Address for End-Systems is resolved from a Radius Accounting packet (with Framed-IPv6-Address attributes).

Added support to display and search for IPv6 addresses in ExtremeControl End-System table and End-System history.

Customer Found Defects and Known Issues

Customer Found Defects Addressed 23.02.10

ExtremeCloud IQ - Site Engine CFDs Addressed	ID
ExtremeCloud IQ license subscriptions with future start dates was not sent to ExtremeCloud IQ - Site Engine.	2596253
Diagnostics was missing for the Collector Status Log to show the last error source.	2637141
Policy enforcement to ExtremeCloud IQ might time out while verifying the new fingerprint definitions were installed. After the upgrade, a delay can occur for several minutes while verifying new fingerprint definitions.	2649786
ExtremeAnalytics CFDs Addressed	ID
GeoIP database was out of date and causing some IP address locations to be identified incorrectly.	2647671
ExtremeControl CFDs Addressed	ID
Attempting to save a policy domain fails with a blank dialog after running Reload VLANs.	2477754
Many StaleDataException and NullPointerException errors were seen in the server.log.	2477625
Filtering switches in Add Switches area was not working correctly.	2580079
	2638713
Memory leaks in ExtremeControl due to RADIUS authentication rejects.	2562537
Daily backup was causing a GIM service error 409 when saving the backup file.	2628287
Policy enforce was failing on EXOS/Switch Engine devices when changing the type case of VLAN names.	2639117
Authenticated Web Access with an advanced location based portal was always assigning to the Web Authenticated Users end-system group after registration, and not assigning to the customized end-system groups.	2635240
During GIM restore, the static routes configuration was incorrectly imported or created when using the interface name, such as Admin, ServiceA, ServiceB.	2640097
RADIUS Timeout value was always being configured to 10 seconds on EXOS device, even when over 10 seconds was configured in the Engine Settings.	2611604
Sponsor registration page was not displaying the sponsors pending users after logging into the sponsor URL.	2630970
Switch Port field in the MAC Lock was incorrectly changed to an integer spinner instead of text.	2651145
SQL syntax error was generated while using a negated Does not match value filter on one of the aggregated AP columns, such as AP Name, AP MAC, AP Serial, or SSID.	2654854
Missing fingerprint definition test for Extreme Networks Wing AP460.	2652143
Missing warning message when saving the portal configuration with OAuth registration enabled and FQDN disabled in the base portal configuration.	2651159

ExtremeControl CFDs Addressed	ID
The fail through logic for MAC auth was not working due to incorrect validation of the property.	2667722
Access granted page and text was inaccurately displayed after an acceptable use policy with OAuth registration.	2669366
Sorting failed with an error in Access Control Engine Webview > Status > Threads page.	2674327
IP ToS rules with ECN mask bits was incorrectly enforced in ACL Rule mode.	2670980
Verify domain fails after enforcing ACL role names longer than 32 characters to EXOS/Switch Engine devices.	2670980
Exception in Access Control Engine when a username was missing in kerberos messages.	2682938
In GIM when binding the certificate and key, the certificate validation was not working properly.	2688780
%VLAN_TUNNEL_TAG% was not replaced correctly when being used as a nested variable.	2711732

ExtremeManagement CFDs Addressed	ID
The VIST VLAN L2VSN origin was marked as CONFIG rather than CONFIG_VIRTUAL_IST, which caused a comparison failure during enforce preview.	2602971
SSH config was not supporting legacy ERS switch MAC algorithms.	2633430
Access Control for RADIUS was not starting when an invalid value was entered in the appliance property, RADIUS_TLS_CIPHER_LIST such as Default or default.	2633307
Inventory scripts for EXOS/Switch Engine was not detecting permission denied errors due to incorrect username or password in inventory options for SFTP/SCP/FTP settings.	2630178
Upgrading from version 22.6 or prior might have removed local port templates that are not in use.	2637034
A user logging out might loop back into a system as logged in due to a SSO token logout issue.	2634807
ExtremeCloud IQ - Site Engine was incorrectly reporting having no connection with ExtremeCloud IQ for 30 days.	2676749 2701815
Restore was failing for non-root installations with a Failed to delete directory error.	2644065
Syslog Alarm action severity was not correctly mapping to the alarm definition severity level.	2656201
During database backup the directories failed to archive and the old archives did not clean up if the backup directories outside of the database contained files 2Gb or larger.	2651990
Changing the server trust mode in the admin certificates view did not indicate that a server restart is required.	2667331
No alarm was raised when a Missing Archive, can't complete ZTP+ process event was recorded.	2678376
Default authorization groups used for SSO from ExtremeCloud IQ had duplicate precedence. The duplicate entries can now renumber during an upgrade. You can verify the Authorization groups precedence column (hidden by default) after the upgrade at Administration > Users > Authorization Groups.	2684968
ZTP+ was waiting the LLDP wait time even if the IP Range match was detected and precedence was IP range over LLDP.	2675238

ExtremeManagement CFDs Addressed	ID
ZTP+ device onboarding for a site other than /World through Global IP to Site Mapping was not assigning the new site Automated Port Template configurations to the applicable ports.	2675238
Inventory scripts did not check for a prompt before running on EXOS devices.	2685850
Could not import maps with names larger than 64 bytes. After the upgrade, you can now import map names up to 256 bytes.	2704162
Heat Map could error with an IndexOutOfBoundsExpection	2709483
L2VSN view active filter was not showing UNI Type names.	2713662
Firmware upgrade Device Upgrade Group minimum value could not be set to 1.	2714136

Known Issues Addressed in 23.02.10

ExtremeControl Issues Addressed

Addressed an issue when right clicking on a device > Tasks was not showing the scripts/workflows in Control > Access Control > Engine Groups > Switches.

ExtremeManagement Issues Addressed

ERS8600 inventory scripts were updated to check for prompts from different Network OS versions.

Addressed an issue when under some conditions the DvR role in the ZTP+ Configuration screen did not offer all relevant options.

Corrected column headers in the flexview for XOS PoE Main for Consumption Power and Measured Power to indicate in watts.

Factory default scripts now have the Network OS properly defined. Right clicking on a device > Tasks no longer displays incompatible scripts.

Removed a non-functional Northbound Diagnostic option.

Addressed an issue when the uninstaller was failing with a Log4j2 error.

Addressed Vulnerabilities

This section presents the vulnerabilities addressed in 23.2. If you need more information on vulnerability testing, see [Security and Vulnerability Testing](#).

23.02.10 ExtremeAnalytics images, and Application Analytics Traffic Sensor images:

CVE-2021-4159, CVE-2021-44758, CVE-2022-0392, CVE-2022-0417, CVE-2022-20421, CVE-2022-20421, CVE-2022-23521, CVE-2022-2663, CVE-2022-28321, CVE-2022-3061, CVE-2022-3303, CVE-2022-3437, CVE-2022-3586, CVE-2022-3643, CVE-2022-3646, CVE-2022-39188, CVE-2022-39842, CVE-2022-40307, CVE-2022-4095, CVE-2022-41903, CVE-2022-42896, CVE-2022-42898, CVE-2022-43551, CVE-2022-43552, CVE-2022-43750, CVE-2022-43945, CVE-2022-44617, CVE-2022-44640, CVE-2022-44792, CVE-2022-44793, CVE-2022-45934, CVE-2022-46285, CVE-2022-47629, CVE-2022-4883

23.02.10 ExtremeControl images:

CVE-2021-4159, CVE-2021-44758, CVE-2022-0392, CVE-2022-0417, CVE-2022-20421, CVE-2022-20421, CVE-2022-23521, CVE-2022-2663, CVE-2022-28321, CVE-2022-3061, CVE-2022-3303, CVE-2022-3437, CVE-2022-3586, CVE-2022-3643, CVE-2022-3646, CVE-2022-39188, CVE-2022-39842, CVE-2022-40307, CVE-2022-4095, CVE-2022-41903, CVE-2022-42896, CVE-2022-42898, CVE-2022-43551, CVE-2022-43552, CVE-2022-43750, CVE-2022-43945, CVE-2022-44617, CVE-2022-44640, CVE-2022-44792, CVE-2022-44793, CVE-2022-45934, CVE-2022-46285, CVE-2022-47629, CVE-2022-4883, CVE-2021-33621, CVE-2022-31631

23.02.10 ExtremeCloud IQ - Site Engine images:

CVE-2021-4159, CVE-2021-44758, CVE-2022-0392, CVE-2022-0417, CVE-2022-20421, CVE-2022-20421, CVE-2022-23521, CVE-2022-2663, CVE-2022-28321, CVE-2022-3061, CVE-2022-3303, CVE-2022-3437, CVE-2022-3586, CVE-2022-3643, CVE-2022-3646, CVE-2022-39188, CVE-2022-39842, CVE-2022-40307, CVE-2022-4095, CVE-2022-41903, CVE-2022-42896, CVE-2022-42898, CVE-2022-43551, CVE-2022-43552, CVE-2022-43750, CVE-2022-43945, CVE-2022-44617, CVE-2022-44640, CVE-2022-44792, CVE-2022-44793, CVE-2022-45934, CVE-2022-46285, CVE-2022-47629, CVE-2022-4883, CVE-2022-32221, CVE-2023-21836, CVE-2023-21840, CVE-2023-21863, CVE-2023-21867, CVE-2023-21868, CVE-2023-21869, CVE-2023-21870, CVE-2023-21871, CVE-2023-21873, CVE-2023-21875, CVE-2023-21876, CVE-2023-21877, CVE-2023-21878, CVE-2023-21879, CVE-2023-21880, CVE-2023-21881, CVE-2023-21882, CVE-2023-21883, CVE-2023-21887

Installation, Upgrade, and Configuration Changes

Installation Information

There are two supported scenarios for onboarding ExtremeCloud IQ - Site Engine to ExtremeCloud IQ:

- After upgrading to ExtremeCloud IQ - Site Engine from Extreme Management Center.
- After Initial Installation of ExtremeCloud IQ - Site Engine.

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

- Pilot
- Navigator
- No License

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.

For complete installation instructions, see [ExtremeCloud IQ - Site Engine Suite Installation](#).

IMPORTANT:

The **Compliance** tab is available and supported by Extreme on an engine running the Linux operating system supplied by Extreme. Other Linux operating systems can support ExtremeCompliance functionality, but python version 2.7 or higher must be installed. Additionally ExtremeCompliance functionality requires the git, python2, python mysql module, python setuptools module, and python "pygtail" module packages be installed and related dependencies managed by the customer for their server's unique operating system and version.

Installing Without an Internet Connection

If your Linux system requires an operating system upgrade, you are prompted to upgrade using either an internet connection or locally (without an internet connection) if no additional Ubuntu packages need to be installed.

!!! ATTENTION !!!

We can attempt to upgrade the OS without using the internet if there were no extra Ubuntu packages installed. If there were extraneous packages installed, the upgrade will fail with this method.

Do you want to attempt a local in-place upgrade of the OS and reboot when complete? (Y/n)

Custom FlexViews

When reinstalling ExtremeCloud IQ - Site Engine Console, the installation program saves copies of any FlexViews you created or modified in the `<install directory>\.installer\backup\current\appdata\System\FlexViews` folder.

If you are deploying FlexViews via the ExtremeCloud IQ - Site Engine server, save them in the `appdata\VendorProfiles\Stage\MyVendorProfile\FlexViews\My FlexViews` folder.

Custom MIBs and Images

If you are deploying MIBs via the ExtremeCloud IQ - Site Engine server, they are saved in the `appdata\VendorProfiles\Stage\MyVendorProfile\MIBs\` folder.

If you are deploying device images (pictures) via the ExtremeCloud IQ - Site Engine server, they are saved in the `appdata\VendorProfiles\Stage\MyVendorProfile\Images\` folder.

Important Upgrade Information

ExtremeCloud IQ - Site Engine version 23.02.10 supports upgrades from Extreme Management Center 8.5.7 or ExtremeCloud IQ - Site Engine. The following table details which upgrades are needed for each NetSight, Extreme Management Center or ExtremeCloud IQ - Site Engine version prior to upgrading to ExtremeCloud IQ - Site Engine version 23.02.10.

NOTE: You can change deployment modes from air gap to connected or from connected to air gap after the upgrade.

Current Version			Upgrade to ExtremeCloud IQ - Site Engine version 23.2
	8.3.3	8.5.7	
ExtremeCloud IQ - Site Engine (all versions)			X
Extreme Management Center version 8.5.5, 8.5.6 , or 8.5.7			X
Extreme Management Center version 8.5.0-8.5.4		X	X
Extreme Management Center version 8.4.4		X	X
*Extreme Management Center version 8.4.0-8.4.3		X	X
*Extreme Management Center version 8.2.x or 8.3.x		X	X
Extreme Management Center version 8.0.x or 8.1.x	X	X	X
NetSight version 7.1 or older	X	X	X

IMPORTANT:

A backup (**Administration > [Backup/Restore](#)**) of the database must be performed prior to the upgrade and saved to a safe location.

During the installation (if upgrading using the user interface installer), you have the option to backup additional user files by selecting a checkbox on the Previous Installation Detected screen. This option lets you backup user files such as Inventory Manager archive files not automatically backed up during the install because the backup could take several minutes.

Important Upgrade Considerations

- If your network is using ExtremeAnalytics or ExtremeControl engines, Fabric Manager, or another add-on feature, you must first perform the ExtremeCloud IQ - Site Engine upgrade to version 23.02.10 and then upgrade the feature.
- The 4.xx version of the NAC Request Tool is not compatible with the 23.02.10 ExtremeCloud IQ - Site Engine server. If you are using the NAC Request Tool you need to upgrade the version of NAC Request Tool to version 23.02.10.
- To upgrade Traffic Sensor from version 21.x, a fresh installation is recommended. If the fresh installation cannot be used, then please check [Knowledge Base](#) for a special procedure.

IMPORTANT:

When performing an upgrade, be sure to back up the database prior to performing the upgrade, and save it to a safe location. Use the **Administration** > [Backup/Restore](#) tab to perform the backup.

- When upgrading the ExtremeCloud IQ - Site Engine server, ExtremeAnalyticsengine, or ExtremeControlengine to version 23.02.10, ensure the DNS server IP address is correctly configured.
- When upgrading to ExtremeCloud IQ - Site Engine version 23.02.10, if you adjusted the ExtremeCloud IQ - Site Engine memory settings and want them to be saved on upgrade, a flag (`-DcustomMemory`) needs to be added to the `/usr/local/Extreme_Networks/NetSight/services/nserver.cfg` file.

For example:

```
-Xms12g -Xmx24g -XX:HeapDumpPath=../../nsdump.hprof -
XX:+HeapDumpOnOutOfMemoryError -XX:MetaspaceSize=128m -DcustomMemory
```

License Renewal

Upgrading to ExtremeCloud IQ - Site Engine version 23.02.10 requires you to transition from perpetual to subscription-based license model. Existing NMS licenses do not provide access to ExtremeCloud IQ - Site Engine. If your perpetual licenses were not transitioned to subscription-based licenses, contact your Extreme Networks Representative for assistance.

Free Space Consideration

When upgrading to ExtremeCloud IQ - Site Engine version 23.02.10, a minimum of 15 GB of free disk space is required on the ExtremeCloud IQ - Site Engineserver

To increase the amount of free disk space on the ExtremeCloud IQ - Site Engine server, perform the following:

- Decrease the number of ExtremeCloud IQ - Site Engine backups (by default, saved in the `/usr/local/Extreme_Networks/NetSight/backup` directory).
- Decrease the Data Persistence settings (**Administration > Options > Access Control > Data Persistence**).
- Remove unnecessary archives (**Network > Archives**).
- Delete the files in the `<installation_directory>/NetSight/.installer` directory.

Site Discover Consideration

Discovering devices via the **Site** tab using a **Range**, **Subnet**, or **Seed** discover might not successfully add all expected devices. To correct the issue, increase the **Length of SNMP Timeout** value on the **Administration > Options > Site** tab in the Discover First SNMP Request section.

ExtremeAnalytics Upgrade Information

Enabling or disabling the disk flow export feature might cause enforce operations to time out. Enforcing again resolves the issue.

When you delete an ExtremeXOS/Switch Engine device that is configured as a flow source via the Flow Sources table of the **Analytics > Configuration > Engines > Configuration** tab from the Devices list on the **Network > Devices** tab, an error message is generated in the `server.log`. The message does not warn you that the device is in use as a flow source. Adding the device back in the Devices list on the **Network > Devices** tab or removing the device from the Flow Source table fixes the issue.

The Flow Sources table on the **Analytics > Configuration > engine > Configuration** tab may take a few minutes to load.

ExtremeControl Version 8.0 and later

Beginning in version 8.0, ExtremeControl may fail to join Active Directory when accessing as a **Standard Domain User with Descendant Computer Objects ("Reset password" permissions only)** group member.

To allow this functionality, add the following permissions:

- Reset Password
- Validated write to DNS host name
- Validated write to service principal
- Read and write account restrictions
- Read and write DNS host name attributes
- Write servicePrincipalName

Other Upgrade Information

Immediately after you install version 23.02.10 on the ExtremeControlengine, the date and time does not properly synchronize and the following error message displays:

```
WARNING: Unable to synchronize to a NTP server. The time might not be
correctly set on this device.
```

Ignore the error message and the date and time automatically synchronize after a short delay.

Additionally, the following message might display during the ExtremeControl upgrade to version 23.02.10:

No domain specified

To stop domain-specific winbindd process, run `/etc/init.d/winbindd stop {example-domain.com}`

Fabric Configuration Information

Certificate

Fabric Manager might be unavailable via ExtremeCloud IQ - Site Engine after upgrading if the certificate is missing in ExtremeCloud IQ - Site Engine Trust store.

To ensure Fabric Manager is available, enter the Fabric Manager certificate in the ExtremeCloud IQ - Site Engine Trust store using **Generate Certificate** option. See [Add Fabric Manager Certificate](#) for the certificate procedure.

Authentication Key

When you provision authentication keys for Fabric Attach, the key cannot be read back for security reasons. When the key is read from the device, it always shows "*****". For this reason, it might seem that there is a configuration mismatch when one does not exist.

Service Configuration Change

If you change a configured service via the **Configure Device** window that references one of the following, and then enforce those changes to the device, the configuration on the device might change unexpectedly:

- MLT
- SMLT
- Port-specific settings to a port belonging to an MLT or SMLT

To prevent this merge, change rows in the **Enforce Preview** window where MLT or SMLT are in use from **Current** to **Desired**.

To correct the issue after enforcement, modify the service on the device via the CLI.

CLIP Addresses

Using the CLIP Addresses table in the Configure Device window, you can enter addresses in both IPv4 and IPv6 formats. However, ExtremeCloud IQ - Site Engine version 23.02.10 only supports applying a single address (either IPv4 or IPv6) to a Loopback Interface.

Gateway Address Configuration Change

In versions of ExtremeCloud IQ - Site Engine prior to 23.02.10, the Default Gateway IP Address is configured as part of the VLAN. In 23.02.10, the Default Gateway IP Address is configured as part of the VRF.

When enforcing VRFs to a device after upgrading to version 23.02.10, merge any **Default Gateway IP Addresses** from the device into the configuration of ExtremeCloud IQ - Site Engine to prevent incorrect configuration of the device.

Upgrading VSP-8600

When upgrading from Extreme Management Center version 8.2 to version 8.3, manually reload previously discovered VSP-8600 devices to gain access to Fabric Connect features.

Removing Fabric Connect Configuration

Removing a device's Fabric Connect configuration by setting the **Topology Definition** to **<None>** may fail if the device has Logical Interfaces assigned to ISIS.

Password Configuration

Fabric Manager fails to onboard in ExtremeCloud IQ - Site Engine if the root password includes an ampersand (&) character. Additionally, if the Administration > Inventory Manager > SCP tab contains a password that includes an ampersand (&) in ExtremeCloud IQ - Site Engine, the Fabric Manager firmware does not download successfully.

Ensure you use a password without an ampersand (&) character.

VRF Configuration

VOSS/Fabric Engine SNMP performance is adversely affected as the number of VRF configurations increases. This issue can be resolved by upgrading to VOSS/Fabric Engine release 8.1.1 or later or VSP-8600 series version 6.3.3 or later.

Device Configuration Information

VDX Device Configuration

To properly discover interfaces and links for VDX devices in ExtremeCloud IQ - Site Engine, enable `three-tuple-if` on the device.

To enable `three-tuple-if` on the device in ExtremeCloud IQ - Site Engine:

NOTE:

1. Access the **Network > Devices** tab.
2. Right-click on the device in the Devices table.
3. Select **Tasks > Config > VDX Config Basic Support**.

Additionally, for ExtremeCloud IQ - Site Engine to display VCS fabric , the NOS version must be 7.2.0a or later.

Rediscover VDX devices after upgrading to ExtremeCloud IQ - Site Engine.

VOSS/Fabric Engine Device Configuration

Topology links from VOSS/Fabric Engine devices to other VOSS/Fabric Engine or ERS devices might not display in a topology map (or might display inconsistently). To ensure topology map links display correctly, verify that the VOSS/Fabric Engine device is configured to publish its management IP address in the autotopology (SONMP) data.

Ensure that the output of `show sys setting` command shows:

```
autotopology : on
ForceTopologyIpFlag : true
clipId-topology-ip : 0
```

If the output values displayed are different, configure the VOSS/Fabric Engine device to publish management IP address in SONMP data by executing the following CLI commands:

```
(config)# autotopology
(config)# sys force-topology-ip-flag enable
(config)# default sys clipId-topology-ip
```

The **Status** of LAG links in maps will start working after the next polling following an upgrade to ExtremeCloud IQ - Site Engine. You can initiate the polling of a device by performing a refresh/rediscovery of the device.

ERS Device Configuration

ERS devices might automatically change VLAN configurations you define in ExtremeCloud IQ - Site Engine. To disable this, change the `vlan configcontrol` setting for ERS devices you add to ExtremeCloud IQ - Site Engine by entering the following in the device command line:

```
CLI commands
enable
config term
vlan configcontrol flexible
```

Additionally, configure all VLANs on the port for an ERS device with the same tag status (tagged or untagged). If enforcing to an ERS device on which a port has at least one VLAN as tagged, ExtremeCloud IQ - Site Engine adds all untagged VLANs to the tagged VLAN list and clears the untagged VLAN list.

Creating an archive for ERS devices using the **Network > Archives** tab does not complete successfully if Menu mode (cmd-interface menu) is used instead of CLI mode (cmd-interface cli). See [How To Set Default Management Interface To Either Menu or CLI Mode](#) to create the archive.

SLX Device Configuration

When creating a ZTP+ Configuration for an SLX 9240 on which firmware version 18s.01.01 or 18s.01.02 is installed, the ZTP+ process fails if the **Administration Profile** value uses SSH or Telnet CLI credentials. ExtremeCloud IQ - Site Engine indicates that the SSH or CLI profile is not supported by the device.

To create a ZTP+ configuration for an SLX 9240:

1. Create a new Device Profile with the **CLI Credential** set to **< No Access >**.

NOTE: The SLX ZTP+ Connector does NOT support configuring CLI credentials on the device.

2. Create the ZTP+ Configuration and select the new **Device Profile** you created in Step 1 as the **Administration Profile**.
3. After the ZTP+ process successfully completes and the device is added to ExtremeCloud IQ - Site Engine, select a **Device Profile** that uses the correct CLI credentials for the SLX device in the **Administration Profile**.

ExtremeXOS Device Configuration

ExtremeXOS/Switch Engine devices on which firmware version 30.3.1.6 is installed do not download and install new firmware versions successfully via the ZTP+ process. To correct the issue, access the **Network > Firmware** tab in ExtremeCloud IQ - Site Engine, select the ExtremeXOS device you are updating via ZTP+, and change the **Version** field in the Details right-panel from **builds/xos_30.3/30.3.1.6** to **30.3.1.6**.

Firmware Upgrade Configuration Information

ExtremeCloud IQ - Site Engine supports firmware downloads and uploads to devices using TFTP, FTP, SCP, and SFTP. However, before firmware images can be downloaded or uploaded from the server, ExtremeCloud IQ - Site Engine needs the root path or directory for each of the protocols. The following default root paths for each protocol are configurable from the **Administration > Options > Inventory Manager** tab:

Protocol Root Path:

- TFTP: /tftpboot/firmware/images/
- FTP: /tftpboot/firmware/images/
- SCP: /root/firmware/images/
- SFTP: /root/firmware/images/

To upload firmware images that are 2 GB or less to the server, use the ExtremeCloud IQ - Site Engine **Network > Firmware** tab. For files larger than 2 GB, use a third-party client (such as SCP, WinSCP, or FTP).

For example, to use SCP to upload a firmware image to the SCP root path on the server, enter the following:

- `scp <LOCAL_FIRMWARE_PATH> root@<ExtremeCloud IQ - Site Engine_SERVER_IP>:/root/firmware/images`
- Where:
 - `<ExtremeCloud IQ - Site Engine_SERVER_IP>`= IP Address to ExtremeCloud IQ - Site Engine Server
 - `<LOCAL_FIRMWARE_PATH>`= fully qualified path to a firmware image on the client machine

Wireless Manager Upgrade Information

A High Availability pair cannot be added as a flow source if the WLAN(s) selected are not in common with both wireless controllers.

Server and Client System Requirements

IMPORTANT:

Wireless event collection is disabled by default in version 23.02.10 due to the increase in disk space usage required. To enable event collection, select **Enable Event Collection** **Event Analyze**. Then select **Administration > Options > [Event Analyzer](#)**.

Internet Explorer is not supported in ExtremeCloud IQ - Site Engine version 23.02.10.

ExtremeCloud IQ - Site Engine Server Requirements

Manufacturer	Operating System
Linux	Red Hat Enterprise Linux WS and ES v6 and v7 Ubuntu 18.04
VMware® (ExtremeCloud IQ - Site Engine Virtual Engine)	VMware ESXi™ 6.0 server VMware ESXi™ 6.5 server VMware ESXi™ 6.7 server VMware ESXi™ 7.0 server vSphere (client only)™
Microsoft® Hyper-V (ExtremeCloud IQ - Site Engine Virtual Engine)	Windows® Server 2012 R2 Windows® Server 2016

These are the operating system requirements for the ExtremeCloud IQ - Site Engine server.

ExtremeCloud IQ - Site Engine Client Requirements

These are the operating system requirements for remote ExtremeCloud IQ - Site Engine client machines.

Manufacturer	Operating System
Windows (qualified on the English version of the operating systems)	Windows® 10
Linux	Red Hat Enterprise Linux WS and ES v6 and v7 Ubuntu 18.04
Mac OS X®	El Capitan Sierra

ExtremeCloud IQ - Site Engine Server and Client Hardware Requirements

These are the hardware requirements for the ExtremeCloud IQ - Site Engine server and ExtremeCloud IQ - Site Engine client machines.

NOTES: ExtremeControl and ExtremeAnalytics are not supported on Small ExtremeCloud IQ - Site Engine servers.

ExtremeCloud IQ - Site Engine Server Requirements

	Small	Medium	Enterprise	Large Enterprise
Total CPUs	1	2	2	2
Total CPU Cores	8	16	24	24
Memory	16 GB	32 GB	64 GB	64 GB
Disk Size	240 GB	480 GB	960 GB	1.92 TB
IOPS	200	200	10,000	10,000
Recommended scale based on server configuration:				
Maximum APs	250	2,500	25,000	25,000
Maximum Wireless MUs	2,500	25,000	100,000	100,000
Maximum Managed Devices	100	1,000	10,000 air gap 8,000 connected	10,000 air gap 8,000 connected
ExtremeControl End-Systems	N/A	50,000	200,000	200,000
Statistics Retention (Days)	90	180	180	360
ExtremeAnalytics	No	Yes	Yes	Yes
MU Events	No	Yes	Yes	Yes

IMPORTANT: For optimal performance the CPU and Memory needs to reserved in the ESX Client and the virtual machine needs to be deployed using Thick Disk provisioning.

ExtremeCloud IQ - Site Engine Client Requirements

	Requirements
CPU Speed	3.0 GHz Dual Core Processor
Memory	8 GB (4 GB for 32-bit OS)
Disk Size	300 MB (User's home directory requires 50 MB for file storage)
Java Runtime Environment (JRE) (Oracle Java only)	Version 8
Browser ¹ (Enable JavaScript and Cookies)	Microsoft Edge (version 41.16.199.10000.0 in compatibility mode) Mozilla Firefox (version 34 or later ²) Google Chrome (version 33.0 or later)

¹Browsers set to a zoom ratio of less than 100% might not display ExtremeCloud IQ - Site Engine properly (for example, missing borders around windows). Setting your browser to a zoom ratio of 100% corrects this issue.

²When accessing ExtremeCloud IQ - Site Engine using Firefox version 59.0.1 on a non-touchscreen system on which a Windows operating system is installed, the vertical scroll arrows do not display.

Virtual Engine Requirements

The ExtremeCloud IQ - Site Engine, ExtremeControl, and ExtremeAnalytics virtual engines must be deployed on a VMWare or Hyper-V server with a disk format of VHDX.

- The VMWare ExtremeCloud IQ - Site Engine virtual engines are packaged in the .OVA file format (defined by VMware).
- The Hyper-V ExtremeCloud IQ - Site Engine virtual engines are packaged in the .ZIP file format.

IMPORTANT:

For ESX and Hyper-V servers configured with AMD processors, the ExtremeAnalytics virtual engine requires AMD processors with at least Bulldozer based Opterons.

ExtremeCloud IQ - Site Engine Virtual Engine Requirements

Specifications	Small	Medium	Enterprise
Total CPU Cores	8	16	24
Memory	16 GB	32 GB	64 GB
Disk Size	240 GB	480 GB	960 GB
IOPS	200	200	10,000

Recommended scale based on server configuration:

Maximum APs	250	2,500	25,000
Maximum Wireless MUs	2,500	25,000	100,000
Maximum Managed Devices	100	1,000	10,000 air gap 8,000 connected
ExtremeControl End-Systems	N/A	50,000	200,000

Specifications	Small	Medium	Enterprise
Statistics Retention (Days)	90	180	180
ExtremeAnalytics	No	Yes	Yes
MU Events	No	Yes	Yes

IMPORTANT:

For optimal performance the CPU and Memory needs to reserved in the ESX Client and the virtual machine needs to be deployed using Thick Disk provisioning.

ExtremeControl Virtual Engine Requirements

Specifications	Small	Medium	Enterprise	Large Enterprise
Total CPU Cores	8	16	16	20
Memory	12 GB	16 GB	32 GB	48 GB
Disk Size	40 GB	120 GB	120 GB	120 GB
IOPS	200	200	200	200
Recommended scale based on server configuration:				
ExtremeControl End-Systems	3,000	6,000	9,000/12,000 ¹	12,000/24,000 ²
Authentication	Yes	Yes	Yes	Yes
Captive Portal	No	Yes	Yes/No ¹	Yes/No ²
Assessment	No	Yes	No	No

¹ The Enterprise ExtremeControlengine configuration supports two different scale options:

- Up to 9,000 end-systems if your network uses Captive Portal functionality.
- Up to 12,000 end-systems if your network does not use Captive Portal functionality.

² The Large Enterprise ExtremeControlengine configuration supports two different scale options:

- Up to 12,000 end-systems if your network uses Captive Portal functionality.
- Up to 24,000 end-systems if your network does not use Captive Portal functionality.

IMPORTANT:

For optimal performance the CPU and Memory needs to reserved in the ESX Client and the virtual machine needs to be deployed using Thick Disk provisioning.

ExtremeAnalytics Virtual Engine Requirements

Specifications	Small	Medium	Enterprise
Total CPU Cores	8	16	16
Memory	12 GB	32 GB	64 GB
Disk Size	40 GB	480 GB	960 GB
IOPS	200	10,000	10,000
Recommended scale based on server configuration:			
Flows Per Minute	250,000	500,000	750,000

Specifications	Small	Medium	Enterprise
End-Systems	10,000	20,000	30,000

IMPORTANT:

The ESXi free license supports a maximum of 8 CPU cores, and the medium and enterprise ExtremeAnalytics virtual engine installations require 16 CPU cores. Sixteen CPU cores are only available by purchasing a permanent license. To use the ExtremeAnalytics virtual engine with an ESXi free license, adjust the number of CPU cores to 8.

To reduce the possibility of impaired functionality, ensure at least 4 GB of swap space is available for flow storage on the ExtremeAnalytics virtual engine. To verify the amount of available RAM on your Linux system, use the `free` command

Fabric Manager Requirements

Specifications	Requirements
Total CPU Cores	4
Memory	9 GB
Memory allocated to Java:	
-Xms	4 GB
-Xmx	6 GB
Disk Size	60 GB

ExtremeControl Agent OS Requirements

The table below outlines the supported operating systems for end-systems connecting to the network through an ExtremeControl deployment that is implementing agent-based assessment. Additionally, the end-system must support the operating system disk space and memory requirements as provided by Microsoft® and Apple®.

Manufacturer	Operating System	Operating System Disk Space	Available/Real Memory
Windows ¹	Windows Vista	80 MB	40 MB (80 MB with Service Agent)
	Windows XP		
	Windows 2008		
	Windows 2003		
	Windows 7		
	Windows 8		
	Windows 8.1		
	Windows 10		
Mac OS X	Catalina	10 MB	120 MB
	Tiger		
	Snow Leopard		
	Lion		
	Mountain Lion		
	Mavericks		
	Yosemite		
	El Capitan		
Sierra			

¹Certain assessment tests require the Windows Action Center (previously known as Windows Security Center), which is supported on Windows XP SP2+, Windows Vista, and Windows 7, Windows 8, and Windows 8.1 operating systems.

ExtremeControl Agent support for Antivirus or Firewall products includes, but is not limited to, the following families of products:

- McAfee
- Norton
- Kaspersky
- Trend Micro
- Sophos

ExtremeControl Agent operating system support for the above products includes the latest Windows or Mac OS X versions currently available at the time of product release. The ExtremeControl Agent running on MAC Operating Systems requires Java Runtime Environment (JRE) support. Some features of various products might not be supported. For additional information on specific issues, see [Known Restrictions and Limitations](#).

ExtremeControl Supported End-System Browsers

The following table outlines the supported desktop and mobile end-system browsers connecting to the network through the Mobile Captive Portal of Extreme NetworksExtremeControl.

Medium	Browser	Version
Desktop	Microsoft Edge	41 and later
	Microsoft Internet Explorer	11 and later
	Mozilla Firefox	34 and later
	Google Chrome	33.0 and later
Mobile	Internet Explorer Mobile	11 and later (Windows Phone)
	Microsoft Edge	All versions
	Microsoft Windows 10 Touch Screen Native (Surface Tablet)	N/A
	iOS Native	9 and later
	Android Chrome	4.0 and later
	Android Native	4.4 and later
	Dolphin	All versions
	Opera	All versions

NOTES: A native browser indicates the default, system-installed browser. Although this might be Chrome (Android), this also includes the default, system-controlled browser used for a device's Captive Network Detection for a device. Typically, this is a non-configurable option for Wi-Fi Captive Network Detection, but default Android, Microsoft and iOS devices are tested for compatibility with the Mobile Captive Portal.

A mobile device can access the standard (non-mobile) version of the Captive Portal using any desktop-supported browsers available on a mobile device.

For other browsers, the Mobile Captive Portal requires the browser on the mobile device to be compatible with Webkit or Sencha Touch.

To confirm compatibility with Webkit or Sencha Touch, open `http://<ExtremeControlEngine IP>/mobile_screen_preview` using your mobile web browser.

- If the browser is compatible, the page displays properly.
- If the browser is not compatible with the Mobile Captive Portal, the following error displays:



ExtremeControl Engine Version Requirements

For complete information on ExtremeControl engine version requirements, see [Important Upgrade Information](#).

ExtremeControl VPN Integration Requirements

VPN concentrators are supported for use in ExtremeControl VPN deployment scenarios.

- Supported Functionality: Authentication and Authorization (policy enforcement)
Cisco ASA
Enterasys XSR
- Supported Functionality: Authentication
Juniper SA (requires an S-Series Stand Alone (SSA) system in order to provide access control)

NOTE: For all ExtremeControl VPN Deployment scenarios, an S-Series Stand Alone (SSA) system is required to change authorization levels beyond the initial authorization, such as when using assessment.

ExtremeControl SMS Gateway Requirements

The following SMS Gateways have been tested for interoperability with ExtremeControl:

- Clickatell
- Mobile Pronto

ExtremeControl SMS Text Messaging Requirements

The following mobile service providers are supported by default for SMS text messaging in an ExtremeControl deployment. Additional service providers can be added:

AT&T	Sprint PCS
Alltel	SunCom
Bell Mobility (Canada)	T-Mobile
Cingular	US Cellular
Metro PCS	Verizon
Rogers (Canada)	Virgin Mobile (US and Canada)

ExtremeAnalytics Requirements

To use an ExtremeSwitching X440-G2 switch as an Application Telemetry source for ExtremeAnalytics, install firmware version 22.4.1.4-patch2-5 or higher.

Ekahau Maps Requirements

ExtremeCloud IQ - Site Engine supports importing Ekahau version 8.x maps in .ZIP format.

Guest and IoT Manager Requirements

Guest and IoT Manager Server OS Requirements

These are the operating system requirements for Guest and IoT Manager server:

Manufacturer	Operating System
VMware® (ExtremeCloud IQ - Site Engine Virtual Engine)	VMware ESXi™ 5.5 server VMware ESXi™ 6.0 server VMware ESXi™ 6.5 server vSphere (client only)™

Guest and IoT Manager Outlook Add-in Client Requirements

These are the requirements for the Client Machines, which need to run Guest and IoT Manager Outlook Add-in.

Manufacturer	Operating System
Windows ¹	Windows 7 Windows 10
Mac OS X	Sierra High Sierra Mojave

¹Microsoft® Outlook® 2016 is needed on Windows/Mac clients for the add-in to operate.

Guest and IoT Manager Virtual Engine Requirements

The VMWare Guest and IoT Manager virtual engines are packaged in the .OVA file format (defined by VMware) and needs an x86, 64-bit capable environment

Specifications	Minimum	Recommended
Total CPU Cores	2	4
Memory	2 GB	4 GB
Disk Size	80 GB	80 GB
Interfaces	1 Physical NIC	3 Physical NICs

Guest and IoT Manager Supported Browsers

The following table outlines the supported desktop and mobile browsers that can be used to launch Guest and IoT Manager Admin and Provisioner Web Application:

Medium	Browser	Version
Desktop	Microsoft Internet Explorer	11 and later
	Mozilla Firefox	63 and later
	Google Chrome	65 and later
	Microsoft Edge	42 and later
	Safari	12 and later
Mobile ¹	iOS Native	9 and later
	Android Chrome	65 and later
	US Browser	11.5 and later
	Opera	40 and later
	Firefox	63 and later

¹Mobile Browsers are supported only for the Guest Self-Service Provisioning flow.

NOTES:

- A mobile device can access the Guest and IoT Manager Application by using any desktop-supported browsers available on a mobile device. Before login, make sure to select the **Desktop site** option in the browser options.
- Browsers set to a zoom ratio of less than 100% might not display Guest and IoT Manager Application properly (for example, missing borders around windows). Setting your browser to a zoom ratio of 100% corrects this issue.
- Guest and IoT Manager Application is best viewed in 1920 x 1080 resolution or higher. Lower resolutions might result in improper layouts in some cases.
- If you are using self-signed certificates, they must be added in the Trusted Root Certificate store on the client machine or you might observe issues in the “print” use cases. This is only applicable for Microsoft Edge and Microsoft Internet Explorer browsers.