



ExtremeCloud™ IQ - Site Engine Release Notes

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23.04.11 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 23.04.11 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 23.04.11 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

Added support for new wireless controller E3125.

ExtremeAnalytics

ExtremeAnalytics Enhancements

Universal Series 5720 running Switch Engine firmware 32.4 or later can be added as a Flow Source.

Customer Found Defects and Known Issues

Customer Found Defects Addressed 23.04.11

| ExtremeManagement CFDs Addressed | ID |
|--|-----------|
| Fixed an issue where notification emails failed to send due to a socket deadlock. | 02714464 |
| Updated to stop the transmission of many unnecessary VLAN Update messages between the front-end and back-end to reduce CPU load on the system. | 02723599 |
| Updated so that when adding a new device, the poll group is configured to the default value in Admin-Options-Status Poller. | 02746443 |
| Updated so that VOSS/Fabric Engine running in ESM mode now supports archive backup and restore. | 02752928 |

| ExtremeAnalytics CFDs Addressed | ID |
|--|-----------|
| Updated ExtremeAnalytics Deployment guide documentation to add that since VOSS/Fabric Engine version 8.8 the telemetry source IP can be either Management VLAN or Management CLIP - GRT or Management CLIP - VRF. When adding older versions of VOSS/Fabric Engine to the ExtremeAnalytics only Management CLIP - GRT can be used as a Telemetry Source address. | 02698496 |

| ExtremeControl CFDs Addressed | ID |
|---|----------------------|
| Fixed an issue where wireless event processing could cause the end-system queue to fill and drop events. | 02710405 02749662 |
| Fixed an issue where reauthentication of end-systems on Cisco switches could cause an ExtremeControl Engine to exhaust available memory. | 02722013 |
| Updated so that after an ExtremeControl Engine restart, the first CRL update task starts running after 5 mins instead of 1 hour. Subsequent CRL checks still occur at regular 1 hour intervals. | 02731398 |

Customer Found Defects Addressed 23.04.10

| ExtremeCloud IQ - Site Engine CFDs Addressed | ID |
|--|-----------|
| Improved the overall performance of the system by optimizing the data storage process to resolve an error of "Unable to communicate with ExtremeCloud IQ properly after onboarding. You may need to try again later after verifying network connectivity". | 02737367 |
| Updated to ensure that LACP is administratively enabled when creating an SMLT (MLAG) interface. | 02677831 |

| ExtremeControl CFDs Addressed | ID |
|---|----------------------|
| Fixed an issue with apt-get autoremove removing the required samba packages on an ExtremeControl appliance. This fix has also been applied to additional affected appliances. | 02688963 |
| Removed the settings panel for Add Device to Access Control Engine Group when using Configure Devices from the Discovered Devices view. These settings are not used and are determined automatically. | 0269107 |
| Fixed an issue where in some Guest and IoT Manager (GIM) deployments, the guest users in GIM remained in a first login pending state forever. | 02697554 |
| Updated tls_max_version to 1.2 as default. | 02717125 |
| Fixed an issue where saving Access Control end-system group descriptions with accented or special characters caused exceptions on Access Control Engine. | 02726457 |
| Fixed an issue where some policy mapping entries, such as Organization 1, 2,3, VLAN Egress, Port Profile, Virtual Router, and more were not showing up in the Enforce Preview view when changes occurred. | 02732774 |
| Fixed an issue where Access Control was binding to all available network interfaces for portal service. Now only the interface IP address is bound to the portal service. | 02741265 |
| Updated so that Firmware Scheduled option is enabled for devices that don't support timed reset. Updated so that Firmware Download message column is visible during download or reset instead of hidden. | 02764220 02766057 |

| ExtremeManagement CFDs Addressed | ID |
|--|----------------------|
| Removed code that was causing high CPU usage and delay while processing wireless APs and controllers. | 02581543 02626279 |
| Fixed refreshing the grid view when changing port templates caused a rendering issue. | 02622990 |
| Updated Connect services table column headers to be more descriptive and include tooltips. | 02687846 |
| Fixed an issue with Connect Intune module preserving and re-using an expired refresh token. | 02699268 |
| Updated so that incorrectly formed extremeLastSaveConfigFileName traps can be processed. | 02716163 |
| Updated report designer analytics components to show preview data. | 02723794 |
| Updated token auth logging to level debug to avoid filling logs with Megabytes of information for external API call scripts that are running with invalid tokens. | 02728981 |
| Fixed an issue where renaming a site could lose customer templates defined in that site or it's child sites. | 02730050 |
| Restored previous behavior for health reported CPU, memory, and temperature for switches and stack primary units. Also reduced outstanding PDUs so that BOSS stack devices can avoid timeout during discovery. | 02730192 |
| Restored aggregation of all controller statistics to avoid skipping of secondary paired controllers. | 02741673 |

Known Issues Addressed in 23.04.11

ExtremeManagement Issues Addressed

During device onboarding, ZTP+ now checks if the device settings permit upgrades before upgrading firmware.

Known Issues Addressed in 23.04.10

ExtremeControl Issues Addressed

The tooltip is now removed from Add Switches to Access Control Engine Group.

Added a new alarm that propagates from ExtremeControl to the switch for a failure to configure RADIUS on the device using Access Control Enforce.

ExtremeManagement Issues Addressed

When a VOSS/Fabric Engine device is onboarded with ZTP+, the ExtremeCloud IQ - Site Engine now sends VLANs with the corresponding VRF context.

Fixed incorrect ERS stack unit temperature values shown in Celsius.

EXOS/Switch Engine Ist files downloaded as gz are now parsed for version and supported models.

Revoking multiple licenses within the same minute resulted in the same filename which could cause the original file to be overwritten.

Fixed an issue of the alarm view displaying an internal target tag when a workflow activity signal creates an event with the event definition subcomponent empty.

Addressed Vulnerabilities

This section presents the vulnerabilities reported by vulnerability scanners in previous versions. The following components received updates in 23.4 regardless of whether the vulnerability could have been exploited or not. If you need more information on vulnerability testing, see [Security and Vulnerability Testing](#).

23.04.11 ExtremeCloud IQ - Site Engine, ExtremeAnalytics, ExtremeControl, and Application Analytics Traffic Sensor **images:**

CVE-2021-3669, CVE-2021-4166, CVE-2021-4192, CVE-2021-4193, CVE-2022-0213, CVE-2022-0261, CVE-2022-0318, CVE-2022-0319, CVE-2022-0351, CVE-2022-0359, CVE-2022-0361, CVE-2022-0368, CVE-2022-0408, CVE-2022-0413, CVE-2022-0443, CVE-2022-0554, CVE-2022-0572, CVE-2022-0629, CVE-2022-0685, CVE-2022-0714, CVE-2022-0729, CVE-2022-1629, CVE-2022-1674, CVE-2022-1720, CVE-2022-1733, CVE-2022-1735, CVE-2022-1785, CVE-2022-1796, CVE-2022-1851, CVE-2022-1898, CVE-2022-1927, CVE-2022-1942, CVE-2022-1968, CVE-2022-2124, CVE-2022-2125, CVE-2022-2126, CVE-2022-2129, CVE-2022-2175, CVE-2022-2183, CVE-2022-2196, CVE-2022-2206, CVE-2022-2207, CVE-2022-2304, CVE-2022-2344, CVE-

2022-2345, CVE-2022-2571, CVE-2022-2581, CVE-2022-2845, CVE-2022-2849, CVE-2022-2923, CVE-2022-2946, CVE-2022-2980, CVE-2022-3108, CVE-2022-3424, CVE-2022-36280, CVE-2022-3903, CVE-2022-41218, CVE-2022-4129, CVE-2022-4382, CVE-2022-47929, CVE-2023-0045, CVE-2023-0266, CVE-2023-0394, CVE-2023-1073, CVE-2023-1074, CVE-2023-1281, CVE-2023-1326, CVE-2023-22490, CVE-2023-23455, CVE-2023-23559, CVE-2023-26545, CVE-2023-28328, CVE-2023-28450, CVE-2023-28484, CVE-2023-28486, CVE-2023-28487, CVE-2023-29469

23.04.10 ExtremeCloud IQ - Site Engine, ExtremeAnalytics, ExtremeControl, and Application Analytics Traffic Sensor **images:**

CVE-2021-36222, CVE-2021-37750, CVE-2022-29154, CVE-2022-3169, CVE-2022-3424, CVE-2022-3435, CVE-2022-3479, CVE-2022-3521, CVE-2022-3545, CVE-2022-3623, CVE-2022-3628, CVE-2022-36280, CVE-2022-3640, CVE-2022-3745, CVE-2022-41218, CVE-2022-4139, CVE-2022-42328, CVE-2022-42329, CVE-2022-42895, CVE-2022-4378, CVE-2022-47024, CVE-2022-47520, CVE-2022-47929, CVE-2022-48303, CVE-2023-0045, CVE-2023-0049, CVE-2023-0051, CVE-2023-0054, CVE-2023-0266, CVE-2023-0288, CVE-2023-0394, CVE-2023-0433, CVE-2023-0461, CVE-2023-0767, CVE-2023-1170, CVE-2023-1175, CVE-2023-1264, CVE-2023-20938, CVE-2023-23454, CVE-2023-23455, CVE-2023-23914, CVE-2023-23915, CVE-2023-23916, CVE-2023-24329, CVE-2023-27533, CVE-2023-27534, CVE-2023-27535, CVE-2023-27536, CVE-2023-27538

Installation, Upgrade, and Configuration Changes

Installation Information

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 23.04.11 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 23.04.11.

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 23.4 |
|---|-------|-------|--|
| | 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 23.04.11 and then upgrade the feature.
- Fabric Manager version 22.09.13.5 is compatible with ExtremeCloud IQ - Site Engine version 23.4. If you are running a previous version of Fabric Manager, upgrade your deployment to Fabric Manager 22.09.13.5 for use with ExtremeCloud IQ - Site Engine version 23.4.
- 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 23.04.11, ensure the DNS server IP address is correctly configured.
- When upgrading to ExtremeCloud IQ - Site Engine version 23.04.11, 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 23.04.11 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 23.04.11, 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 23.04.11 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 23.04.11:

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 23.04.11 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 23.04.11, the Default Gateway IP Address is configured as part of the VLAN. In 23.04.11, the Default Gateway IP Address is configured as part of the VRF.

When enforcing VRFs to a device after upgrading to version 23.04.11, 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 23.04.11 due to the increase in disk space usage required. To enable event collection, select **Enable Event Collection** **Event Analyzer**. Then select **Administration > Options > [Event Analyzer](#)**.

Internet Explorer is not supported in ExtremeCloud IQ - Site Engine version 23.04.11.

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 Mozilla Firefox Google Chrome |

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.

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 |
| 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 |
| 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 |
|---------|---|
| Desktop | Microsoft Edge Microsoft Internet Explorer Mozilla Firefox Google Chrome |
| Mobile | Internet Explorer Mobile Microsoft Edge Microsoft Windows 10 Touch Screen Native (Surface Tablet) iOS Native Android Chrome Android Native Dolphin Opera |

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 |

| Specifications | Minimum | Recommended |
|----------------|----------------|-----------------|
| 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.