



# ExtremeCloud IQ Site Engine Security Integration Guide:

## Best Practices for Configuration, Authentication, and Device Management

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## Abstract

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This security integration guide for ExtremeCloud™ IQ Site Engine outlines technical recommendations to harden the platform against potential vulnerabilities. The guide provides best practices in detailed procedures for securing installation, user authentication, SNMP configurations, SQL access, and HTTPS communications. Key practices include disabling root SSH access, enforcing external authentication, using SNMPv3 with SHA/AES, replacing default credentials, and securing REST API and SMTP connections. The guide emphasizes using SCP over TFTP, HTTPS over HTTP, and SSH over Telnet for device management. The guide also covers auditing configurations, log export to SIEM systems, and restricting access to scripts, workflows, and APIs. Specific sections address security configurations for integrated components such as ExtremeControl and ExtremeAnalytics, including credential management, auditing, and secure communication protocols. This document is intended for IT administrators and security professionals with intermediate to advanced technical expertise.

## Overview

The purpose of this document is to provide guidance for the best security practices that should be followed for ExtremeCloud IQ Site Engine. Failure to follow these practices could leave your system vulnerable to security breaches.

## Best Practices

### Installation Wizard

#### User Running the Application

When the installation wizard prompts you to run as root, select **No** and run the application as a non-root user.

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

User does not exist, we need to create it.

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

You have selected to run as netsight
Do you accept (y/n) [y] _
```

Figure 1: Installation wizard

#### SNMP profile

By default, the wizard configures the embedded SNMP. Use the most secure options, SHA and AES, instead of the default values. You should also use unique passwords.

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

0. Accept the current settings
1. SNMP User:                               SnmpUs3r
2. SNMP Authentication Protocol: SHA
3. SNMP Authentication:                     Snmp4uthCr3d
4. SNMP Privacy Protocol:                   AES
5. SNMP Privacy:                             SnmpPr1vCr3d
6. Modify all settings
=====
Enter selection [0]:
```

Figure 2: SNMP configuration

Use the same values in the SNMP profile.

Figure 3: Site Engine SNMP configuration

### Authentication to the application

Use an external authentication source for users logging into the application. See [Authentication Method](#) for additional information.

### Deny SSH access to Site Engine

Deny remote root access to the operating system (OS).

**Option 1:** If the application is running as root, navigate to **Administration > Users > SSH Configuration** and select **Manage SSH Configuration** and **Disable Remote Root Access**.

See [Network Settings](#) for additional information.

**Option 2:** Modify the `/etc/ssh/sshd_config` file and change the value for `PermitRootLogin` directive from **yes** to **no**.

### External access to SQL

If external access to the internal SQL database is not needed, drop the incoming packets using embedded iptables. Execute the following commands in the operating system:

```
iptables -A INPUT ! -i lo -p tcp --dport 4589 -j DROP
```

To make the change permanent use:

```
echo "iptables -A INPUT ! -i lo -p tcp --dport 4589 -j DROP"
>> /etc/iptables.rules
```

### Site Engine - Change password to SQL database

Admin access to the SQL database is not permitted from external sources by default. Change the default password to the SQL database especially if external access to SQL is needed.

1. Select **Administration > Backup/Restore > Advanced**
2. Change the password and click **Save**
3. Confirm the change

4. Wait until the server restarts

**Note**

SQL credentials are stored in the backup of the product. Restoring the backup will restore credentials also. To restore the backup in a fresh new system requires this procedure to be executed before the restoration. Restoring the initial database will not overwrite those credentials.

## Auditing in Site Engine

The audit feature should be used. See [Enable CLI Auditing](#) for additional information.

## Web Terminal Logging

Additional security can be added by auditing the actions made by users in the web terminal. To set up the audit function:

1. Select **Administration > Diagnostics**
2. Under **Level**, select **Advanced**
3. Select **System > Web Terminal**
4. Select **Enable Logging**

See [Terminal](#) for additional information.

## Use trusted HTTPs Server Certificate

Use trusted CA generated HTTPS certificates. To replace the certificate:

1. Select **Administration > Certificates**
2. Select **Update** under **Server Configuration Information**
3. Replace the default certificate with the certificate trusted by CA.

See [Certificates](#) for additional information.

## Review Ciphers used by HTTPS

Some security tools recommend reducing the Ciphers allowed for communication with the application. Review Ciphers allowed by the webserver.

**Note**

Changes will affect the ability of devices to ZTP+ and communication between Engines and Site Engine.

See [How to Change Default Ciphers used by Extreme Management Center Web GUI](#) for additional information.

## Disable Password Auto Complete for the Web Interface

To disable Auto Complete:

1. Select **Administration > Options > Web Server**
2. Select **Disable Password Auto Complete for Web Interfaces**

See [Password Auto Complete](#) for additional information.

## Managing devices

### Use SSH instead of Telnet

Use the SSH protocol for scripting and CLI access to the managed devices. To configure SSH:

1. Select **Administration > Profiles**.
2. In the bottom half of the screen, select **CLI Credentials**.
3. Select a credential to activate **Add** or **Edit**.
4. In the pop-up window, select **SSH** for **Type** value.

See [CLI Credentials Subtab](#) for additional information.

### Disable Device Terminal Automatic Login

To disable automatic login:

1. Select **Administration > Options > Device Terminal**
2. Clear **Enable Auto Login**.

See [Device Terminal Options](#) for additional information.

### Use HTTPS instead of HTTP for REST calls to Managed Devices

To configure your REST calls to use HTTPS:

1. Select **Network > Devices**.
2. Right-click on the device
3. Select **Configure > Device**.
4. Clear **Use Default WebView URL**
5. In **WebView URL**, replace the default `http://%IP` with `https://%IP:443`.

The modification can also be done through [Vendor Profiles](#). See [Device](#) for additional information.

### Use SNMPv3 instead of SNMPv1

SNMPv3 is the most secure method in the device access profile for write and maximum access. Modern devices usually have enough performance to handle the most secure methods for read access also. The best security practice is to use the **AuthPriv** security level with **SHA** and **AES** methods.

To configure the access profile:

1. Select **Administration > Profiles**.
2. Select the device to update, right-click, and select **Edit** or select **Edit** from the toolbar. You can also setup the access profile when you add the profile.
3. Select **SNMPv3** for the **SNMP Version**

See [Profiles Section](#) for additional information.

### Inventory

Use SCP instead of Trivial File Transfer Protocol (TFTP) for transferring files during backup, restore, firmware upgrade actions. To configure SCP:

1. Select **Network > Devices**.
2. Select the device and right-click
3. Select **Archives > Inventory Settings**

The default behavior for new devices can be changed through [Vendor Profiles](#). See [Inventory Settings](#) for additional information.

### Restrict Access to Scripts and Workflows

Only necessary personnel should have access to modify or create scripts and workflows. Users with access to scripts and workflows have access to the OS through Python. To restrict access:

1. Select **Administration > Users**.
2. In the **Authorization Groups** at the bottom of the window, select the group to modify.
3. Right-click and select **Edit** or select **Edit** from the **Authorization Groups** toolbar. You can also restrict access when you add a group.
4. In the **Edit Authorization Group** window, select **Advanced** in Category.
5. Expand **XIQ-SE OneView**.
6. Expand **Workflows/Scripts**.
7. Clear **View and Edit Workflows, Scripts and Saved Tasks**.
8. Select **Save**.
9. The capability to Edit Workflows, Scripts, and Saved Tasks has id **OV\_WORKFLOW\_WRITE**. See [Authorization Group Capabilities](#) for additional information.

The best security practice is to define **Authorization Groups (Roles)** for each workflow and script. See [Menus](#) for additional information.

### Restrict Access to API

Only necessary personnel should have access. To restrict API access:

1. Select **Administration > Users**
2. In **Authorization Groups** at the bottom of the window, select the group to modify.
3. Expand **Northbound API**.
4. Clear the choices that apply.
5. Select **Save**.



The best security practice is to use Client API access through tokens. See [Authorization Group Capabilities](#) for additional information.

#### Exporting logs to SIEM or Log Manager

The best security practice is to export logs to external applications performing long-term storage of logs and Log Management.

1. Create file `/etc/rsyslog.d/10-remote.conf` with the following content.

**NOTE** - Use a simple text editor to remove the extra line breaks from this sample content. Each line must start with either 'input' or 'module' declarations (except for the last line).

Adjust the destination (target):

```
module(load="imfile" PollingInterval="1" mode="inotify") input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/admin.log" tag="admin"
severity="info" facility="local6" PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/appid.log" tag="appid"
severity="info" facility="local6" PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/console.log"
tag="console" severity="info" facility="local6" PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/fabricManager.log"
tag="fabricManager" severity="info" facility="local6"
PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/gov_eng.log"
tag="Governance" severity="info"
facility="local6" PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/inventory.log"
tag="inventory" severity="info"
facility="local6" PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/nacApplianceEvent.log"
tag="nacApplianceEvent" severity="info" facility="local6"
PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/nsschedule.log"
tag="nsschedule" severity="info"
facility="local6" PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/Policy.log"
tag="Policy" severity="info" facility="local6" PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/tamAudit.log"
tag="tamAudit" severity="info" facility="local6" PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/tam.log"
```

```
tag="tam" severity="info" facility="local6" PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/wireless.log"
tag="wireless" severity="info" facility="local6"
PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/
wirelessAudit.log" tag="wirelessAudit" severity="info" facility="local6"
PersistStateInterval="10")
input(type="imfile"
file="/usr/local/Extreme_Networks/NetSight/appdata/logs/
wirelessEvent.log" tag="wirelessEvent" severity="info" facility="local6"
PersistStateInterval="10")

local6.* action(type="omfwd"
target="<ExternalSyslogServer>" port="514" protocol="UDP") & stop
```

2. Restart the rsyslog service  
systemctl restart rsyslog

### Securing SMTP connection

Use TLS or SSL on SMTP communication. See [How to Configure Extreme Management Center SMTP for Gmail, Microsoft SMTP, Exchange, Office 365, and Other Services](#) for additional information.

### ExtremeControl

#### Default credentials

##### *Admin Web Page Credentials*

To change the Access Control Engine default credentials for WebView:

1. Select **Control > Access Control > Configuration > Global & Engine Settings > Default > Credentials > Admin Web Page Credentials**
2. Enter a new username and password
3. Select **Save**

See [Admin Web Page Credentials](#) for additional information.

##### *Assessment Adapter*

To change the Assessment Adapter default credentials even if Assessment Adapter is not being used:

1. Select **Administration > Options > Access Control > Assessment Server > Assessment Agent Adapter Credentials**
2. Enter a new username and password
3. Select **Save**

See [Assessment Server](#) for additional information.

### Shared Secret

Change the Shared Secret default radius:

1. Select **Control > Access Control > Configuration > Global & Engine Settings > Engine Settings > Default > Credentials**
2. Under **Switch Configuration**, enter a new **Shared Secret**
3. Select **Save**

See [Switch Configuration](#) for additional information.

### Secure Communication

Secure communication should be configured between Access Control Engine and ExtremeCloud IQ – Site Engine. See [ExtremeCloud IQ - Site Engine and ExtremeControl Secure Communication](#) for additional information.

### Auditing

Enable the auditing feature:

1. Select **Control > Access Control > Configuration > Global & Engine Settings > Engine Settings > Default > Auditing > Enable Auditing**
2. Select **Enable Auditing**
3. Enter the auditing rules
4. Select **Save**

See [Auditing](#) for additional information.

### SSH access to the Operating System

Deny remote root access to the OS:

1. Select **Control > Access Control > Configuration > Global & Engine Settings > Engine Settings > Default > Network Settings**
2. Select **Manage SSH Configuration and Disable Remote Root Access**
3. Click **Save**



#### Note

Firmware upgrade of AccessControl Engine requires root privileges.

See [Manage SSH Configuration](#) for additional information.

### ExtremeAnalytics

#### Default credentials to WebView

Change the Analytics Engine default credentials for WebView.

1. Select **Analytics > Configuration > Engines**
2. Select one engine > **Configuration > Web Credentials**

3. Enter a new username and password
4. Select **Save**

See **Web Credentials** for additional information.

### Auditing

Enable the auditing feature.

1. Select **Analytics > Configuration > Engines**
2. Select one engine > **Configuration > Auditing**
3. Select **Enable Auditing**
5. Enter the auditing rules
6. Select **Save**

See **Auditing** for additional information.

### SSH access to the Operating System

Deny remote root access to the OS:

1. Select **Analytics > Configuration > Engines**
2. Select one engine > **Configuration > Network Settings**
3. Select **Manage SSH Configuration and Disable Remote Root Access**
4. Select **Save**



#### Note

Firmware upgrade of ApplicationAnalytics Engine requires root privileges.

See **SSH** for additional information.